

# INTERNATIONAL STANDARD

**IEC**  
**61360-4**

Second edition  
2005-03

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**Standard data element types with associated  
classification scheme for electric components –**

**Part 4:  
IEC reference collection of standard data  
element types and component classes**



Reference number  
IEC 61360-4:2005(E)

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### **Part 4: IEC reference collection of standard data element types and component classes**

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**STANDARD DATA ELEMENT TYPES WITH ASSOCIATED  
CLASSIFICATION SCHEME FOR ELECTRIC COMPONENTS –****Part 4: IEC reference collection of standard data element types  
and component classes**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61360-4 has been prepared by subcommittee 3D: Data sets for libraries of IEC technical committee 3: Information structures, documentation and graphical symbols.

This second edition cancels and replaces the first edition published in 1997. This second edition contains all data element type and class definitions from the first edition with an updated classification scheme and new definitions in the area of:

- a) the geometrical characteristics of the shapes of components, including figures and drawings;
- b) the characteristics for semiconductor die;
- c) data element types originating from the JEITA dictionary in Japan.

It establishes a classification and coding system of shapes for package outlines of electric and electromechanical components according to key geometrical characteristics.

The object of this addition to the standard is to define the information required on the shapes of components :

- for the design of component lands, footprints and piercing drawings;
- for determining the space occupied;
- for deriving dimensions and tolerances needed for automatic handling by inserters and onserters;
- to provide a classification scheme for the purposes of retrieval, selection and comparison of component shapes;
- to establish a coding system for identification of component package outlines;
- to provide a set of reference drawings for defining shape, size and relative position of the component body, mounting features, terminals and adjusters;
- to provide a set of data element type definitions for geometrical parameters in computer-sensible form.

This second edition extends the classification scheme and DET definitions with unpackaged and minimally packaged semiconductor die, with or without connection structures. It is a data specification which defines the requirements for

- product identity;
- product data;
- die mechanical information;
- test, quality and reliability information;
- handling, storage and mounting information;
- thermal data and electrical simulation data.

This second edition extends the classification and DET definitions with new entries originating from the JEITA dictionary, Japan.

The text of this standard is based on the following documents:

|             |                  |
|-------------|------------------|
| FDIS        | Report on voting |
| 3D/134/FDIS | 3D/136/RVD       |

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

IEC 61360 consists of the following parts, under the general title *Standard data element types with associated classification scheme for electric components*:

- Part 1: Definitions – Principles and methods
- Part 2: EXPRESS Dictionary schema
- Part 3: Maintenance and validation procedures
- Part 4: IEC reference collection of standard data element types and component classes
- Part 5 Extensions to the EXPRESS dictionary schema

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

Withdrawn  
IECNORM.COM : Click to view the full PDF of IEC 61360-4:2005

## INTRODUCTION

The contents of this document is in line with the current contents of the IEC online 61360 Component Data Dictionary.

- a) The complete classification scheme is given in Annex A.
- b) The new/amended data element types with their identifier, as listed below, are given in Annex C.

|            |            |            |            |            |
|------------|------------|------------|------------|------------|
| AAD001-001 | AAD089-001 | AAE000-001 | AAG026-001 | AAG074-001 |
| AAD002-001 | AAD090-001 | AAE002-006 | AAG027-001 | AAG075-001 |
| AAD003-001 | AAD091-001 | AAE003-006 | AAG028-001 | AAG076-001 |
| AAD004-001 | AAD093-001 | AAE004-007 | AAG029-001 | AAG077-001 |
| AAD005-001 | AAD095-001 | AAE060-006 | AAG030-001 | AAG078-001 |
| AAD006-001 | AAD115-001 | AAE349-006 | AAG031-001 | AAG079-001 |
| AAD007-001 | AAD116-001 | AAE351-006 | AAG032-001 | AAG080-001 |
| AAD008-001 | AAD117-001 | AAE545-006 | AAG033-001 | AAG081-001 |
| AAD009-001 | AAD118-001 | AAE618-005 | AAG034-001 | AAG082-001 |
| AAD010-001 | AAD119-001 | AAE635-001 | AAG035-001 | AAG083-001 |
| AAD011-001 | AAD120-001 | AAE878-005 | AAG036-001 | AAG084-001 |
| AAD012-001 | AAD121-001 |            | AAG037-001 | AAG085-001 |
| AAD013-001 | AAD122-001 | AAF101-006 | AAG038-001 | AAG086-001 |
| AAD014-001 | AAD123-001 | AAF311-007 | AAG039-001 | AAG087-001 |
| AAD015-001 | AAD124-001 | AAF390-002 | AAG040-001 | AAG088-001 |
| AAD016-001 | AAD125-001 | AAF464-001 | AAG041-001 | AAG089-001 |
| AAD017-001 | AAD126-001 | AAF465-001 | AAG042-001 | AAG090-001 |
| AAD018-001 | AAD127-001 | AAF466-001 | AAG043-001 | AAG091-001 |
| AAD019-001 | AAD129-001 | AAF467-001 | AAG044-001 | AAG092-001 |
| AAD020-001 | AAD130-001 | AAF468-001 | AAG045-001 | AAG093-002 |
| AAD021-001 | AAD131-001 | AAF469-001 | AAG046-001 | AAG094-002 |
| AAD022-001 | AAD132-001 |            | AAG047-001 | AAG095-001 |
| AAD023-001 | AAD133-001 | AAG000-001 | AAG048-001 | AAG096-001 |
| AAD024-001 | AAD134-001 | AAG001-001 | AAG049-001 | AAG097-001 |
| AAD025-001 | AAD137-001 | AAG002-001 | AAG050-001 | AAG098-001 |
| AAD026-001 | AAD140-001 | AAG003-001 | AAG051-001 | AAG099-001 |
| AAD027-001 | AAD141-001 | AAG004-001 | AAG052-001 | AAG100-001 |
| AAD028-001 | AAD142-001 | AAG005-001 | AAG053-001 | AAG101-001 |
| AAD029-001 | AAD143-001 | AAG006-001 | AAG054-001 | AAG102-001 |
| AAD030-001 | AAD144-001 | AAG007-001 | AAG055-001 | AAG103-001 |
| AAD031-001 | AAD145-001 | AAG008-001 | AAG056-001 | AAG104-001 |
| AAD032-001 | AAD146-001 | AAG009-001 | AAG057-001 | AAG105-001 |
| AAD033-001 | AAD147-001 | AAG010-001 | AAG058-001 | AAG107-001 |
| AAD049-001 | AAD148-001 | AAG011-001 | AAG059-001 | AAG108-001 |
| AAD054-001 | AAD149-001 | AAG012-001 | AAG060-001 | AAG109-001 |
| AAD055-001 | AAD150-001 | AAG013-001 | AAG061-001 | AAG110-001 |
| AAD056-001 | AAD151-001 | AAG014-001 | AAG062-001 | AAG111-001 |
| AAD060-001 | AAD153-001 | AAG015-001 | AAG063-001 | AAG112-001 |
| AAD070-001 | AAD154-001 | AAG016-001 | AAG064-001 | AAG113-001 |
| AAD071-001 | AAD155-001 | AAG017-001 | AAG065-001 | AAG114-001 |
| AAD072-001 | AAD156-001 | AAG018-001 | AAG066-001 | AAG115-001 |
| AAD078-001 | AAD157-001 | AAG019-001 | AAG067-001 | AAG116-001 |
| AAD081-001 | AAD158-001 | AAG020-001 | AAG068-001 | AAG117-001 |
| AAD082-001 | AAD159-001 | AAG021-001 | AAG069-001 | AAG118-001 |
| AAD085-001 | AAD160-001 | AAG022-001 | AAG070-001 | AAG119-001 |
| AAD086-001 | AAD161-001 | AAG023-001 | AAG071-001 | AAG120-001 |
| AAD087-001 | AAD162-001 | AAG024-001 | AAG072-001 | AAG121-001 |
| AAD088-001 |            | AAG025-001 | AAG073-001 | AAG122-001 |



|            |            |            |            |            |
|------------|------------|------------|------------|------------|
| AAG123-001 | AAJ020-001 | AAJ046-001 | AAJ073-001 | AAJ100-001 |
| AAG124-001 | AAJ021-001 | AAJ047-001 | AAJ074-001 | AAJ101-001 |
| AAG125-001 | AAJ022-001 | AAJ048-001 | AAJ075-001 | AAJ102-001 |
| AAG129-001 | AAJ023-001 | AAJ049-001 | AAJ076-001 | AAJ103-001 |
| AAG130-001 | AAJ024-001 | AAJ051-001 | AAJ077-001 | AAJ104-001 |
| AAG131-002 | AAJ025-001 | AAJ052-001 | AAJ078-001 | AAJ105-001 |
| AAG133-002 | AAJ026-001 | AAJ053-001 | AAJ079-001 | AAJ106-001 |
| AAH005-001 | AAJ027-001 | AAJ054-001 | AAJ080-001 | AAJ107-001 |
|            | AAJ028-001 | AAJ055-001 | AAJ081-001 | AAJ108-001 |
| AAJ001-001 | AAJ029-001 | AAJ056-001 | AAJ082-001 | AAJ109-001 |
| AAJ002-001 | AAJ030-001 | AAJ057-001 | AAJ083-001 | AAJ110-001 |
| AAJ003-001 | AAJ031-001 | AAJ058-001 | AAJ084-001 | AAJ111-001 |
| AAJ004-001 | AAJ032-001 | AAJ059-001 | AAJ085-001 | AAJ112-001 |
| AAJ006-002 | AAJ033-001 | AAJ060-001 | AAJ086-001 | AAJ113-001 |
| AAJ007-001 | AAJ034-001 | AAJ061-001 | AAJ087-001 | AAJ114-001 |
| AAJ008-001 | AAJ035-001 | AAJ062-001 | AAJ088-001 | AAJ115-001 |
| AAJ009-001 | AAJ036-001 | AAJ063-001 | AAJ089-001 | AAJ116-001 |
| AAJ011-001 | AAJ037-001 | AAJ064-001 | AAJ090-001 | AAJ117-001 |
| AAJ012-002 | AAJ038-001 | AAJ065-001 | AAJ091-001 | AAJ118-001 |
| AAJ013-001 | AAJ039-001 | AAJ066-001 | AAJ092-001 | AAJ119-001 |
| AAJ014-001 | AAJ040-001 | AAJ067-001 | AAJ093-001 | AAJ120-001 |
| AAJ015-001 | AAJ041-001 | AAJ068-001 | AAJ094-001 | AAJ121-001 |
| AAJ016-001 | AAJ042-001 | AAJ069-001 | AAJ095-001 | AAJ122-001 |
| AAJ017-001 | AAJ043-001 | AAJ070-001 | AAJ096-001 | AAJ123-001 |
| AAJ018-001 | AAJ044-001 | AAJ071-001 | AAJ098-001 | AAJ124-001 |
| AAJ019-001 | AAJ045-001 | AAJ072-001 | AAJ099-001 |            |

c) The new/amended classes with their identifier, as listed below, are given in Annex B.

|            |            |            |            |            |
|------------|------------|------------|------------|------------|
| AAA000-001 | AAA307-001 | AAA349-001 | AAA384-001 | AAA420-001 |
| AAA002-003 | AAA308-001 | AAA350-001 | AAA385-001 | AAA421-001 |
| AAA021-003 | AAA309-001 | AAA351-001 | AAA386-001 | AAA422-001 |
| AAA026-002 | AAA311-001 | AAA352-001 | AAA387-001 | AAA423-001 |
| AAA031-002 | AAA312-001 | AAA353-001 | AAA388-001 | AAA424-001 |
| AAA056-002 | AAA313-001 | AAA354-001 | AAA389-001 | AAA426-001 |
| AAA074-002 | AAA314-001 | AAA355-001 | AAA390-001 | AAA427-001 |
| AAA077-002 | AAA318-001 | AAA356-001 | AAA391-001 | AAA428-001 |
| AAA089-002 | AAA319-001 | AAA357-001 | AAA392-001 | AAA429-002 |
| AAA092-001 | AAA320-001 | AAA358-001 | AAA393-001 | AAA430-002 |
| AAA093-002 | AAA322-001 | AAA359-001 | AAA394-001 | AAA431-002 |
| AAA096-002 | AAA323-001 | AAA360-001 | AAA395-001 | AAA432-002 |
| AAA098-002 | AAA324-001 | AAA361-001 | AAA396-001 | AAA433-002 |
| AAA100-003 | AAA325-001 | AAA362-001 | AAA397-001 | AAA434-002 |
| AAA102-002 | AAA326-001 | AAA363-001 | AAA398-001 | AAA435-001 |
| AAA115-002 | AAA327-001 | AAA364-001 | AAA399-001 | AAA436-001 |
| AAA147-003 | AAA328-001 | AAA365-001 | AAA400-001 | AAA437-001 |
| AAA148-002 | AAA329-001 | AAA366-001 | AAA401-001 | AAA438-001 |
| AAA149-002 | AAA330-001 | AAA367-001 | AAA402-001 | AAA439-001 |
| AAA174-002 | AAA332-001 | AAA368-001 | AAA403-001 | AAA440-001 |
| AAA218-002 | AAA333-001 | AAA369-001 | AAA404-001 | AAA441-001 |
| AAA229-001 | AAA334-001 | AAA370-001 | AAA405-001 | AAA442-001 |
| AAA230-001 | AAA335-001 | AAA371-001 | AAA406-001 | AAA443-001 |
| AAA231-001 | AAA336-001 | AAA372-001 | AAA407-001 | AAA444-001 |
| AAA232-001 | AAA337-001 | AAA373-001 | AAA408-001 | AAA445-001 |
| AAA295-001 | AAA339-001 | AAA374-001 | AAA409-001 | AAA446-001 |
| AAA296-001 | AAA340-001 | AAA375-001 | AAA410-001 | AAA447-001 |
| AAA297-001 | AAA341-001 | AAA376-001 | AAA411-001 | AAA448-001 |
| AAA298-001 | AAA342-001 | AAA377-001 | AAA412-001 | AAA449-001 |
| AAA299-001 | AAA343-001 | AAA378-001 | AAA413-001 | AAA450-001 |
| AAA301-001 | AAA344-001 | AAA379-001 | AAA414-001 | AAA451-002 |
| AAA302-001 | AAA345-001 | AAA380-001 | AAA415-001 | AAA452-001 |
| AAA303-001 | AAA346-001 | AAA381-001 | AAA417-001 | AAA453-002 |
| AAA304-001 | AAA347-001 | AAA382-001 | AAA418-001 | AAA454-001 |
| AAA305-001 | AAA348-001 | AAA383-001 | AAA419-001 | AAA455-001 |

|            |            |            |            |            |
|------------|------------|------------|------------|------------|
| AAA456-001 | AAA525-001 | AAA550-001 | AAA579-001 | AAA597-001 |
| AAA501-001 | AAA526-001 | AAA551-001 | AAA580-001 | AAA601-001 |
| AAA502-001 | AAA527-001 | AAA554-001 | AAA581-001 | AAA602-001 |
| AAA503-001 | AAA528-001 | AAA555-001 | AAA582-001 | AAA603-001 |
| AAA504-001 | AAA536-001 | AAA556-001 | AAA583-001 | AAA604-001 |
| AAA505-001 | AAA537-001 | AAA557-001 | AAA584-001 | AAA605-001 |
| AAA509-001 | AAA538-001 | AAA561-001 | AAA585-001 | AAA606-001 |
| AAA510-001 | AAA539-001 | AAA562-001 | AAA586-001 | AAA607-001 |
| AAA511-001 | AAA540-001 | AAA563-001 | AAA587-001 | AAA608-001 |
| AAA512-001 | AAA541-001 | AAA564-001 | AAA588-001 | AAA609-001 |
| AAA513-001 | AAA542-001 | AAA565-001 | AAA589-001 | AAA610-001 |
| AAA514-001 | AAA543-001 | AAA566-001 | AAA590-001 | AAA611-001 |
| AAA516-002 | AAA544-001 | AAA569-001 | AAA591-001 | AAA612-001 |
| AAA517-001 | AAA545-001 | AAA572-001 | AAA592-001 | AAA613-001 |
| AAA518-001 | AAA546-001 | AAA573-001 | AAA593-001 |            |
| AAA522-001 | AAA547-001 | AAA575-001 | AAA594-001 |            |
| AAA523-001 | AAA548-001 | AAA576-001 | AAA595-001 |            |
| AAA524-001 | AAA549-001 | AAA578-001 | AAA596-001 |            |

d) The new/amended drawings with their identifier, as listed below, are given in Annex D.

|            |            |            |            |            |
|------------|------------|------------|------------|------------|
| DAA001-001 | DAA012-001 | DAA023-001 | DAA034-001 | DAA045-001 |
| DAA002-001 | DAA013-001 | DAA024-001 | DAA035-001 | DAA046-002 |
| DAA003-001 | DAA014-001 | DAA025-002 | DAA036-001 | DAA047-001 |
| DAA004-001 | DAA015-001 | DAA026-002 | DAA037-001 | DAA048-002 |
| DAA005-001 | DAA016-001 | DAA027-002 | DAA038-001 | DAA049-001 |
| DAA006-001 | DAA017-001 | DAA028-002 | DAA039-001 | DAA050-001 |
| DAA007-001 | DAA018-001 | DAA029-002 | DAA040-001 | DAA051-001 |
| DAA008-001 | DAA019-001 | DAA030-002 | DAA041-001 |            |
| DAA009-001 | DAA020-001 | DAA031-001 | DAA042-001 |            |
| DAA010-001 | DAA021-001 | DAA032-001 | DAA043-001 |            |
| DAA011-001 | DAA022-001 | DAA033-001 | DAA044-001 |            |

e) The new/amended figures with their identifier, as listed below, are given in Annex E.

|            |            |            |            |
|------------|------------|------------|------------|
| DAE001-001 | DAE004-001 | DAE012-001 | DAE042-001 |
| DAE002-001 | DAE005-001 | DAE021-001 | DAE092-001 |
| DAE003-001 | DAE009-001 | DAE040-001 | DAE119-001 |

## STANDARD DATA ELEMENT TYPES WITH ASSOCIATED CLASSIFICATION SCHEME FOR ELECTRIC COMPONENTS –

### Part 4: IEC reference collection of standard data element types and component classes

#### 1 General

##### 1.1 Scope and object

This part of IEC 61360 specifies within two dictionaries:

- the definitions of data element types for electric components and materials used in electrotechnical equipment and systems;
- the definitions of the component classes with associated classification scheme.

These definitions are related to electric components including electronic and electromechanical components and materials used in electrotechnical equipment and systems.

The object of this standard is to provide a set of uniquely-identified data element types with

- an unambiguously defined meaning;
- a defined value format, and
- a prescribed value domain for the non-quantitative data element types.

The classification scheme for components, the component class definitions (whereby the relevant and the valid characteristic properties by specific data element types are assigned to each class of components) are used to define the data element types unambiguously and to make the entire set of data element types manageable.

The collection of data element types from this standard are meant for use in computerized systems for component selection and component management, parts list processing and computer-aided design, -manufacturing and -testing

##### 1.2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050(702): 1992, *International Electrotechnical Vocabulary – Chapter 702: Oscillations, signals and related devices*

IEC 60191-4:1999, *Mechanical standardization of semiconductor devices – Part 4: Coding system and classification into forms of package outlines for semiconductor device packages*

IEC 61360-1: 2002, *Standard data element types with associated classification scheme for electric components – Part 1: Definitions – Principles and methods*

ES 59008-1, *Data requirements for semiconductor die – Part 1: General requirements*

ES 59008-2, *Data requirements for semiconductor die – Part 2: Vocabulary*

ES 59008-3, *Data requirements for semiconductor die – Mechanical, material and connectivity requirements*

ES 59008-4 (all parts), *Data requirements for semiconductor die – Specific requirements and recommendations*

ES 59008-5 (all parts), *Data requirements for semiconductor die – Particular requirements and recommendations for die types*

ES 59008-6-1, *Data requirements for semiconductor die – Part 6-1: Exchange data formats and data dictionary – Data exchange – DDX file format*

## 2 Terms and definitions

For the purposes of this document, the terms and definitions as given in clause 2 of IEC 61360-1, the terms and definitions of ES 59008-2 as well as the following apply.

### 2.1

#### **shape**

external form of a component package as given by the set of data element types

### 2.2

#### **seating plane**

theoretical plane of an electric component that coincides with the surface of the board if the component rests in its intended mounted position on the board

NOTE 1 This is often used as the reference plane.

NOTE 2 Not all components have a seating plane.

### 2.3

#### **terminal**

conductor that serves to connect a device electrically and/or mechanically with its environment

### 2.4

#### **terminal form**

form of a terminal of a package

### 2.5

#### **terminal position**

alignment of the physical position of the ends of the terminals of a component package

### 2.6

#### **outline style**

physical information enclosing the apparently plane figure presented by any object in sight, contour and/or external boundary of a component

### 2.7

#### **true**

qualifies the ideal value which characterises a quantity perfectly defined in the conditions which exist at the moment at which that quantity is observed, or the subject of a determininal

NOTE This value could be arrived at only if all causes of measurement error were eliminated and the population was infinite. In the case of a finite population, the complete population must be considered.

### 2.8

#### **true value**

value which characterises a quantity perfectly defined, in the conditions which exist when that value is examined

NOTE The true value of a quantity is an ideal concept and, in general, it cannot be known.

**2.9****package**

enclosure for one or more chips, film elements or other components, that allows electrical connection and provides mechanical and environmental protection

**2.10****case**

enclosure for one or more chips, film elements or other components, that allows mechanical connection and provides mechanical and environmental protection

**2.11****mounting hole**

hole in a mounting structure for mechanical connection and support

**2.12****mounting socket**

connector which intends to provide electrical and mechanical support for a component inserted into it

**3 Maintenance and validation methodology**

The collection of entities as defined in this standard is a dynamic collection which needs actively to be maintained.

IEC 61360-3 specifies the procedures that shall be followed by the validation agency and the maintenance agency of the IEC vocabulary of standard technical data element types with associated classification scheme and component classes as defined by this classification scheme.

**4 How to read the annexes****4.1 Classification tree**

In Annex A, the complete classification tree is given. Under the header '**Class**', the identifier of the class at that specific line is given, while under the header '**Class. DET**', on that line the identifier of the classifying data element type is given that has been used to define that class.

If relevant, under the header '**Drawing**' the identifier of the drawing related to the indicated '**Class**' is given.

**4.2 Classes**

For the classification of components<sup>2</sup> the principle of dividing the whole set of components into parts has been applied repeatedly, thereby creating a hierarchical tree of several levels of classes.

The goal of this classification scheme of components is to arrange the data element types in an unambiguous-structured way. A detailed description of the classification principles and the various attributes of the component class definitions are given in IEC 61360-1.

The various attributes of the component classes and the layout as used in this standard are explained with the aid of Figure 1a and Figure 1b. The class definitions are given in Annex B.

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<sup>2</sup> The classification principles are also applicable to other entities like materials, packages, geometries, etc.

|   |                                                                                                                                   |                    |    |    |
|---|-----------------------------------------------------------------------------------------------------------------------------------|--------------------|----|----|
|   | 1                                                                                                                                 | 2                  | 3  | 4  |
|   | AAA307-001                                                                                                                        |                    | 01 |    |
| 5 | cylindrical                                                                                                                       |                    |    | CY |
| 6 | A set of cylindrical package outline styles of which each outline style can be described with the same set of data element types. |                    |    |    |
| 7 | NOTE<br>CYLINDRICAL is a package style in which the body is cylindrical with the length no smaller than the diameter.             |                    |    |    |
| 8 | AAG056-001 terminal position code                                                                                                 |                    |    |    |
|   | <b>Subclasses</b>                                                                                                                 |                    |    |    |
|   | AAA325-001                                                                                                                        | axial leads        |    |    |
|   | AAA326-001                                                                                                                        | bottom leads       |    |    |
| 9 | AAA327-001                                                                                                                        | end connections    |    |    |
|   | AAA328-001                                                                                                                        | radial leads       |    |    |
|   | AAA329-001                                                                                                                        | uppers connections |    |    |

Figure 1a

|    |                                                                                                                                                                                                          |                          |    |      |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----|------|
|    | 1                                                                                                                                                                                                        | 2                        | 3  | 4    |
|    | AAA452-001                                                                                                                                                                                               |                          | 01 |      |
| 5  | clamp mount package                                                                                                                                                                                      |                          |    | B005 |
| 6  | A set of clamp-mount cylindrical package outline styles with screw terminals in standard form on the upper surface of which each outline style can be described with the same set of data element types. |                          |    |      |
| 11 | DAA047-001                                                                                                                                                                                               |                          |    |      |
|    | <b>Properties</b>                                                                                                                                                                                        |                          |    |      |
|    | AAG001-001                                                                                                                                                                                               | seated height            |    |      |
|    | AAG008-001                                                                                                                                                                                               | terminal width           |    |      |
|    | AAG012-001                                                                                                                                                                                               | terminal thickness       |    |      |
| 10 | AAG014-001                                                                                                                                                                                               | package diameter         |    |      |
|    | AAG017-001                                                                                                                                                                                               | terminal spacing         |    |      |
|    | AAG092-001                                                                                                                                                                                               | package height zone      |    |      |
|    | AAG094-001                                                                                                                                                                                               | terminal thread diameter |    |      |
|    | AAG097-001                                                                                                                                                                                               | terminal thread          |    |      |
| 12 | IEC*****                                                                                                                                                                                                 |                          |    |      |

Figure 1b

- 1 Code
- 2 Version number
- 3 Revision number
- 4 Coded name
- 5 Preferred name
- 6 Definition
- 7 Note
- 8 Classifying data element type
- 9 Subclasses, identifier + preferred name
- 10 Applicable data element types, identifier + preferred name
- 11 Drawing reference, identifier
- 12 Source document of package class definition

Figure 1 – Component package class specification attributes

For the classification of the shapes of package outlines, the following three characteristics of the package according to the codes defined in IEC 60191-4 are used:

- outline style ;
- terminal position;
- terminal form.

Following these characteristics, four or five levels of classification are then defined. The codes used are given as informative annexes to this standard as follows :

- Clause G.1: level 1 : identified by the outline style codes from Table G.1;
- Clause G.2: level 2 : identified by the terminal position codes from Table G.2;
- Clause G.3: level 3 : identified by the terminal form codes from Table G.3;
- Clause G.4 level 4 : identified by the terminal variant codes from Table G.4; and
- Clause G.5: level 5 : (optional) identified by the body variant codes from Table G.5.

### 4.3 Data element types

Various attributes of the data element types and the layout as used in this standard are explained with the aid of Figure 2. For a detailed description of the various attributes of the data element type definitions, see IEC 61360-1.

The data element type definitions are given in Annex C.

14 — **AAG031-001** **01** **NR3..3.3ES2** **T03**  
 Level miNoMax real measure  
 m

4 — **terminal length** **L\_1**  
 5 — **lead length** **L<sub>1</sub>**

8 — The length (in m) as specified by level (miNoMax) of terminal available for mounting measured from the seating plane.

9 — **NOTE**  
 L1 refers to that part of the terminal over which the diameter Øb1 is closely controlled.

13 — BS3934 issue 1 : 1975

DAE009-001 Lead lengths and diameters

**Figure 2a**

14 — **AAF307-005** **01** **NR3 S..3.3ES2 E25**  
 Level miTypMax real measure  
 K\*\*-1

4 — **Temp factor of permeability** **\$a\_F**  
 5 — **Temp factor of reluctivity** **α<sub>F</sub>**

8 — Value as specified by level (miTypMax) of the negative of the change in the permeability due to a change in temperature, divided by that change in temperature (in K\*\*-1) of a soft magnetic material at specified frequency.

17 — AAE029-005=frequency

$$18 \quad \alpha_F = - \frac{\frac{1}{\mu_\theta} - \frac{1}{\mu_{ref}}}{\theta - \theta_{ref}} = - \frac{\mu_\theta - \mu_{ref}}{\mu_\theta \mu_{ref} (\theta - \theta_{ref})}$$

where  $\mu_\theta$  and  $\mu_{ref}$  are the permeabilities at temperatures  $\theta$  and  $\theta_{ref}$  respectively

13 — IEC 60050(221) (1990)

**Figure 2b**

- |   |                         |    |                                                 |
|---|-------------------------|----|-------------------------------------------------|
| 1 | Code                    | 10 | Value format                                    |
| 2 | Version number          | 11 | Unit of measure                                 |
| 3 | Revision number         | 12 | Data element type class                         |
| 4 | Preferred name          | 13 | Source document of data element type definition |
| 5 | Synonymous name         | 14 | Data type                                       |
| 6 | Short name              | 15 | Data value                                      |
| 7 | Preferred letter symbol | 16 | Level                                           |
| 8 | Definition              | 17 | Condition                                       |
| 9 | Note                    | 18 | Formula                                         |

**Figure 2 – Data element type specification attributes**



#### 4.4 Drawings

A drawing illustrates the meaning of a class containing a group of data element types describing the geometrical characteristics of a component.

The various attributes of the drawings and the layout as used in this standard are explained with the aid of Figure 3. For a detailed description of the various attributes of the data element type definitions, see IEC 61360-1.

The drawing definitions are given in Clause D.1 while the drawing of the packages themselves are given in Clause D.2.

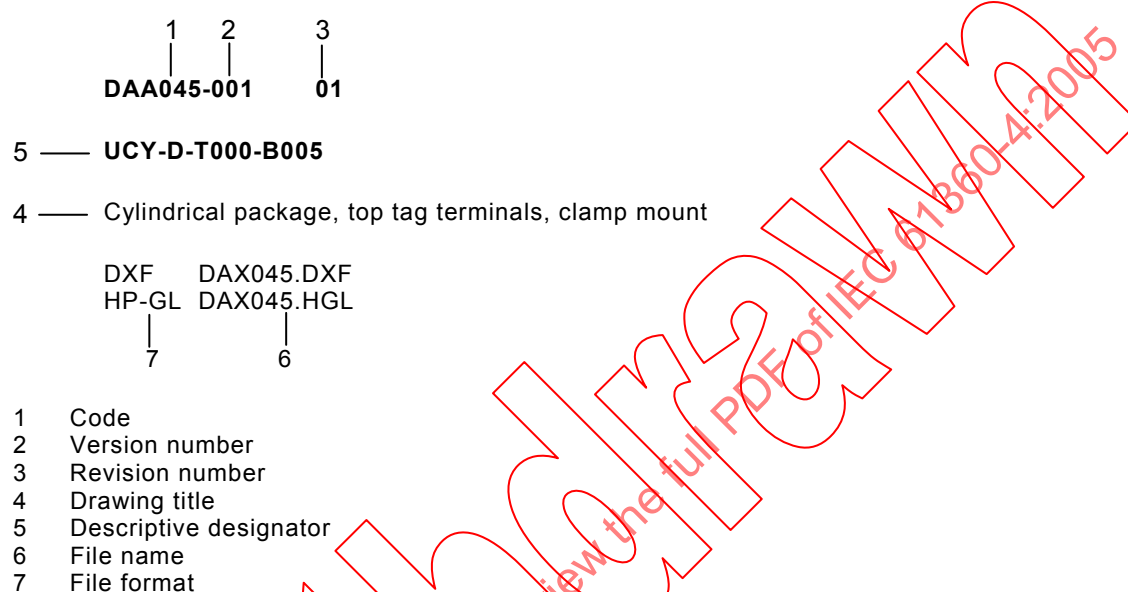


Figure 3 – Drawing specification attributes

## 4.5 Figures

A figure is an illustration that clarifies the meaning of the definition of a data element type.

The various attributes of the figure and the layout as used in this standard are explained with the aid of Figure 4. For a detailed description of the various attributes of the data element type definitions, see IEC 61360-1.

The figure definitions are given in Clause E.1 while the figures themselves are given in Clause E.2.

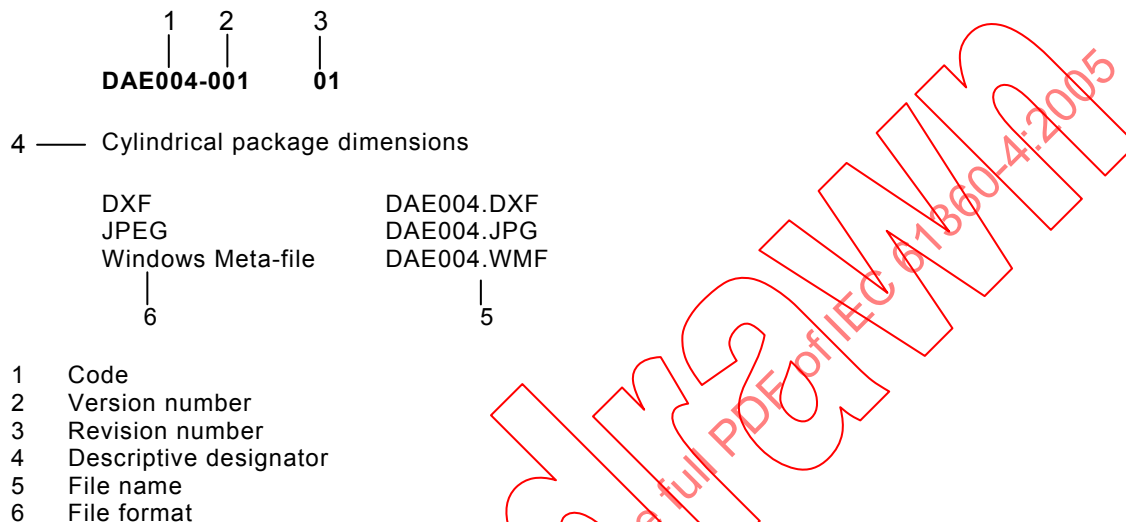


**Figure 4 – Figure specification attributes**

## 4.6 Index on keywords

To facilitate an easy way of searching, in Annex F an index on keywords from the preferred name of data element types and condition data element types is given. Here, the keywords are presented in tabular form with the keyword in the left column, the identifying code of the class of the data element type in which the keyword appears in the column on the right and the corresponding preferred name in the middle.

## Annex A (normative)

### Classification scheme

IECREF = IEC reference collection

CO = components

EE = electric-electronic

AMP = amplifier

LF = low frequency

PWA = power amplifier

VTA = voltage amplifier

DFA = differential amplifier

ACA = ac-coupled amplifier

OPA = operational amplifier (dc coupled)

SSA = single sided amplifier

RF = radio frequency

WB = wide band

ANT = antenna

CAP = capacitive (whip)

IND = inductive (ferroceptor)

RES = resistive (tuned dipole)

BAT = battery

PRI = primary battery (single charge)

SEC = secondary battery (rechargeable)

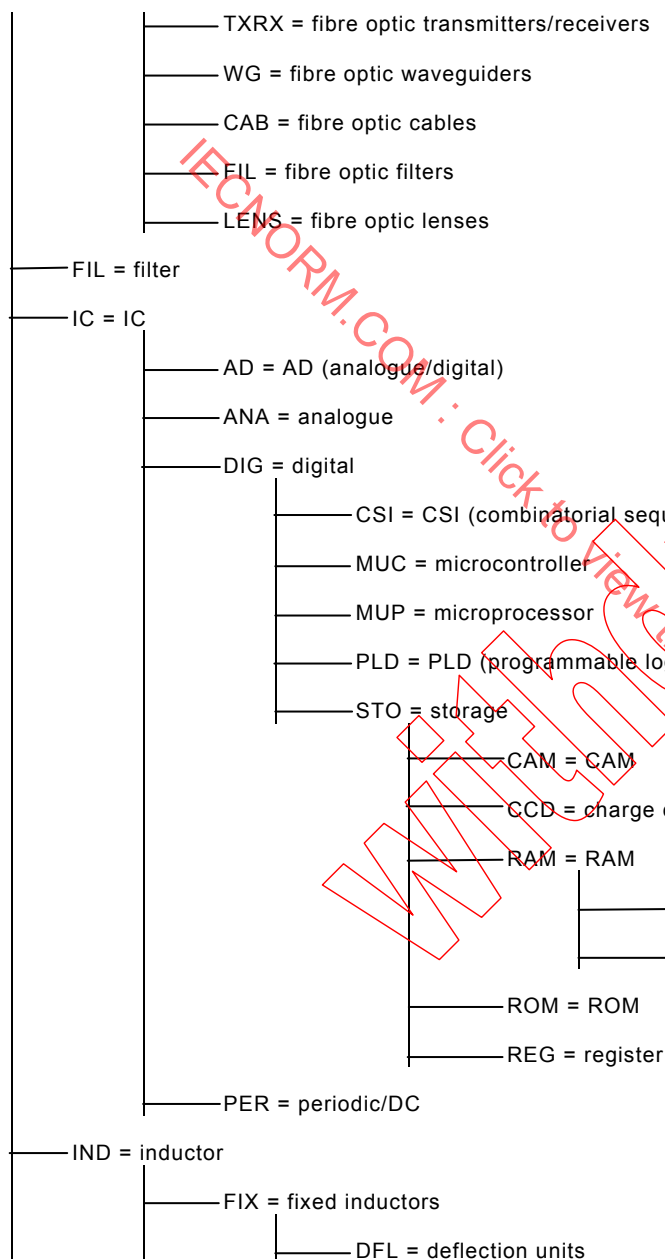
CAP = capacitor

FIX = fixed

| Class. DET  | Class      | Drawing |
|-------------|------------|---------|
|             | AAA000-001 |         |
| AAE000-001  | AAA001-001 |         |
| AAE001-005  | AAA002-003 |         |
| AAE002-006  | AAA003-001 |         |
| AAF146-005  | AAA004-001 |         |
| AAF169-005  | AAA005-001 |         |
| AAF169-005  | AAA006-001 |         |
| AAAF191-005 | AAA007-001 |         |
| AAF192-005  | AAA009-001 |         |
| AAF192-005  | AAA008-001 |         |
| AAF191-005  | AAA010-001 |         |
| AAF146-005  | AAA011-001 |         |
| AAF146-005  | AAA012-001 |         |
| AAE002-006  | AAA013-002 |         |
| AAE511-007  | AAA014-002 |         |
| AAE511-007  | AAA015-002 |         |
| AAE511-007  | AAA016-002 |         |
| AAAE002-006 | AAA017-001 |         |
| AAE510-005  | AAA018-001 |         |
| AAE510-005  | AAA019-001 |         |
| AAE002-006  | AAA020-002 |         |
| AAE003-006  | AAA021-003 |         |

|                                         | Class. DET | Class      | Drawing |
|-----------------------------------------|------------|------------|---------|
| AIR = air capacitor                     | AAE004-007 | AAA022-001 |         |
| CER = ceramic capacitor                 | AAE004-007 | AAA023-001 |         |
| CL1 = class1 ceramic capacitor          | AAE038-005 | AAA024-001 |         |
| CL2 = class 2 ceramic capacitor         | AAE038-004 | AAA025-001 |         |
| ELC = electrolytic capacitor            | AAE004-007 | AAA026-002 |         |
| STAN = solid tantalum electrolytics     | AAJ001-001 | AAA501-001 |         |
| NTAN = non-solid tatalum electrolytics  | AAJ001-001 | AAA502-001 |         |
| SAL = solid aluminium electrolytics     | AAJ001-001 | AAA503-001 |         |
| NAL = non-solid aluminium electrolytics | AAJ001-001 | AAA504-001 |         |
| FLM = film capacitor                    | AAE004-007 | AAA027-001 |         |
| GLS = glass capacitor                   | AAE004-007 | AAA028-001 |         |
| MIC = mica capacitor                    | AAE004-007 | AAA029-002 |         |
| MLAY = multilayer capacitor             | AAE004-007 | AAA505-001 |         |
| PAP = paper capacitor                   | AAE004-007 | AAA030-001 |         |
| VAR = variable                          | AAE003-006 | AAA031-002 |         |
| CND = conductor                         | AAE002-006 | AAA032-001 |         |
| BAR = bare conductor                    | AAF239-005 | AAA033-001 |         |
| INS = insulated conductor               | AAF239-005 | AAA034-001 |         |
| CBL = cable (multi-conducted)           | AAF249-005 | AAA035-005 |         |
| POW = power                             | AAE152-005 | AAA036-001 |         |
| SIG = signal                            | AAE152-005 | AAA037-001 |         |
| LF = low frequency                      | AAF146-005 | AAA038-001 |         |
| RF = radio frequency                    | AAF146-005 | AAA39-001  |         |
| IWR = insulated wire (single conductor) | AAF249-005 | AAA040-001 |         |
| DEL = delay line                        | AAE002-006 | AAA041-001 |         |
| DID = diode device                      | AAE002-006 | AAA042-001 |         |

|                                      | Class. DET | Class      | Drawing |
|--------------------------------------|------------|------------|---------|
| BRI = bridge rectifier               | AAF305-005 | AAA043-001 |         |
| DIO = diode                          | AAF305-005 | AAA044-001 |         |
| BOD = breakover diode                | AAE273-007 | AAA045-001 |         |
| REC = rectifier diode                | AAE273-007 | AAA046-001 |         |
| SIG = signal diode                   | AAE273-007 | AAA047-002 |         |
| STB = stabilizer diode               | AAE273-007 | AAA048-001 |         |
| CUR = current regulator diode        | AAE312-005 | AAA049-001 |         |
| REF = voltage reference diode        | AAE312-005 | AAA050-001 |         |
| REG = voltage regulator diode        | AAE312-005 | AAA051-001 |         |
| STA = stabistor                      | AAE312-005 | AAA052-001 |         |
| SUP = transient suppressor diode     | AAE312-005 | AAA053-001 |         |
| VAR = variable diode                 | AAE273-007 | AAA054-002 |         |
| VMP = voltage multiplier             | AAF305-005 | AAA055-001 |         |
| FIBOPTIC = fibre optics              | AAE002-006 | AAA578-001 |         |
| LINKS = fibre optic links            | AAJ048-001 | AAA579-001 |         |
| CONN = fibre optic connectors)       | AAJ048-001 | AAA580-001 |         |
| SWI = fibre optic switches           | AAJ048-001 | AAA581-001 |         |
| BRA = fibre optic branches           | AAJ048-001 | AAA582-001 |         |
| COUP = fibre optic couplers/splicers | AAJ048-001 | AAA583-001 |         |
| ATT = fibre optic attenuators        | AAJ048-001 | AAA584-001 |         |
| DET = fibre optic detectors          | AAJ048-001 | AAA585-001 |         |
| ISOL = fibre optic isolators         | AAJ048-001 | AAA586-001 |         |
| NETW = fibre optic networks          | AAJ048-001 | AAA587-001 |         |
| SOURC = fibre optic light sources    | AAJ048-001 | AAA588-001 |         |
| MOD = fibre optic modulators         | AAJ048-001 | AAA589-001 |         |



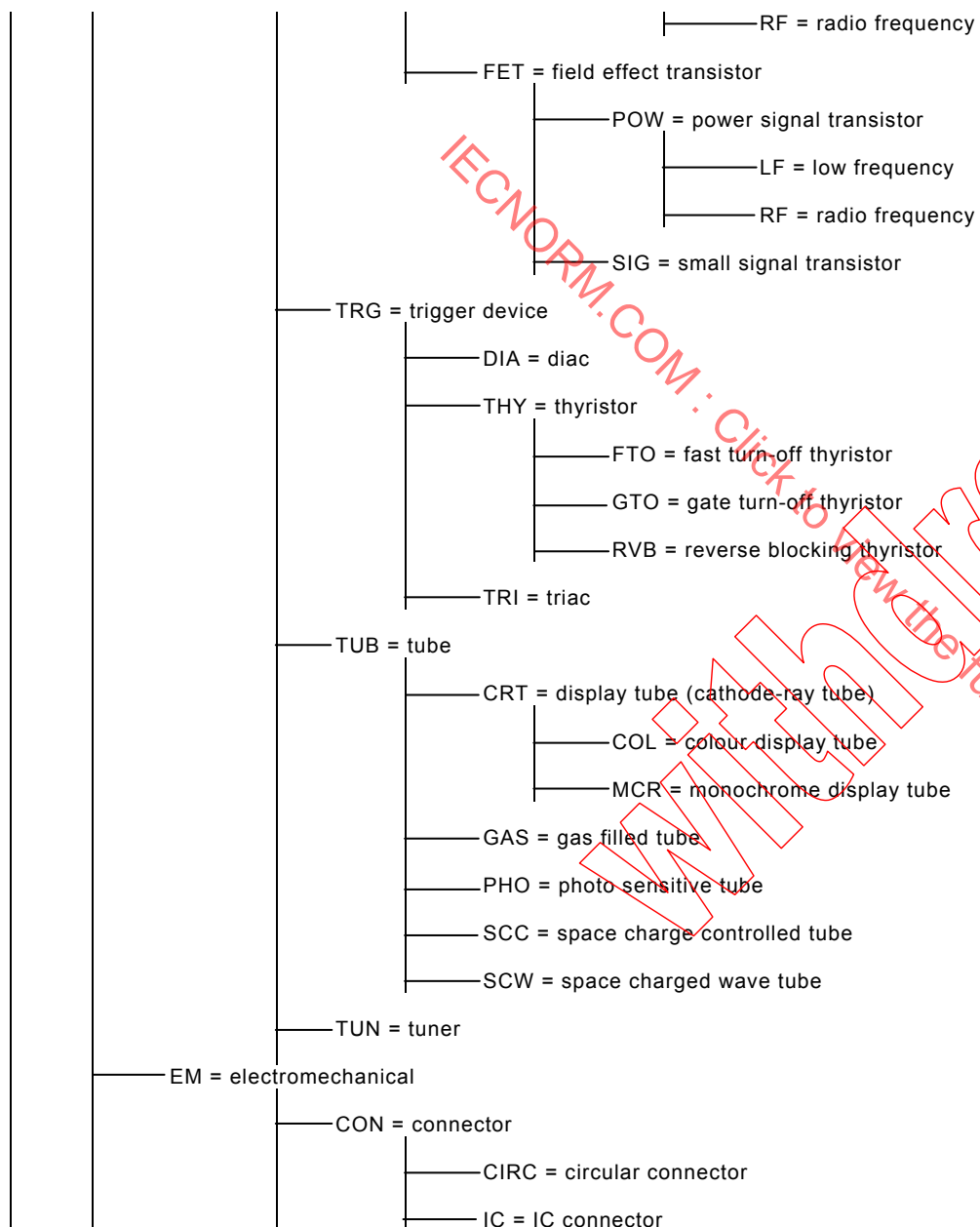
| Class. DET | Class      | Drawing |
|------------|------------|---------|
| AAJ048-001 | AAA590-001 |         |
| AAJ048-001 | AAA591-001 |         |
| AAJ048-001 | AAA592-001 |         |
| AAJ048-001 | AAA593-001 |         |
| AAJ048-001 | AAA594-001 |         |
| AAE002-006 | AAA056-002 |         |
| AAE002-006 | AAA057-001 |         |
| AAE077-005 | AAA072-001 |         |
| AAE077-005 | AAA058-001 |         |
| AAE077-005 | AAA059-001 |         |
| AAE085-005 | AAA060-001 |         |
| AAE085-005 | AAA061-001 |         |
| AAE085-005 | AAA062-001 |         |
| AAE085-005 | AAA063-001 |         |
| AAE085-005 | AAA064-002 |         |
| AAE722-007 | AAA065-001 |         |
| AAE722-007 | AAA066-001 |         |
| AAE722-007 | AAA067-001 |         |
| AAF233-005 | AAA068-001 |         |
| AAF233-005 | AAA069-001 |         |
| AAE722-007 | AAA070-001 |         |
| AAE722-007 | AAA071-002 |         |
| AAE077-005 | AAA073-001 |         |
| AAE002-006 | AAA074-002 |         |
| AAE003-006 | AAA601-001 |         |
| AAF390-002 | AAA225-001 |         |

|                                  | Class. DET | Class      | Drawing |
|----------------------------------|------------|------------|---------|
| CHOKE = choke                    | AAF390-002 | AAA226-001 |         |
| COIL = coil                      | AAF390-002 | AAA227-001 |         |
| LINUNIT = linearity control unit | AAF390-002 | AAA228-001 |         |
| ANT = antenna inductors          | AAF390-002 | AAA603-001 |         |
| SOL = solenoids                  | AAF390-002 | AAA604-001 |         |
| VAR = variable inductors         | AAE003-006 | AAA602-001 |         |
| LAM = lamp                       | AAE002-006 | AAA075-001 |         |
| LCD = liquid crystal display     | AAE002-006 | AAA076-001 |         |
| MIC = microwave component        | AAE002-006 | AAA229-001 |         |
| OPT = optoelectronic device      | AAE002-006 | AAA077-002 |         |
| IMAGE = image pickup devices     | AAE545-006 | AAA597-001 |         |
| PHC = photocoupler               | AAE545-006 | AAA078-001 |         |
| PHE = photoemitter               | AAE545-006 | AAA079-001 |         |
| IRD = infrared emitting diode    | AAE555-005 | AAA081-001 |         |
| LAS = laser                      | AAE555-005 | AAA082-001 |         |
| LED = LED                        | AAE555-005 | AAA080-001 |         |
| PHS = photosensor                | AAE545-006 | AAA083-001 |         |
| IR = infrared sensor             | AAE566-005 | AAA084-001 |         |
| U = ultraviolet radiation        | AAE566-005 | AAA085-001 |         |
| VIS = visible radiation          | AAE566-005 | AAA086-001 |         |
| OSC = oscillator                 | AAE002-006 | AAA087-001 |         |
| PE = piezoelectric device        | AAE002-006 | AAA088-001 |         |
| PWC = printed wiring circuit     | AAE002-006 | AAA232-001 |         |
| RES = resistor                   | AAE002-006 | AAA089-002 |         |
| FIX = fixed                      | AAE003-006 | AAA090-002 |         |

|                                                          | Class. DET | Class      | Drawing |
|----------------------------------------------------------|------------|------------|---------|
| LIN = linear                                             | AAE114-007 | AAA091-002 |         |
| MUL = linear resistor networks                           | AAF101-006 | AAA093-002 |         |
| SIN = single linear resistors                            | AAF101-006 | AAA092-002 |         |
| CHIP = fixed chip resistor                               | AAJ003-001 | AAA512-001 |         |
| FUS = fixed fusing resistor                              | AAJ003-001 | AAA514-001 |         |
| LP = fixed low power resistor                            | AAJ003-001 | AAA511-001 |         |
| PREC = fixed precision resistor                          | AAJ003-001 | AAA509-001 |         |
| PWR = fixed power resistor                               | AAJ003-001 | AAA510-001 |         |
| THERM = linear positive temperature coefficient resistor | AAJ003-001 | AAA513-001 |         |
| NLN = non-linear                                         | AAE114-007 | AAA094-001 |         |
| LDR = light dependent resistor                           | AAE122-005 | AAA095-001 |         |
| TDR = thermistor (temperature)                           | AAE122-005 | AAA096-002 |         |
| NTC = NTC                                                | AAE126-005 | AAA097-001 |         |
| PTC = PTC                                                | AAE126-005 | AAA098-002 |         |
| VDR = varistor (voltage)                                 | AAE122-005 | AAA099-001 |         |
| VAR = variable                                           | AAE003-006 | AAA100-003 |         |
| POT = potentiometer (3 or more terminals)                | AAE139-005 | AAA102-002 |         |
| PRESET = preset potentiometer                            | AAJ006-002 | AAA516-002 |         |
| PRECROT = rotary precision potentiometer                 | AAJ006-002 | AAA607-001 |         |
| SLIDE = slide potentiometer                              | AAJ006-002 | AAA517-001 |         |
| LPROT = low-power rotary potentiometer                   | AAJ006-002 | AAA609-001 |         |
| PWRROT = power rotary potentiometer                      | AAJ006-002 | AAA608-001 |         |
| TT = two terminal variable resistor                      | AAE139-005 | AAA101-001 |         |
| RESON = resonators                                       | AAE002-006 | AAA596-001 |         |



|                                 | Class. DET | Class      | Drawing |
|---------------------------------|------------|------------|---------|
| — SEN = sensor                  | AAE002-006 | AAA103-001 |         |
| — HUM = relative humidity       | AAE892-005 | AAA104-001 |         |
| — LGT = light                   | AAE892-005 | AAA105-001 |         |
| — MGN = magnetic field strength | AAE892-005 | AAA106-001 |         |
| — NCL = nuclear                 | AAE892-005 | AAA107-001 |         |
| — PRS = pressure                | AAE892-005 | AAA108-001 |         |
| — PRX = proximity               | AAE892-005 | AAA109-001 |         |
| — TMP = temperature             | AAE892-005 | AAA110-001 |         |
| — SPARK = spark gaps            | AAE002-006 | AAA595-001 |         |
| — AIR = air spark gaps          | AAJ081-001 | AAA605-001 |         |
| — GAS = gas-filled spark gaps   | AAJ081-001 | AAA606-001 |         |
| — TFM = transformer             | AAE002-006 | AAA111-001 |         |
| — POW = power                   | AAE152-001 | AAA112-001 |         |
| — FIX = fixed                   | AAE003-006 | AAA113-001 |         |
| — VAR = variable                | AAA114-001 | AAA114-001 |         |
| — SIG = signal                  | AAE152-001 | AAA115-002 |         |
| — FIX = fixed                   | AAE003-006 | AAA116-001 |         |
| — VAR = variable                | AAE003-006 | AAA117-001 |         |
| — TRA = transistor              | AAE002-006 | AAA118-001 |         |
| — BIP = bipolar transistor      | AAE401-001 | AAA119-002 |         |
| — POW = power signal transistor | AAE971-007 | AAA120-002 |         |
| — LF = low frequency            | AAF146-005 | AAA121-001 |         |
| — RF = radio frequency          | AAF146-005 | AAA122-001 |         |
| — SIG = small signal transistor | AAE971-007 | AAA123-002 |         |
| — LF = low frequency            | AAF146-005 | AAA124-001 |         |



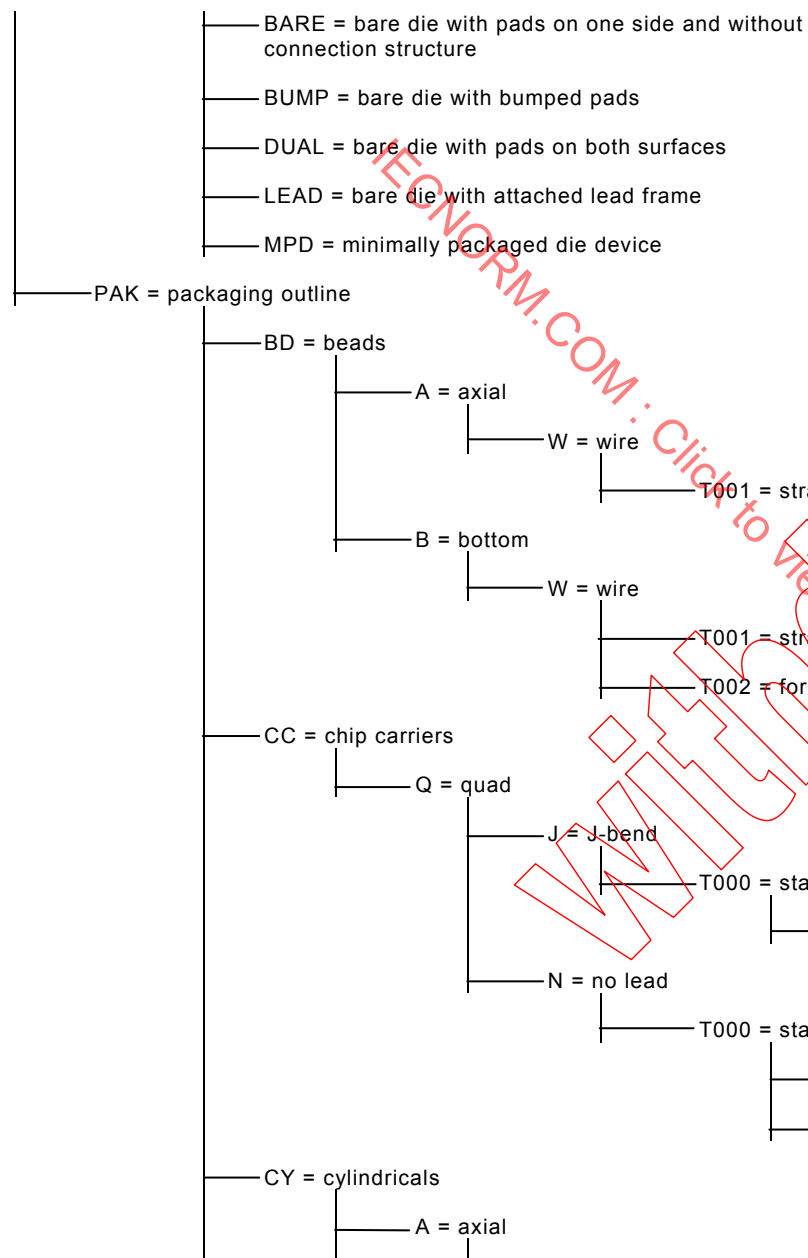
| Class. DET | Class      | Drawing |
|------------|------------|---------|
| AAF146-005 | AAA125-001 |         |
| AAE401-001 | AAA126-002 |         |
| AAE971-007 | AAA127-002 |         |
| AAF146-005 | AAA128-001 |         |
| AAF146-005 | AAA129-001 |         |
| AAE971-007 | AAA130-002 |         |
| AAE002-006 | AAA131-001 |         |
| AAE724-005 | AAA132-001 |         |
| AAE724-005 | AAA133-001 |         |
| AAE743-005 | AAA134-001 |         |
| AAE743-005 | AAA135-001 |         |
| AAE743-005 | AAA136-001 |         |
| AAE724-005 | AAA137-001 |         |
| AAE002-006 | AAA138-001 |         |
| AAE696-005 | AAA139-001 |         |
| AAF202-005 | AAA140-001 |         |
| AAF202-005 | AAA141-002 |         |
| AAE696-005 | AAA142-001 |         |
| AAE696-005 | AAA142-001 |         |
| AAE696-005 | AAA142-001 |         |
| AAE696-005 | AAA142-001 |         |
| AAE002-006 | AAA146-001 |         |
| AAE001-005 | AAA147-003 |         |
| AAE060-006 | AAA148-002 |         |
| AAE349-006 | AAA518-001 |         |
| AAE349-006 | AAA522-001 |         |

|                                     | Class. DET | Class      | Drawing |
|-------------------------------------|------------|------------|---------|
| JACK = plug and jack                | AAE349-006 | AAA526-001 |         |
| ASSY = plug assemblies              | AAE349-006 | AAA549-001 |         |
| CMPLX = complex jack boards         | AAJ024-001 | AAA550-001 |         |
| CONC = concentric plug and jack     | AAJ024-001 | AAA536-001 |         |
| JACK = concentric jack              | AAJ025-001 | AAA538-001 |         |
| MULT = multiple concentric plug     | AAJ025-001 | AAA539-001 |         |
| PLUG = concentric plug              | AAJ025-001 | AAA537-001 |         |
| PIN = pin plug and jack             | AAJ024-001 | AAA540-001 |         |
| JACK = pin jack                     | AAJ026-001 | AAA542-001 |         |
| MULT = pin multiple jack            | AAJ026-001 | AAA543-001 |         |
| PIN = pin plug                      | AAJ026-001 | AAA541-001 |         |
| SHLD = shielded pin jack            | AAJ026-001 | AAA544-001 |         |
| PWR = plug and jack for d.c. power  | AAJ024-001 | AAA545-001 |         |
| CAR = car plug                      | AAJ027-001 | AAA548-001 |         |
| JACK = dc power jack                | AAJ027-001 | AAA547-001 |         |
| PLUG dc power plug                  | AAJ027-001 | AAA546-001 |         |
| MOD = modular connector             | AAE349-006 | AAA523-001 |         |
| PCB = printed circuit board         | AAE349-006 | AAA520-001 |         |
| RECT = rectangular connector        | AAE349-006 | AAA519-001 |         |
| RF = RF connector                   | AAE349-006 | AAA521-001 |         |
| SOCK = sockets                      | AAE349-006 | AAA527-001 |         |
| ANT = socket for antenna feeder     | AAJ028-001 | AAA565-001 |         |
| FUSE = fuse holder and socket       | AAJ028-001 | AAA564-001 |         |
| IC = socket for integrated circuits | AAJ028-001 | AAA555-001 |         |
| LIGHT = lighting socket             | AAJ028-001 | AAA563-001 |         |

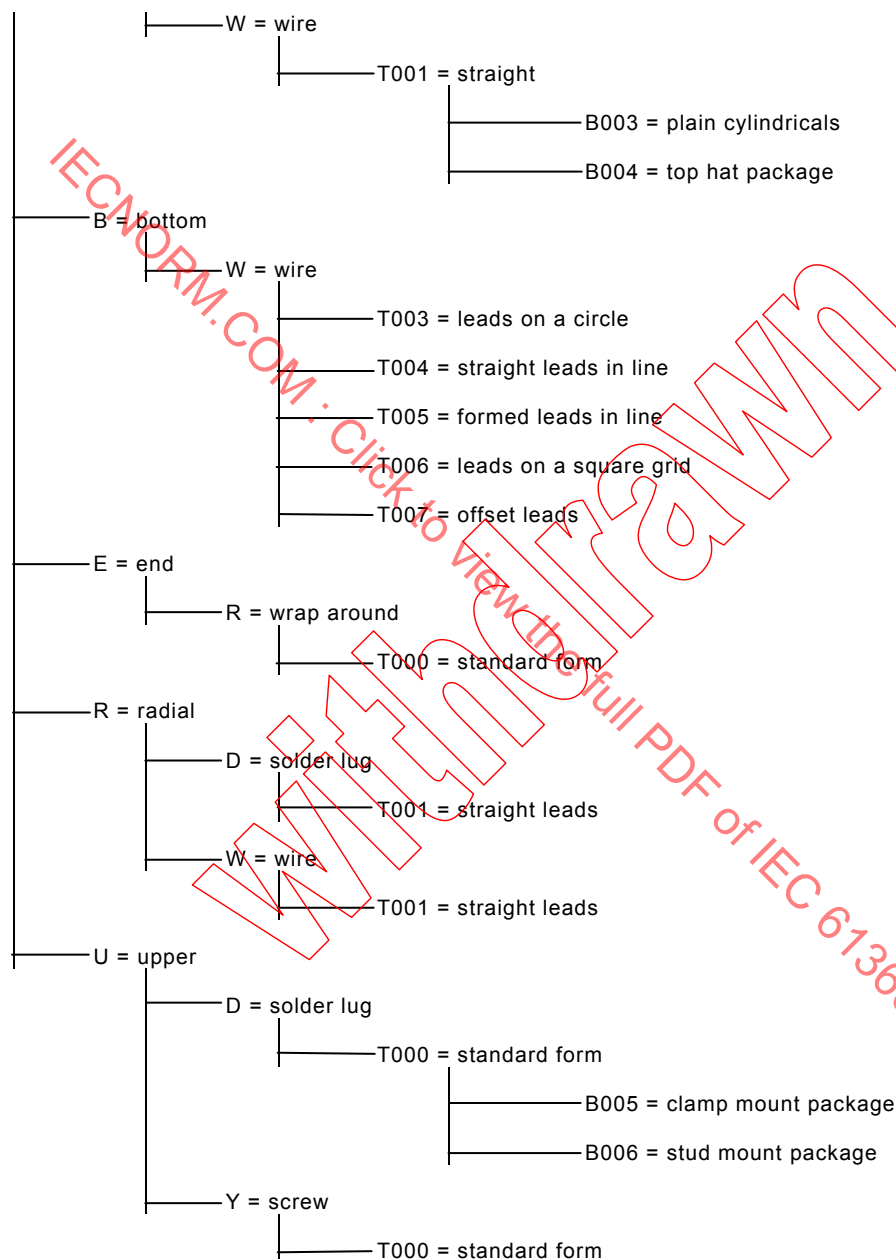
|                          |                                    |                                  |
|--------------------------|------------------------------------|----------------------------------|
|                          |                                    | PCB = socket for PCB             |
|                          |                                    | PWR = power socket               |
|                          |                                    | SIG = signal socket              |
|                          |                                    | TRA = transistor socket          |
|                          |                                    | TUBE = socket for tube           |
|                          |                                    | XTAL = socket for quartz cristal |
|                          | TERM = terminals                   |                                  |
|                          |                                    | ARRY = terminal array            |
|                          |                                    | BRD = terminal board             |
|                          |                                    | ROD = terminal rod               |
|                          |                                    | SM = small terminals             |
| CONPART = connector part |                                    |                                  |
|                          | CONTACT = connector contact        |                                  |
|                          | ACCY = connector accessoires       |                                  |
|                          | TOOL = connector tool              |                                  |
|                          | SHELL = connector shell            |                                  |
|                          | INSERT = connector insert          |                                  |
| FUS = fuse               |                                    |                                  |
|                          | CUR current activated fuse         |                                  |
|                          | TERM = thermally activated fuse    |                                  |
| LSP = loudspeaker        |                                    |                                  |
|                          | ELM = electromagnetic loudspeaker  |                                  |
|                          | ELS = electrostatic loudspeaker    |                                  |
|                          | ION = ionic loudspeaker            |                                  |
|                          | MGD = magnetodynamic loudspeaker   |                                  |
|                          | MGS = magnetostrictive loudspeaker |                                  |

| Class. DET | Class      | Drawing |
|------------|------------|---------|
| AAJ028-001 | AAA556-001 |         |
| AAJ028-001 | AAA557-001 |         |
| AAJ028-001 | AAA561-001 |         |
| AAJ028-001 | AAA554-001 |         |
| AAJ028-001 | AAA551-001 |         |
| AAJ028-001 | AAA562-001 |         |
| AAE349-006 | AAA528-001 |         |
| AAJ031-001 | AAA569-001 |         |
| AAJ031-001 | AAA572-001 |         |
| AAJ031-001 | AAA573-001 |         |
| AAJ031-001 | AAA566-001 |         |
| AAE060-006 | AAA610-001 |         |
| AAF464-001 | AAA524001  |         |
| AAF464-001 | AAA525-001 |         |
| AAF464-001 | AAA611-001 |         |
| AAF464-001 | AAA612-001 |         |
| AAF464-001 | AAA613-001 |         |
| AAE060-006 | AAA149-002 |         |
| AAJ012-002 | AAA575-001 |         |
| AAJ012-002 | AAJ576-001 |         |
| AAE060-006 | AAA150-001 |         |
| AAE005-006 | AAA154-001 |         |
| AAE005-006 | AAA157-001 |         |
| AAE005-006 | AAA153-001 |         |
| AAE005-006 | AAA152-001 |         |
| AAE005-006 | AAA158-001 |         |

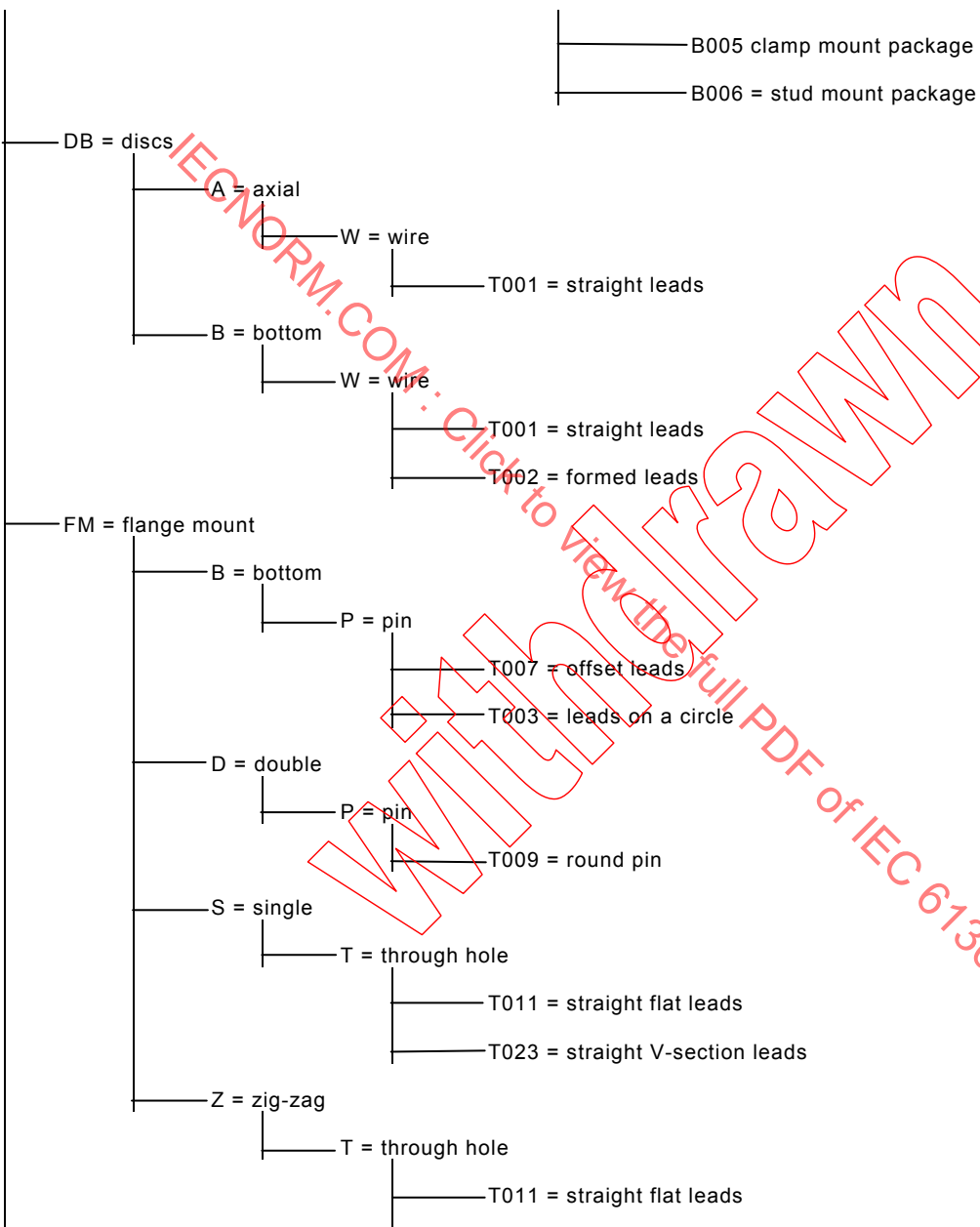
|                                    | Class. DET | Class      | Drawing |
|------------------------------------|------------|------------|---------|
| MVC = moving conductor loudspeaker | AAE005-006 | AAA151-001 |         |
| PXE = piezoelectric loudspeaker    | AAE005-006 | AAA156-001 |         |
| PNM = pneumatic loudspeaker        | AAE005-006 | AAA155-001 |         |
| MIC = microphone                   | AAE060-006 | AAA159-001 |         |
| MOT = motor                        | AAE060-006 | AAA160-005 |         |
| LIN = linear                       | AAE179-005 | AAA161-001 |         |
| AC = ac                            | AAE178-005 | AAA162-001 |         |
| DC = dc                            | AAE178-005 | AAA163-001 |         |
| STP = stepping motor (pulse)       | AAE178-005 | AAA164-001 |         |
| UNI = universal motor (ac or dc)   | AAE178-005 | AAA165-001 |         |
| ROT = rotational                   | AAE179-001 | AAA166-001 |         |
| AC = ac                            | AAE178-005 | AAA167-001 |         |
| DC = dc                            | AAE178-005 | AAA168-001 |         |
| STP = stepping motor (pulse)       | AAE178-005 | AAA169-001 |         |
| UNI = universal motor (ac or dc)   | AAE178-005 | AAA170-001 |         |
| REL = relay                        | AAE060-006 | AAA171-001 |         |
| SWI = switch                       | AAE60-005  | AAA172-001 |         |
| MEC = mechanical switch            | AAE926-005 | AAA174-002 |         |
| REE = reed switch                  | AAE926-005 | AAA173-001 |         |
| THE = thermostatic switch          | AAE926-005 | AAA175-001 |         |
| MP = magnetic part                 | AAE001-005 | AAA215-001 |         |
| HRD = hard magnetic                | AAE759-005 | AAA216-001 |         |
| SFT = soft magnetic                | AAE759-005 | AAA217-001 |         |
| GEO = geometries                   | AAE000-001 | AAA301-001 |         |
| DIE = die device                   | AAG000-001 | AAA302-001 |         |



| Class. DET | Class      | Drawing    |
|------------|------------|------------|
| AAD004-001 | AAA295-001 |            |
| AAD004-001 | AAA296-001 |            |
| AAD004-001 | AAA299-001 |            |
| AAD004-001 | AAA297-001 |            |
| AAD004-001 | AAA298-001 |            |
| AAG000-001 | AAA303-001 |            |
| AAG057-001 | AAA304-001 |            |
| AAG056-001 | AAA322-001 |            |
| AAG058-001 | AAA353-001 |            |
| AAG054-001 | AAA391-001 | DAA001-001 |
| AAG056-001 | AAA323-001 |            |
| AAG058-001 | AAA354-001 |            |
| AA9054-001 | AAA392-001 | DAA002-001 |
| AAG054-001 | AAA393-001 | DAA003-001 |
| AAG057-001 | AAA305-001 |            |
| AAG056-001 | AAA324-001 |            |
| AAG058-001 | AAA355-001 |            |
| AAG054-001 | AAA394-001 |            |
| AAG055-001 | AAA445-001 | DAA040-001 |
| AAG058-001 | AAA356-001 |            |
| AAG054-001 | AAA395-001 |            |
| AAG055-001 | AAA446-001 | DAA041-001 |
| AAG055-001 | AAA447-001 | DAA042-001 |
| AAG057-001 | AAA307-001 |            |
| AAG056-001 | AAA325-001 |            |



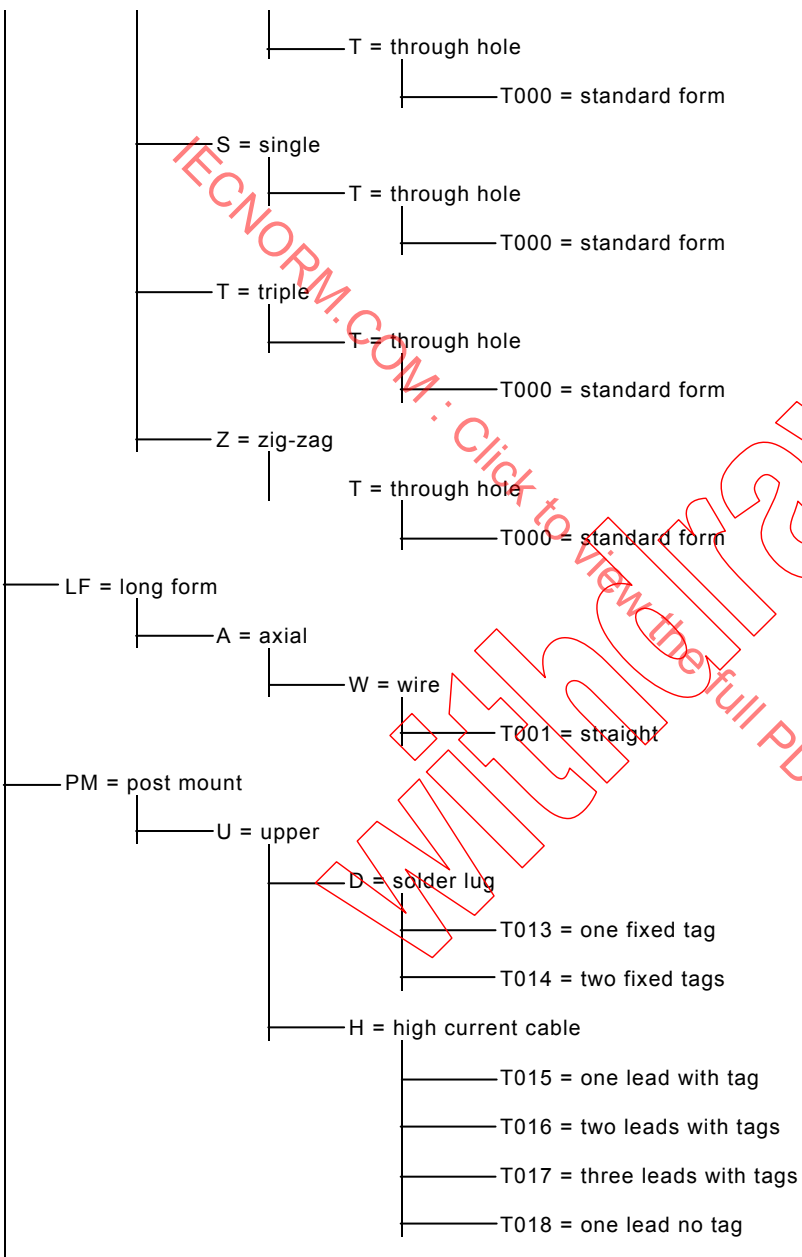
| Class. DET | Class      | Drawing    |
|------------|------------|------------|
| AAG058-001 | AAA357-001 |            |
| AAG054-001 | AAA396-001 |            |
| AAG055-001 | AAA448-001 | DAA043-001 |
| AAG055-001 | AAA449-001 | DAA044-001 |
| AAG056-001 | AAA326-001 |            |
| AAG058-001 | AAA358-001 |            |
| AAG054-001 | AAA397-001 | DAA004-001 |
| AAG054-001 | AAA398-001 | DAA005-001 |
| AAG054-001 | AAA399-001 | DAA006-001 |
| AAG054-001 | AAA400-001 | DAA007-001 |
| AAG054-001 | AAA401-001 | DAA008-001 |
| AAG056-001 | AAA327-001 |            |
| AAG058-001 | AAA359-001 |            |
| AAG054-001 | AAA402-001 | DAA009-001 |
| AAG056-001 | AAA328-001 |            |
| AAG058-001 | AAA360-001 |            |
| AAG054-001 | AAA402-001 | DAA010-001 |
| AAG058-001 | AAA361-001 |            |
| AAG054-001 | AAA404-001 | DAA011-001 |
| AAG056-001 | AAA329-001 |            |
| AAG058-001 | AAA362-001 |            |
| AAG054-001 | AAA405-001 |            |
| AAG055-001 | AAA450-001 | DAA045-001 |
| AAG055-001 | AAA451-002 | DAA046-002 |
| AAG058-001 | AAA363-001 |            |
| AAG054-001 | AAA406-001 |            |



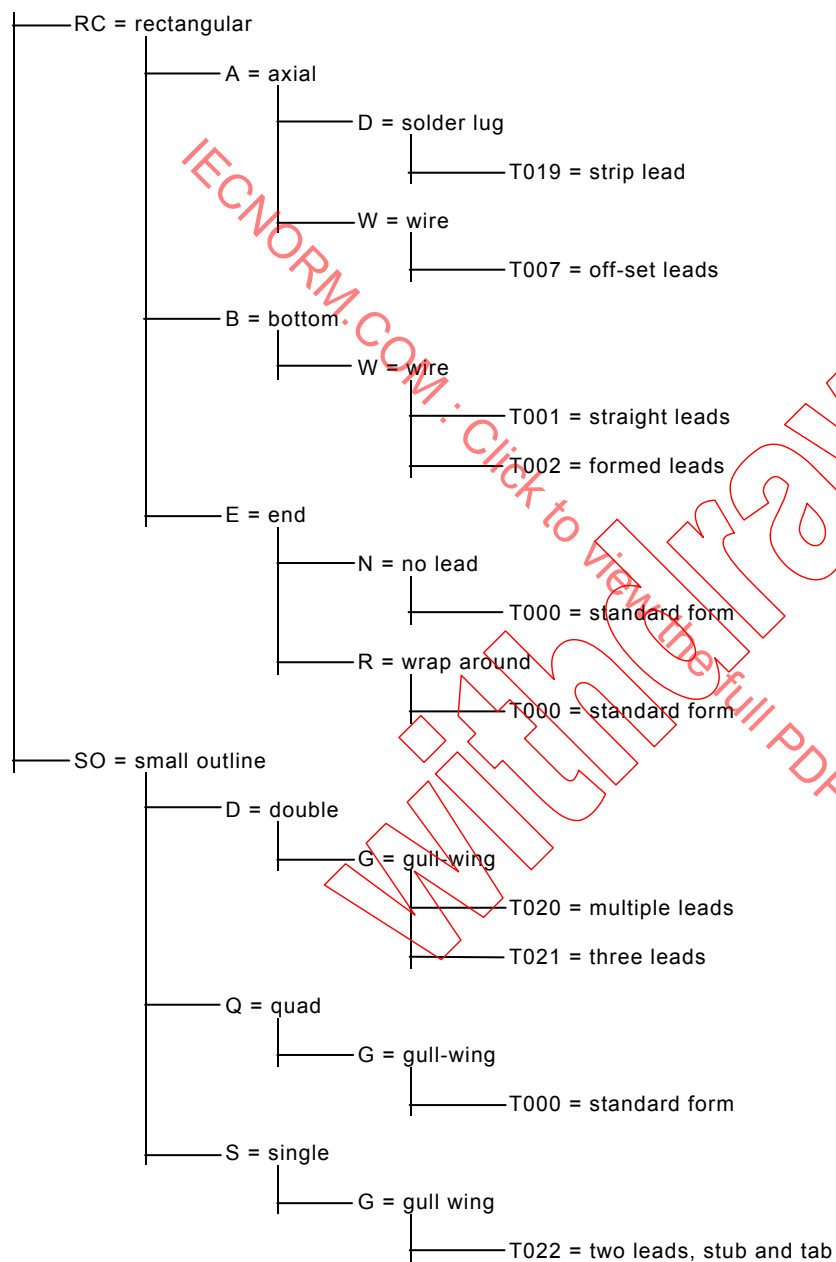
| Class. DET | Class      | Drawing    |
|------------|------------|------------|
| AAG055-001 | AAA452-001 | DAA047-001 |
| AAG055-001 | AAA453-002 | DAA048-002 |
| AAG057-001 | AAA308-001 |            |
| AAG056-001 | AAA330-001 |            |
| AAG058-001 | AAA364-001 |            |
| AAG054-001 | AAA407-001 | DAA012-001 |
| AAG056-001 | AAA331-001 |            |
| AAG058-001 | AAA365-001 |            |
| AAG054-001 | AAA408-001 | DAA013-001 |
| AAG054-001 | AAA409-001 | DAA014-001 |
| AAG057-001 | AAA309-001 |            |
| AAG056-001 | AAA332-001 |            |
| AAG058-001 | AAA366-001 |            |
| AAG054-001 | AAA410-001 | DAA015-001 |
| AAG054-001 | AAA411-001 | DAA016-001 |
| AAG056-001 | AAA333-001 |            |
| AAG058-001 | AAA367-001 |            |
| AAG054-001 | AAA412-001 | DAA017-001 |
| AAG056-001 | AAA334-001 |            |
| AAG058-001 | AAA368-001 |            |
| AAG054-001 | AAA413-001 | DAA018-001 |
| AAG054-001 | AAA414-001 | DAA019-001 |
| AAG056-001 | AAA335-001 |            |
| AAG058-001 | AAA369-001 |            |
| AAG054-001 | AAA415-001 |            |



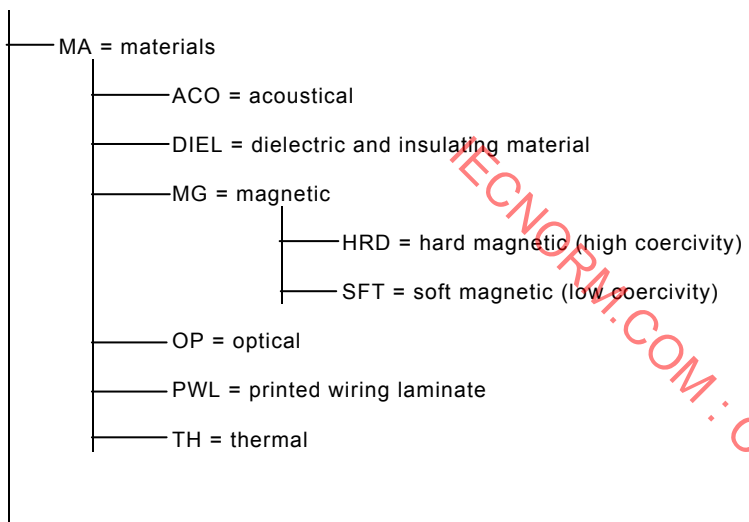
|                                 | Class. DET | Class      | Drawing    |
|---------------------------------|------------|------------|------------|
| T023 = straight V-section leads | AAG054-001 | AAA416-001 |            |
| FP = flat pack                  | AAG057-001 | AAA311-001 |            |
| D = double                      | AAG056-001 | AAA336-001 |            |
| F = flat                        | AAG058-001 | AAA370-001 |            |
| T011 = straight flat leads      | AAG054-001 | AAA417-001 | DAA020-001 |
| Q = quad                        | AAG056-001 | AAA337-001 |            |
| G = gull wing                   | AAG058-001 | AAA371-001 |            |
| T000 = standard form            | AAG054-001 | AAA418-001 |            |
| B002 = non-bumped package       | AAG055-001 | AAA454-001 | DAA049-001 |
| GA = grid arrays                | AAG057-001 | AAA312-001 |            |
| B = bottom                      | AAG056-001 | AAA338-001 |            |
| B = butt                        | AAG058-001 | AAA372-001 |            |
| T012 = solder ball              | AAG054-001 | AAA419-001 | DAA021-001 |
| P = perpendicular               | AAG056-001 | AAA339-001 |            |
| P = pin                         | AAG058-001 | AAA373-001 |            |
| T009 = round pin                | AAG054-001 | AAA420-001 |            |
| B007 = cavity up                | AAG055-001 | AAA455-001 | DAA050-001 |
| B008 = cavity down              | AAG055-001 | AAA456-001 | DAA051-001 |
| IP = in line                    | AAG057-001 | AAA313-001 |            |
| D = double                      | AAG056-001 | AAA340-001 |            |
| P = pin                         | AAG058-001 | AAA374-001 |            |
| T009 = round pin                | AAG054-001 | AAA421-001 | DAA022-001 |
| T010 = rectangular pin          | AAG054-001 | AAA422-001 | DAA023-001 |
| T = through hole                | AAG058-001 | AAA375-001 |            |
| T000 = standard form            | AAG054-001 | AAA423-001 | DAA024-001 |
| Q = quad                        | AAG056-001 | AAA341-001 |            |



| Class. DET | Class      | Drawing    |
|------------|------------|------------|
| AAG058-001 | AAA376-001 |            |
| AAG054-001 | AAA424-001 |            |
| AAG056-001 | AAA342-001 |            |
| AAG058-001 | AAA377-001 |            |
| AAG054-001 | AAA425-001 |            |
| AAG056-001 | AAA343-001 |            |
| AAG058-001 | AAA378-001 |            |
| AAG054-001 | AAA426-001 |            |
| AAG056-001 | AAA344-001 |            |
| AAG058-001 | AAA379-001 |            |
| AAG054-001 | AAA427-001 |            |
| AAG057-001 | AAA314-001 |            |
| AAG056-001 | AAA345-001 |            |
| AAG058-001 | AAA380-001 |            |
| AAG054-001 | AAA428-001 |            |
| AAG057-001 | AAA318-001 |            |
| AAG056-001 | AAA346-001 |            |
| AAG058-001 | AAA381-001 |            |
| AAG054-001 | AAA429-002 | DAA025-002 |
| AAG054-001 | AAA430-002 | DAA026-002 |
| AAG058-001 | AAA382-001 |            |
| AAG054-001 | AAA431-002 | DAA027-002 |
| AAG054-001 | AAA432-002 | DAA028-002 |
| AAG054-001 | AAA433-002 | DAA029-002 |
| AAG054-001 | AAA434-002 | DAA030-002 |



| Class. DET | Class      | Drawing    |
|------------|------------|------------|
| AAG057-001 | AAA319-001 |            |
| AAG056-001 | AAA347-001 |            |
| AAG058-001 | AAA383-001 |            |
| AAG054-001 | AAA435-001 | DAA031-001 |
| AAG058-001 | AAA384-001 |            |
| AAG054-001 | AAA436-001 | DAA032-001 |
| AAG056-001 | AAA348-001 |            |
| AAG058-001 | AAA385-001 |            |
| AAG054-001 | AAA437-001 | DAA033-001 |
| AAG054-001 | AAA438-001 | DAA034-001 |
| AAG056-001 | AAA349-001 |            |
| AAG058-001 | AAA386-001 |            |
| AAG054-001 | AAA439-001 | DAA035-001 |
| AAG058-001 | AAA387-001 |            |
| AAG054-001 | AAA440-001 | DAA036-001 |
| AAG057-001 | AAA320-001 |            |
| AAG056-001 | AAA350-001 |            |
| AAG058-001 | AAA388-001 |            |
| AAG054-001 | AAA441-001 | DAA037-001 |
| AAG054-001 | AAA442-001 | DAA038-001 |
| AAG056-001 | AAA351-001 |            |
| AAG058-001 | AAA389-001 |            |
| AAG054-001 | AAA443-001 |            |
| AAG056-001 | AAA352-001 |            |
| AAG058-001 | AAA390-001 |            |
| AAG054-001 | AAA444-001 | DAA039-001 |



| Class. DET | Class      | Drawing |
|------------|------------|---------|
| AAE000-001 | AAA218-001 |         |
| AAF311-007 | AAA219-001 |         |
| AAF311-007 | AAA231-001 |         |
| AAF311-007 | AAA220-001 |         |
| AAE759-005 | AAA221-001 |         |
| AAE759-005 | AAA222-001 |         |
| AAF311-006 | AAA223-001 |         |
| AAF311-007 | AAA230-001 |         |
| AAF311-007 | AAA224-001 |         |

## Annex B

### (normative)

### Class definitions

**AAA000-001 01****IEC reference collection****IECREF**

Root class providing a name scope for the characteristic properties in the IEC reference collection of standard data element types.

**NOTE**

IEC REFERENCE COLLECTION is a data dictionary containing a classification with associated sets of properties for the description of electric/electronic and electromechanical components and materials.

**AAE000-001 IEC reference class****AAA001-001 02****Components****CO**

A set of industrial products of which each product can be described with the same group of data element types.

**NOTE**

COMPONENTS are industrial products which serve a specific function or functions, which are not decomposable or physically divisible and which are intended for use in a higher-order assembled product.

**Properties**

AAE006-006 mounting features  
 AAE012-005 international standard  
 AAE017-005 reference temperature  
 AAE019-005 body length  
 AAE020-005 body height  
 AAE021-005 body breadth  
 AAE022-005 outside diameter  
 AAE111-005 packing type  
 AAE112-005 taping  
 AAE687-005 quality approval authority  
 AAE752-005 mass  
 AAE753-005 inside diameter  
 AAE834-005 component description  
 AAE965-005 component status  
 AAF043-005 national standard  
 AAF265-005 packing arrangement  
 AAF267-005 inner tape spacing  
 AAF268-005 orientation  
 AAF269-005 marking method  
 AAF276-002 stress temperature min  
 AAF277-002 stress temperature max  
 AAF278-002 stress ambient temperature  
 AAF279-002 stress relative humidity  
 AAF318-001 flange breadth  
 AAF356-001 reference view  
 AAF357-001 terminal identifier  
 AAF358-001 swapability indicator  
 AAF359-001 permutability indicator  
 AAF362-001 centre of gravity (x-axis)  
 AAF363-001 centre of gravity (y-axis)

AAF364-001 probability distribution  
 AAF365-001 normal average value  
 AAF366-001 normal standard deviation  
 AAF367-001 Poisson variance value  
 AAF368-001 Poisson expectation value  
 AAF369-001 test voltage coefficient  
 AAF370-001 MIL specification  
 AAF372-001 preformed lead  
 AAF388-001 case size  
 AAF391-001 connect-node code  
 AAF392-001 project view code  
 AAF393-001 x-coordinate of the reference point  
 AAF394-001 y-coordinate of the reference point  
 AAF395-001 z-coordinate of the reference point  
 AAF396-001 scale  
 AAF397-001 net area  
 AAF398-001 gross area  
 AAF399-001 net space  
 AAF400-001 gross space  
 AAF401-001 x-coor. preferred mounting position  
 AAF402-001 y-coor. preferred mounting position  
 AAF403-001 z-coor. preferred mounting position  
 AAF404-001 mounting deviation y/z  
 AAF405-001 mounting deviation y/x  
 AAF406-001 x-coordinate position location  
 AAF407-001 y-coordinate position location  
 AAF408-001 z-coordinate position location  
 AAF409-001 cylinder radius  
 AAF410-001 cylinder height  
 AAF411-001 angle axis to x-axis  
 AAF412-001 angle axis to y-axis  
 AAF413-001 angle axis to z-axis  
 AAF414-001 cone radius  
 AAF415-001 cone height  
 AAF416-001 semi angle  
 AAF417-001 sphere radius  
 AAF418-001 x-coordinate of centre  
 AAF419-001 y-coordinate of centre  
 AAF420-001 z-coordinate of centre  
 AAF421-001 major radius of torus  
 AAF422-001 minor radius of torus  
 AAF423-001 wedge x-size  
 AAF424-001 wedge y-size  
 AAF425-001 wedge z-size  
 AAF426-001 major edge  
 AAF427-001 minor edge  
 AAF428-001 primitive height  
 AAF429-001 edge-length  
 AAF430-001 internal radius  
 AAF431-001 external radius  
 AAF432-001 minor radius  
 AAF433-001 installation instruction  
 AAF435-001 terminal connection type  
 AAF436-001 simultaneity factor  
 AAF437-001 column type

**AAE001-005 main class of component****Subclasses**

AAA002-003 Electric/electronic components  
 AAA147-001 Electromechanical components  
 AAA215-001 Magnetic parts

## AAA002-003 01

### Electric/electronic components EE

A set of electric/electronic components of which each component can be described with the same group of data element types.

#### NOTE

ELECTRIC/ELECTRONIC COMPONENTS are groups of components, as used in the classification to indicate a class of functions with a common set of data elements.

#### Properties

AAE007-005 terminal shape  
AAE008-005 terminal placement  
AAE023-005 terminal diameter  
AAE024-005 terminal pitch  
AAE027-005 mounted height  
AAE072-005 terminal length  
AAE149-005 safety approval  
AAE257-005 power dissipation  
AAE259-005 shape/size code BSI  
AAE267-005 rated temperature  
AAE347-005 CECC specification  
AAE540-005 current rms  
AAE633-005 lacquered length  
AAE634-005 terminal material  
AAE688-005 thermal resistance  
AAE785-005 signal type  
AAE841-005 storage temperature  
AAE891-005 ambient temperature  
AAE905-005 dissipation derating factor  
AAE987-005 power consumption  
AAF316-001 hole pitch  
AAF317-001 flange length  
AAF319-001 flange height  
AAF320-001 body diameter  
AAF321-001 pitch (x-axis)  
AAF322-001 pitch (y-axis)  
AAF337-001 pitch circle diameter  
AAF338-001 terminal breadth  
AAF339-001 terminal thickness  
AAF340-001 offset (y-axis)  
AAF341-001 offset (x-axis)  
AAF342-001 flange diameter  
AAF343-001 mounting method  
AAF344-001 body shape  
AAF345-001 terminal exit position SMD  
AAF346-001 terminal exit position non-SMD  
AAF347-001 terminal shape non-SMD  
AAF348-001 terminal shape SMD  
AAF351-001 number of holes  
AAF352-001 basic aspect  
AAF353-001 size code EIA  
AAF371-001 adjuster placement  
AAF373-001 number of studs  
AAF374-001 number of pitches (x-axis)  
AAF375-001 number of pitches (y-axis)  
AAF376-001 terminal cross-section shape  
**AAE002-006 category EE component**

#### Subclasses

AAA003-001 Amplifiers  
AAA013-001 Antennas  
AAA017-001 Batteries  
AAA020-001 Capacitors  
AAA032-001 Conductors

AAA041-001 Delay lines  
AAA042-001 Diode devices  
AAA578-001 Fibre optics  
AAA056-002 Filters  
AAA057-001 Integrated circuits  
AAA074-002 Inductors  
AAA075-001 Lamps  
AAA076-001 Liquid crystal displays  
AAA229-001 Microwave components  
AAA077-001 Optoelectronic devices  
AAA087-001 Oscillators  
AAA088-001 Piezoelectric devices  
AAA232-001 Printed wiring circuits  
AAA089-002 Resistors  
AAA596-001 Resonators  
AAA103-001 Sensors  
AAA595-001 Spark gaps  
AAA111-001 Transformers  
AAA118-001 Transistors  
AAA131-001 Trigger devices  
AAA138-001 Tubes  
AAA146-001 Tuners

## AAA003-001 02

### Amplifiers AMP

A set of amplifiers of which each amplifier can be described with the same group of data element types.

#### NOTE

AMPLIFIERS are active two-port devices essentially designed to produce an output signal of greater power than that of the input signal. IEC 60050(702) (1992)

#### Properties

AAE697-005 current consumption  
AAE969-005 amplifier package  
AAE974-005 input standing wave ratio  
AAE975-005 output standing wave ratio

### AAF146-005 frequency application

#### Subclasses

AAA004-001 Low-frequency amplifiers  
AAA011-001 Radio frequency amplifiers  
AAA012-001 Wideband amplifiers

## AAA004-001 02

### Low-frequency amplifiers LF

A set of low-frequency amplifiers of which each amplifier can be described with the same group of data element types.

#### NOTE

LOW-FREQUENCY AMPLIFIERS are amplifiers designed for use with baseband unmodulated signals, for example audio, video and switching signals.

**AAF169-005 amplified quantity****Subclasses**

AAA005-001 Power amplifiers  
 AAA006-001 Voltage amplifiers

**AAA005-001 02****Power amplifiers****PWA**

A set of power amplifiers of which each amplifier can be described with the same group of data element types.

**NOTE**

POWER AMPLIFIERS are amplifiers optimized to deliver output power to the load. Normally the voltage gain is insignificant and the power gain is thus mainly due to current gain.

**AAA006-001 02****Voltage amplifiers****VTA**

A set of voltage amplifiers of which each amplifier can be described with the same group of data element types.

**NOTE**

VOLTAGE AMPLIFIERS are amplifiers designed primarily to amplify the signal voltage, without supplying appreciable power.

**Properties**

AAF158-005 output voltage peak-to-peak  
 AAF159-005 large-signal voltage gain  
 AAF162-005 slew rate  
 AAF165-005 output resistance  
 AAF166-005 unity-gain frequency  
 AAF167-005 gain bandwidth product  
 AAF168-005 total response time

**AAF191-005 input configuration****Subclasses**

AAA007-001 Differential amplifiers  
 AAA010-001 Single-sided amplifiers

**AAA007-001 02****Differential amplifiers****DFA**

A set of differential amplifiers of which each amplifier can be described with the same group of data element types.

**NOTE**

DIFFERENTIAL AMPLIFIERS are amplifiers whose output signal is proportional to the algebraic difference between the voltages applied to their two inputs.

**Properties**

AAF157-005 common-mode input voltage  
 AAF160-005 common-mode rejection ratio  
 AAF163-005 differential input resistance  
 AAF164-005 common-mode input resistance

**AAF192-005 coupling method****Subclasses**

AAA008-001 Operational amplifiers  
 AAA009-001 AC-coupled amplifiers

**AAA008-001 02****Operational amplifiers****OPA**

A set of operational amplifiers of which each amplifier can be described with the same group of data element types.

**NOTE**

OPERATIONAL AMPLIFIERS are high-gain differential dc-coupled amplifiers.

**Properties**

AAF152-005 input offset current  
 AAF153-005 temp coef input offset current  
 AAF154-005 average bias current  
 AAF155-005 input offset voltage  
 AAF156-005 temp coef input offset voltage  
 AAF161-005 supply voltage sensitivity  
 AAF170-005 power supply rejection ratio

**AAA009-001 02****AC-coupled amplifiers****ACA**

A set of ac-coupled amplifiers of which each amplifier can be described with the same group of data element types.

**NOTE**

AC-COUPLED AMPLIFIERS are differential ac-coupled amplifiers.

**AAA010-001 02****Single-sided amplifiers****SSA**

A set of single-sided amplifiers of which each amplifier can be described with the same group of data element types.

**NOTE**

SINGLE-SIDED AMPLIFIERS are amplifiers of which one input terminal is directly connected to earth.

**AAA011-001 02****Radio frequency amplifiers****RF**

A set of RF amplifiers of which each amplifier can be described with the same group of data element types.

**NOTE**

RADIO FREQUENCY AMPLIFIERS are amplifiers designed for use with signals modulated on a radio-frequency carrier. IEC 60050(702) (1992)



## AAA012-001 02

### Wideband amplifiers

WB

A set of wideband amplifiers of which each amplifier can be described with the same group of data element types.

#### NOTE

WIDEBAND AMPLIFIERS are amplifiers designed for uniform operation within a broad range of frequencies, usually accommodating several signal channels.

#### Properties

AAE424-005 power gain  
AAE698-005 output voltage  
AAE699-005 composite triple beat  
AAE700-005 2nd-order beat  
AAE701-005 input return losses  
AAE702-005 output return losses  
AAE703-005 cross modulation  
AAE705-005 slope cable equivalent  
AAE706-005 conformity of frequency response

## AAA013-002 02

### Antennas

ANT

A set of antennas of which each antenna can be described with the same set of data element types.

#### NOTE

ANTENNAS are transducers which either emit radio frequency power into space from a signal source or intercepts an arriving electromagnetic field, converting it into an electric signal. IEC 60747-1 (1983)

#### Properties

AAE340-005 effective frequency  $f_{e2}$   
AAE341-005 effective frequency  $f_{e1}$

#### AAE511-007 impedance type

#### Subclasses

AAA014-001 Capacitive antennas  
AAA015-001 Inductive antennas  
AAA016-001 Resistive antennas

## AAA014-001 02

### Capacitive antennas

CAP

A set of capacitive antennas of which each antenna can be described with the same group of data element types.

#### NOTE

CAPACITIVE ANTENNAS are antennas in which, under given conditions, the predominant function is effected by means of capacitance.

#### Properties

AAE996-005 number of sections  
AAE997-005 extended length  
AAE998-005 non-extended length

## AAA015-001 02

### Inductive antennas

IND

A set of inductive antennas of which each antenna can be described with the same group of data element types.

#### NOTE

INDUCTIVE ANTENNAS are antennas in which, under given conditions, the predominant function is effected by means of inductance.

#### Properties

AAE151-005 winding configuration  
AAE517-005 inductance  
AAE518-005 quality factor

## AAA016-001 02

### Resistive antennas

RES

A set of resistive antennas of which each antenna can be described with the same group of data element types.

#### NOTE

RESISTIVE ANTENNAS are antennas in which, under given conditions, the predominant function is effected by means of resistance.

## AAA017-001 02

### Batteries

BAT

A set of batteries of which each battery can be described with the same group of data element types.

#### NOTE

BATTERIES are electrochemical energy sources consisting of one or more cells. (derivation)

#### Properties

AAE262-005 encapsulation technology  
AAE529-005 open-circuit voltage  
AAE530-005 nominal capacity  
AAE940-005 number of cells in series  
AAE942-005 storage life

#### AAE510-005 chargeability type

#### Subclasses

AAA018-001 Primary batteries  
AAA019-001 Secondary batteries

## AAA018-001 02

### Primary batteries

PRI

A set of primary batteries of which each battery can be described with the same group of data element types.



**NOTE**

PRIMARY BATTERIES are electrochemical systems (batteries) designed for delivery of electric energy in one single uninterrupted (continuous) or interrupted (intermittent) discharge. IEC 60086-1 (2000)

**Properties**

AAE531-005 primary electrochemical system

**AAA019-001 02****Secondary batteries****SEC**

A set of secondary batteries of which each battery can be described with the same group of data element types.

**NOTE**

SECONDARY BATTERIES are electrochemical systems (batteries) capable of storing in chemical form the electric energy received and which can give it back by reconversion. (derivation) IEC 60050(486) (1991)

**Properties**

AAE532-005 secondary electrochemical system

AAE941-005 voltage during charge

AAE943-005 charge time

AAE944-005 number of charge cycles

**AAA020-001 02****Capacitors****CAP**

A set of capacitors of which each capacitor can be described with the same group of data element types.

**NOTE**

CAPACITORS are systems of two conductors (plates) separated over the extent of their surfaces by a thin insulating medium (dielectric), their intended characteristic being capacitance.

**Properties**

AAE010-005 climatic category

AAE030-005 E series

AAE044-005 rated voltage (dc)

AAE065-005 tangent of loss angle

AAE067-005 temperature coefficient (cap)

AAF360-001 max range value

AAF361-001 min range value

AAJ053-001 category voltage

AAJ054-001 surge voltage

AAJ055-001 rated temperature

AAJ056-001 category temperature

AAJ057-001 capacitance change with temperature

AAJ058-001 impedance of a capacitor

**AAE003-006 adjustability type****Subclasses**

AAA021-003 Fixed capacitors

AAA031-002 Variable capacitors

**AAA021-003 01****Fixed capacitors****FIX**

A set of fixed capacitors of which each capacitor can be described with the same group of data element types.

**NOTE**

FIXED CAPACITORS are capacitors that are designed so that the spatial relationship of their parts cannot be changed.

**Properties**

AAE009-005 performance grade

AAE018-001 capacitance lower tolerance (%)

AAE034-005 circuit application (capacitor)

AAE036-005 safety class

AAE046-005 capacitance

AAE047-001 capacitance upper tolerance (%)

AAE063-005 insulation resistance

AAE066-005 time constant (of capacitor)

AAE071-005 capacitance tolerance

AAE262-005 encapsulation technology

AAE268-001 capacitance upper tolerance

AAE269-001 capacitance lower tolerance

AAF462-001 toleranced capacitance

AAJ008-001 size code

**AAE004-007 dielectric material type****Subclasses**

AAA022-001 Fixed air capacitors

AAA023-001 Fixed ceramic capacitors

AAA026-002 Fixed electrolytic capacitors

AAA027-001 Fixed film capacitors

AAA028-001 Fixed glass capacitors

AAA029-002 Fixed mica capacitors

AAA030-001 Fixed paper capacitors

AAA505-001 Fixed mixed-dielectric capacitors

**AAA022-001 02****Fixed air capacitors****AIR**

A set of fixed air capacitors of which each capacitor can be described with the same group of data element types.

**NOTE**

FIXED AIR CAPACITORS are fixed capacitors with a dielectric consisting of air.

**AAA023-001 02****Fixed ceramic capacitors****CER**

A set of fixed ceramic capacitors of which each capacitor can be described with the same group of data element types.

**NOTE**

FIXED CERAMIC CAPACITORS are fixed capacitors with a dielectric consisting of a ceramic material.

## **AAE038-005 dielectric class (ceramic cap)**

### **Subclasses**

- AAA024-001 Fixed class1 ceramic capacitor  
AAA025-001 Fixed class2 ceramic capacitor

### **AAA024-001 02**

#### **Fixed class1 ceramic capacitor CL1**

A set of fixed ceramic capacitors class1 of which each capacitor can be described with the same group of data element types.

#### **NOTE**

FIXED CLASS1 CERAMIC CAPACITORS are ceramic capacitors specially designed and suited for resonant circuit application where low losses and high stability of capacitance are essential or where a precisely defined temperature coefficient is required. The ceramic dielectric is defined by their rated temperature coefficient (alpha). IEC 60384-8 (1988)

#### **Properties**

- AAE035-005 temperature coefficient code  
AAE266-005 dielectric subclass 1

### **AAA025-001 02**

#### **Fixed class2 ceramic capacitor CL2**

A set of fixed ceramic capacitors class2 of which each capacitor can be described with the same group of data element types.

#### **NOTE**

FIXED CLASS2 CERAMIC CAPACITORS are ceramic capacitors which have a dielectric with a high permittivity and which are suitable for by-pass and coupling applications or for frequency discriminating circuits where low losses and high stability of capacitance are not of major importance. The ceramic dielectric is characterized by the non-linear change of capacitance over the category temperature range. IEC 60384-9 (1988)

#### **Properties**

- AAE037-005 EIA temperature characteristic  
AAE076-005 dielectric subclass 2

### **AAA026-002 01**

#### **Fixed electrolytic capacitors ELC**

A set of fixed electrolytic capacitors of which each capacitor can be described with the same group of data element types.

#### **NOTE**

FIXED ELECTROLYTIC CAPACITORS are fixed capacitors in which the electrolytically formed oxide layer on the surface of the anode serves as a dielectric and having a solid or non-solid electrolyte forming the cathode, usually having polar properties.

### **Properties**

- AAE040-005 electrode material type  
AAE041-005 shelf life  
AAE042-005 leakage current short-term  
AAE043-005 leakage current continuous  
AAE064-005 equivalent series resistance  
AAE073-005 endurance  
AAE263-005 polarity type  
AAE960-005 ripple current  
AAJ051-001 electrolyte type  
AAJ052-001 anode type

### **AAJ001-001 electrolytic capacitor type**

#### **Subclasses**

- AAA501-001 Solid tantalum  
AAA502-001 Non-solid tantalum  
AAA503-001 Solid aluminium  
AAA504-001 Non-solid aluminium

### **AAA027-001 02**

#### **Fixed film capacitors FLM**

A set of fixed film capacitors of which each capacitor can be described with the same group of data element types.

#### **NOTE**

FIXED FILM CAPACITORS are fixed capacitors with a dielectric consisting of a plastic film.

#### **Properties**

- AAE031-005 electrode technology  
AAE033-005 voltage application  
AAE039-005 film dielectric material  
AAE045-005 rated voltage (ac)

### **AAA028-001 02**

#### **Fixed glass capacitors GLS**

A set of fixed glass capacitors of which each capacitor can be described with the same group of data element types.

#### **NOTE**

FIXED GLASS CAPACITORS are fixed capacitors with a dielectric consisting of glass.

### **AAA029-002 01**

#### **Fixed mica capacitors MICA**

A set of fixed mica capacitors of which each capacitor can be described with the same group of data element types.

#### **NOTE**

FIXED MICA CAPACITORS are fixed capacitors with a dielectric consisting of mica.

**AAA030-001 02****Fixed paper capacitors****PAP**

A set of fixed paper capacitors of which each capacitor can be described with the same group of data element types.

**NOTE**

FIXED PAPER CAPACITORS are fixed capacitors with a dielectric consisting of paper, usually impregnated.

**AAA031-002 01****Variable capacitors****VAR**

A set of variable capacitors of which each capacitor can be described with the same group of data element types.

**NOTE**

VARIABLE CAPACITORS are capacitors designed so that their main property can be varied by mechanically changing the spatial relationship of their parts.

**Properties**

AAE068-005 maximum capacitance  
AAE069-005 minimum capacitance  
AAE070-005 adjustability class  
AAE106-005 number of functions  
AAE172-005 ganging number  
AAF014-005 driving feature  
AAJ002-001 variable capacitor type

**AAA032-001 02****Conductors****CND**

A set of conductors of which each conductor can be described with the same group of data element types.

**NOTE**

CONDUCTORS are components containing one or more electric conductors.

**Properties**

AAF240-005 conductor finish  
AAF241-005 conductive material  
AAF242-006 conductor shape  
AAF243-005 conductor configuration  
AAF244-005 conductor size AWG  
AAF245-005 dc resistance  
AAF246-005 conductor diameter  
AAF247-005 cross-section  
AAF434-001 bending radius

**AAF239-005 bare/insulated****Subclasses**

AAA033-001 Bare conductors  
AAA034-001 Insulated conductors

**AAA033-001 02****Bare conductors****BAR**

A set of bare conductors of which each conductor can be described with the same group of data element types.

**NOTE**

BARE CONDUCTORS are conductors consisting of a single uninsulated conductive part.

**AAA034-001 02****Insulated conductors****INS**

A set of insulated conductors of which each conductor can be described with the same group of data element types.

**NOTE**

INSULATED CONDUCTORS are conductors containing one or more insulated conductive parts.

**Properties**

AAF248-005 insulating material  
AAF251-005 test voltage minimum

**AAF249-005 cable/wire****Subclasses**

AAA035-001 Cables  
AAA040-001 Insulated wires

**AAA035-001 02****Cables****CBL**

A set of cables of which each cable can be described with the same group of data element types.

**NOTE**

CABLES (electric) are an assembly of conductors insulated from one another and enclosed in a common binding or sheathing, and having some degree of flexibility.

**Properties**

AAF252-005 MIL cable type  
AAF254-005 cable configuration  
AAF255-005 number of cable elements  
AAF258-005 working voltage  
AAF259-005 capacitance between conductors

**AAE152-005 power/signal****Subclasses**

AAA036-001 Power cables  
AAA037-001 Signal cables

## AAA036-001 02

### Power cables

### POW

A set of power cables of which each cable can be described with the same group of data element types.

#### NOTE

POWER CABLES are cables designed for the purpose of handling energy.

## AAA037-001 02

### Signal cables

### SIG

A set of signal cables of which each cable can be described with the same group of data element types.

#### NOTE

SIGNAL CABLES are cables designed for the purpose of handling a signal.

## AAF146-005 frequency application

### Subclasses

AAA038-001 LF cables  
AAA039-001 RF cables

## AAA038-001 02

### LF cables

### LF

A set of low-frequency cables of which each cable can be described with the same group of data element types.

#### NOTE

LF CABLES are cables designed for use with baseband unmodulated signals, for example audio, video and switching signals.

### Properties

AAF253-005 LF cable element

## AAA039-001 02

### RF cables

### RF

A set of RF cables of which each cable can be described with the same group of data element types.

#### NOTE

RF CABLES are cables designed for use with signals modulated on a radio-frequency carrier.

### Properties

AAF256-005 RF cable element  
AAF257-005 dielectric construction  
AAF260-005 characteristic impedance  
AAF261-005 attenuation

## AAA040-001 02

### Insulated wires

### IWR

A set of insulated wires of which each wire can be described with the same group of data element types.

#### NOTE

INSULATED wires are conductors consisting of a single insulated conductive part.

### Properties

AAF250-005 colour code  
AAF262-005 wire application

## AAA041-001 02

### Delay lines

### DEL

A set of delay lines of which each delay line can be described with the same group of data element types.

#### NOTE

DELAY LINES are linear two-port devices designed to introduce a desired delay in the transmission of a signal without modifying the other characteristics of the signal.

### Properties

AAE442-005 colour TV transmission  
AAE534-005 bandwidth  
AAE541-005 frequency  
AAE542-005 delay line application  
AAE543-005 delay time  
AAE544-005 phase delay time  
AAE877-005 working principle  
AAE878-006 delay line type  
AAE879-005 spurious signal level (3-tau)  
AAE880-005 spurious signal level  
AAE885-005 phase relation  
AAE886-005 phase delay drift  
AAE887-005 insertion loss

## AAA042-001 02

### Diode devices

### DID

A set of diode devices of which each device can be described with the same group of data element types.

#### NOTE

DIODE DEVICES are components built up of one or more two-terminal semiconductor devices and which can contain also resistors and/or capacitors.

### Properties

AAF275-002 junction stress temperature

## AAF305-005 category of diode device

### Subclasses

AAA043-001 Bridge rectifiers  
AAA044-001 Diodes  
AAA055-001 Voltage multipliers

**AAA043-001 02****Bridge rectifiers****BRI**

A set of bridge rectifiers of which each bridge rectifier can be described with the same group of data element types.

**NOTE**

BRIDGE RECTIFIERS are full-wave rectifiers with four elements connected as a bridge circuit with dc voltage obtained from one pair of opposite junctions when alternating current is applied to the other pair.

**Properties**

AAE284-005 peak inrush current limit  
AAE285-005 non-rep peak input current limit  
AAE286-005 average output current  
AAE287-005 repetitive peak output current  
AAE290-005 repetitive peak input voltage  
AAE291-005 rms input voltage  
AAE292-005 crest working input voltage

**AAA044-002 02****Diodes****DIO**

A set of diodes of which each diode can be described with the same group of data element types.

**NOTE**

DIODES are two-terminal semiconductor devices having an asymmetric voltage-current characteristic.

**Properties**

AAE276-005 reverse current  
AAE277-005 reverse voltage  
AAE279-005 forward voltage  
AAE331-005 diode package  
AAE337-005 junction temperature  
AAE489-005 diode technology  
AAE494-005 nearest conventional type  
AAE496-005 diode capacitance  
AAE546-005 forward current limit

**AAE273-007 diode application****Subclasses**

AAA045-001 Breakover diodes  
AAA046-001 Rectifier diodes  
AAA047-001 Signal diodes  
AAA048-001 Stabilizer diodes  
AAA054-001 Variable capacitance diodes

**AAA045-001 02****Breakover diodes****BOD**

A set of breakover diodes of which each diode can be described with the same set of data element types.

**NOTE**

BREAKOVER DIODES are two-terminal semiconductor devices that operate in either an OFF (non-conducting) state or an ON (conducting) state,

reaching the conducting state when a voltage of specified minimum value (breakover voltage) is applied across their terminals and then conducting with a low ON-state voltage until the current is reduced below the minimum holding current.

**Properties**

AAE488-005 diode configuration

**AAA046-001 02****Rectifier diodes****REC**

A set of rectifier diodes of which each diode can be described with the same group of data element types.

**NOTE**

RECTIFIER DIODES are semiconductor diodes designed for rectification and including their associated mounting and cooling attachments if integral with them.

**Properties**

AAE281-005 reverse recovery time  
AAE293-005 repetitive peak forward current  
AAE294-005 non-repetitive peak forward current  
AAE296-005 working peak forward current  
AAE297-005 repetitive peak reverse current  
AAE299-005 crest working reverse voltage  
AAE301-005 non-repetitive peak reverse voltage  
AAE302-005 repetitive peak reverse power  
AAE303-006 non-rep peak reverse power diss  
AAE304-005 non-rep peak rev avalanche energy  
AAE305-005 Joule-integral  
AAE306-005 total reverse recovery time  
AAE336-005 mounting base temperature  
AAE488-005 diode configuration  
AAE503-005 EHT stack application  
AAE505-005 rectifier diode application  
AAE966-005 average forward current  
AAF301-005 reverse recovery time (I)  
AAF302-005 breakdown voltage

**AAA047-001 02****Signal diodes****SIGD**

A set of signal diodes of which each diode can be described with the same group of data element types.

**NOTE**

SIGNAL DIODES are diodes used for the purpose of extracting or processing information contained in an electrical signal which varies with time and may be either analogue or digital.

**Properties**

AAE281-005 reverse recovery time  
AAE293-005 repetitive peak forward current  
AAE294-005 non-repetitive peak forward current  
AAE300-005 repetitive peak reverse voltage  
AAE301-005 non-repetitive peak reverse voltage  
AAE302-005 repetitive peak reverse power  
AAE303-006 non-rep peak reverse power diss  
AAE310-005 diode forward resistance



AAE487-005 frequency band  
AAE488-005 diode configuration  
AAE490-005 modulation method  
AAE966-005 average forward current  
AAF301-005 reverse recovery time (I)

#### AAA048-001 02

##### Stabilizer diodes **STB**

A set of stabilizing diodes of which each diode can be described with the same group of data element types.

##### NOTE

STABILIZER DIODES are diodes exhibiting a breakdown caused by the transition of electrons from the valence band to the conduction band due to tunnel action under the influence of a strong electric field in the reverse direction. IEC 60050-521 (2002)

##### Properties

AAE318-005 non-repetitive peak reverse current  
AAE327-006 non-rep peak reverse power diss  
AAF389-001 non-rep peak reverse power diss

#### AAE312-005 diode function

##### Subclasses

AAA049-001 Current regulator diodes  
AAA050-001 Voltage reference diodes  
AAA051-001 Voltage regulator diodes  
AAA052-001 Stabistor diodes  
AAA053-001 Transient suppressor diodes

#### AAA049-001 02

##### Current regulator diodes **CUR**

A set of current regular diodes of which each diode can be described with the same group of data element types.

##### NOTE

CURRENT REGULATOR DIODES are diodes that limit current to an essentially constant value over a specified voltage range.

#### AAA050-001 02

##### Voltage reference diodes **REF**

A set of voltage reference diodes of which each diode can be described with the same group of data element types.

##### NOTE

VOLTAGE REFERENCE DIODES are diodes which develop a reference voltage of specified accuracy across their terminals, when biased to operate within a specified current range. IEC 60747-1 (1983)

##### Properties

AAE316-005 working current  
AAE317-005 peak working current  
AAE322-005 temperature coefficient S<sub>Z</sub>

AAE323-005 differential resistance  
AAE324-005 working voltage

#### AAA051-001 02

##### Voltage regulator diodes **REG**

A set of voltage regulator diodes of which each diode can be described with the same group of data element types.

##### NOTE

VOLTAGE REGULATOR DIODES are diodes which develop an essential constant voltage across their terminals throughout a specified current range. IEC 60747-1 (1983)

##### Properties

AAE316-005 working current  
AAE317-005 peak working current  
AAE322-005 temperature coefficient S<sub>Z</sub>  
AAE324-005 working voltage  
AAE328-005 differential resistance

#### AAA052-001 02

##### Stabistor diodes **STA**

A set of stabistor diodes of which each diode can be described with the same group of data element types.

##### NOTE

STABISTOR DIODES are diodes having closely controlled conductance, controlled storage charge, and low leakage, as required for clippers, clamping circuits, bias regulators, and other logic circuits that require tight voltage-level tolerance.

##### Properties

AAE293-005 repetitive peak forward current  
AAE300-005 repetitive peak reverse voltage  
AAE328-005 differential resistance  
AAE329-005 temperature coefficient S<sub>F</sub>

#### AAA053-001 02

##### Transient suppressor diodes **SUP**

A set of transient suppressor diodes of which each diode can be described with the same group of data element types.

##### NOTE

TRANSIENT SUPPRESSOR DIODES are diodes utilizing the steep slope of the blocking current-voltage characteristics of selenium plates for limiting transient overvoltages. Suppressors may be of two types: a Polarized: Selenium transient overvoltage suppressor having an asymmetrical current-voltage characteristic; Non-polarized: Selenium transient overvoltage suppressor having a symmetrical current-voltage characteristic.

##### Properties

AAE313-005 clamping voltage  
AAE316-005 working current

**AAA054-001 02****Variable capacitance diodes VARD**

A set of variable capacitor diodes of which each diode can be described with the same group of data element types.

**NOTE**

VARIABLE CAPACITANCE DIODES are diodes that are designed so that their capacitance can be varied by changing the voltage between their terminals.

**Properties**

|            |                          |
|------------|--------------------------|
| AAE310-005 | diode forward resistance |
| AAE311-005 | diode reverse resistance |
| AAE487-005 | frequency band           |
| AAE488-005 | diode configuration      |
| AAE490-005 | modulation method        |
| AAE502-005 | capacitance ratio        |
| AAF303-005 | diode upper capacitance  |
| AAF304-005 | diode lower capacitance  |

**AAA055-001 02****Voltage multipliers VMP**

A set of voltage multipliers of which each multiplier can be described with the same group of data element types.

**NOTE**

VOLTAGE MULTIPLIERS are rectifier circuits capable of supplying a dc output voltage that is greater than (generally two or more times) the peak value of the ac input voltage.

**Properties**

|            |                               |
|------------|-------------------------------|
| AAE282-005 | output current EHT supply     |
| AAE283-005 | output current focus supply   |
| AAE288-005 | input voltage peak-to-peak    |
| AAE289-005 | output voltage EHT supply     |
| AAE290-005 | repetitive peak input voltage |

**AAA056-002 01****Filters FIL**

A set of filters of which each filter can be described with the same group of data element types.

**NOTE**

FILTERS ARE linear two-port devices designed to transmit spectral components of signals according to a specified law, generally in order to pass the components in certain frequency bands and to attenuate those in other bands. IEC 60050(702) (1992)

**Properties**

|            |                               |
|------------|-------------------------------|
| AAE527-005 | centre frequency              |
| AAE533-005 | input impedance               |
| AAE534-005 | bandwidth                     |
| AAE543-005 | delay time                    |
| AAE888-005 | spurious signal level (2-tau) |
| AAF044-005 | output impedance              |

|            |                       |
|------------|-----------------------|
| AAF119-005 | frequency application |
| AAF120-005 | comb depth            |
| AAF121-005 | pass-band attenuation |
| AAJ059-001 | filter type           |

**AAA057-001 02****Integrated circuits IC**

A set of integrated circuits of which each integrated circuit can be described with the same group of data element types.

**NOTE**

INTEGRATED CIRCUITS are circuits in which all or some of the circuit elements are inseparably associated and electrically interconnected so that they are considered to be indivisible for the purpose of construction and commerce. IEC 60748-1 (2002)

**Properties**

|            |                              |
|------------|------------------------------|
| AAE074-005 | IC application field         |
| AAE086-005 | supply voltage limit         |
| AAE106-005 | number of functions          |
| AAE210-005 | input voltage limit          |
| AAE214-005 | power dissipation per output |
| AAE336-005 | mounting base temperature    |
| AAE337-005 | junction temperature         |
| AAE442-005 | colour TV transmission       |
| AAE458-005 | number of inputs             |
| AAE487-005 | frequency band               |
| AAE490-005 | modulation method            |
| AAE686-005 | IC technology                |
| AAE690-005 | supply voltage               |
| AAE691-005 | supply current               |
| AAE786-005 | mode of operation            |
| AAE838-005 | IC package code              |
| AAE898-005 | input capacitance            |
| AAF275-002 | junction stress temperature  |

**AAE077-005 signal type****Subclasses**

|            |                                |
|------------|--------------------------------|
| AAA058-001 | Analogue signal functions      |
| AAA059-001 | Digital signal functions       |
| AAA072-001 | Analogue/digital signal functi |
| AAA073-001 | Periodic/dc functions          |

**AAA058-001 02****Analogue signal functions ANA**

A set of analogue signal function ICs of which each function can be described with the same group of data element types.

**NOTE**

ANALOGUE SIGNAL FUNCTIONS are functions designed to carry out operations on analogue signals.

**Properties**

|            |                   |
|------------|-------------------|
| AAE084-005 | analogue function |
|------------|-------------------|

## AAA059-001 02

### Digital signal functions DIG

A set of digital signal function ICs of which each function can be described with the same group of data element types.

#### NOTE

DIGITAL SIGNAL FUNCTIONS are functions designed to carry out operations on digital signals.

#### Properties

|            |                               |
|------------|-------------------------------|
| AAE092-005 | HIGH-state output voltage     |
| AAE093-005 | HIGH-state output voltage ref |
| AAE094-005 | LOW-state output voltage ref  |
| AAE097-005 | LOW-state output voltage      |
| AAE217-005 | input current limit           |
| AAE218-005 | output current limit          |
| AAE223-005 | input leakage current         |
| AAE235-005 | output fall time              |
| AAE238-005 | output rise time              |
| AAE239-005 | HIGH off-state output current |
| AAE240-005 | LOW off-state output current  |
| AAE254-005 | LOW-state output current      |
| AAE255-005 | HIGH-state output current     |
| AAE457-005 | numeral system                |
| AAE459-005 | word size                     |
| AAE464-005 | mode of control               |
| AAE718-005 | HIGH-state input voltage      |
| AAE719-005 | LOW-state input voltage       |
| AAE787-005 | input/output characteristic   |
| AAE896-005 | quiescent current             |
| AAE897-005 | additional quiescent current  |
| AAE899-005 | HIGH-state input current      |
| AAE900-005 | LOW-state input current       |
| AAE901-005 | HIGH-state supply current     |
| AAE902-005 | LOW-state supply current      |
| AAE903-005 | off-state supply current      |
| AAF207-005 | output short-circuit current  |
| AAF323-005 | interface compatibility       |

### AAE085-005 digital function

#### Subclasses

|            |                                    |
|------------|------------------------------------|
| AAA060-001 | Combinational/sequential/interface |
| AAA061-001 | Microcontrollers                   |
| AAA062-001 | Microprocessors                    |
| AAA063-001 | Programmable logic devices         |
| AAA064-001 | Storage functions                  |

## AAA060-001 03

### Combinational/sequential/interface CSI

A set of combinatorial/sequential/interface function ICs of which each function can be described with the same group of data element types.

#### NOTE

COMBINATIONAL/SEQUENTIAL/INTERFACE is an abbreviated term for combinatorial, sequential and interface, as used in the classification to indicate a class of functions with a common set of data element types.

#### Properties

|            |                   |
|------------|-------------------|
| AAE231-005 | propagation delay |
|------------|-------------------|

|            |                              |
|------------|------------------------------|
| AAE233-005 | HIGH to LOW propagation time |
| AAE237-005 | LOW to HIGH propagation time |
| AAE692-005 | standby current disabled     |
| AAE693-005 | standby current enabled      |
| AAE790-005 | CSI functions                |
| AAF208-005 | positive-going threshold     |
| AAF209-005 | negative-going threshold     |
| AAF210-005 | hysteresis                   |
| AAF211-005 | maximum clock frequency      |
| AAF212-005 | set-up time                  |
| AAF213-005 | hold time                    |
| AAF214-005 | output enable time           |
| AAF215-005 | output disable time          |
| AAF216-005 | pulse width HIGH             |
| AAF217-005 | pulse width LOW              |
| AAF218-005 | metastable window            |
| AAF219-005 | recovery time                |

## AAA061-001 02

### Microcontrollers MUC

A set of microcontrollers of which each microcontroller can be described with the same group of data element types.

#### NOTE

MICROCONTROLLERS are controllers whose elements have been miniaturized into an IC. They are generally dedicated to a single application, mainly real time control.

#### Properties

|            |                              |
|------------|------------------------------|
| AAF223-005 | machine cycle                |
| AAF224-005 | clock frequency              |
| AAF225-005 | internal clock frequency     |
| AAF226-005 | address bus width            |
| AAF227-005 | data bus width               |
| AAF228-005 | addressable storage size     |
| AAF229-005 | instruction rate             |
| AAF230-005 | number of internal registers |
| AAF324-005 | instruction set              |
| AAF325-005 | interrupt type               |
| AAF326-005 | addressing mode              |
| AAF327-005 | on-chip memory               |
| AAF328-005 | I/O bus width                |
| AAF329-005 | number of peripherals        |
| AAF330-005 | peripheral word size         |

## AAA062-001 02

### Microprocessors MUP

A set of microprocessors of which each microprocessor can be described with the same group of data element types.

#### NOTE

MICROPROCESSORS are processors whose elements have been miniaturized into an IC.

#### Properties

|            |                              |
|------------|------------------------------|
| AAF221-005 | bus structure                |
| AAF222-005 | instruction set architecture |
| AAF223-005 | machine cycle                |
| AAF224-005 | clock frequency              |
| AAF225-005 | internal clock frequency     |



AAF226-005 address bus width  
 AAF227-005 data bus width  
 AAF228-005 addressable storage size  
 AAF229-005 instruction rate  
 AAF230-005 number of internal registers  
 AAF324-005 instruction set  
 AAF325-005 interrupt type  
 AAF326-005 addressing mode  
 AAF328-005 I/O bus width

**AAA063-001 02****Programmable logic devices PLD**

A set of programmable logic devices of which each device can be described with the same group of data element types.

**NOTE**

PROGRAMMABLE LOGIC DEVICES are device consisting of a programmable AND array whose output terms are fed to a fixed or programmable. (a PLD may also include registers)

**Properties**

AAF231-005 PLD programmability

**AAA064-002 02****Storage functions STO**

A set of storage functions of which each function can be described with the same group of data element types.

**NOTE**

STORAGE FUNCTIONS are functional units in which data (information) can be placed, in which they can be retained and from which they can be retrieved. ISO 2382-11 (1987)

**Properties**

AAE474-005 storage size  
 AAE720-005 access time  
 AAF232-005 output data valid time  
 AAJ098-001 address set-up time  
 AAJ099-001 address hold time  
 AAJ100-001 input set-up time  
 AAJ101-001 input hold time  
 AAJ102-001 clockset-up time  
 AAJ103-001 clock hold time  
 AAJ104-001 output hold time  
 AAJ105-001 transition time

**AAE722-007 storage function****Subclasses**

AAA065-001 Content addressable memory ICs  
 AAA066-001 Charge coupled device ICs  
 AAA067-001 Random access memory ICs  
 AAA070-001 Read only memory ICs  
 AAA071-001 Registers

**AAA065-001 02****Content addressable memory ICs CAM**

A set of content addressable memory ICs of which each memory can be described with the same group of data element types.

**NOTE**

CONTENT ADDRESSABLE MEMORY are memories that respond with all the data in a storage zone if a portion of that data matches the data used for addressing the memory. If a match could occur in more than one storage zone, then usually the data read out will be that contained in the storage zone having the lowest address value.

**AAA066-001 02****Charge coupled device ICs CCD**

A set of charge coupled device ICs of which each charge coupled device can be described with the same group of data element types.

**NOTE**

CHARGE COUPLED DEVICE ICs are charge-transfer devices that store charge in potential wells and transfers this charge almost completely as a packet by translating the position of the potential wells. This device operates by changing the position of the same packet of charge.

**AAA067-001 02****Random access memory ICs RAM**

A set of random access memory ICs of which each memory can be described with the same group of data element types.

**NOTE**

RANDOM ACCESS MEMORY ICs are memories that permit access to any of their address locations in any desired sequence.

**AAF233-005 RAM type****Subclasses**

AAA068-001 Dynamic ram ICs  
 AAA069-001 Static ram ICs

**AAA068-001 02****Dynamic RAM ICs DRM**

A set of dynamic RAM ICs of which each IC can be described with the same group of data element types.

**NOTE**

DYNAMIC RAM ICs are memories in which the cells (elements) require the repetitive application of control signals in order to retain the data stored. A dynamic memory may use dynamic addressing and/or sensing circuits. This definition applies whether or not the control signals are generated inside or outside the memory.

### Properties

|            |                              |
|------------|------------------------------|
| AAE721-005 | access time from CAS         |
| AAF331-006 | refresh time interval        |
| AAJ091-001 | access time from address     |
| AAJ092-001 | access time from clock       |
| AAJ093-001 | burst-mode cycle time        |
| AAJ094-001 | random read/write cycle time |
| AAJ095-001 | access time from RAS         |
| AAJ096-001 | clock frequency              |

### AAA069-001 02

#### Static RAM ICs

#### SRM

A set of static RAM ICs of which each IC can be described with the same group of data element types.

#### NOTE

STATIC RAM ICs are memories in which the data content is retained in the absence of control signals. A static memory may use dynamic addressing and/or sensing circuits.

### Properties

|            |                               |
|------------|-------------------------------|
| AAF332-005 | data retention current        |
| AAF333-005 | data retention voltage        |
| AAF336-005 | standby current chip disabled |

### AAA070-001 03

#### Read only memory ICs

#### ROM

A set of read only memory ICs of which each memory can be described with the same group of data element types.

#### NOTE

READ ONLY MEMORY ICs are memories in which the content is intended to be read only and not to be altered during normal operation.

### Properties

|            |                     |
|------------|---------------------|
| AAF235-005 | virginity state     |
| AAF236-005 | ROM programmability |
| AAF237-005 | programming current |
| AAF238-005 | programming voltage |

### AAA071-001 02

#### Registers

#### REGI

A set of registers of which each register can be described with the same group of data element types.

#### NOTE

REGISTERS are one-dimensional arrangements of bistable circuits by means of which information may be accepted, stored, and retrieved. (derivation)

### Properties

|            |                         |
|------------|-------------------------|
| AAF211-005 | maximum clock frequency |
| AAF234-005 | register type           |

### AAA072-001 03

#### Analogue/digital signal functions AD

A set of analogue/digital signal function ICs of which each function can be described with the same group of data element types.

#### NOTE

ANALOGUE / DIGITAL SIGNAL FUNCTIONS indicate functions which involve analogue signals as well as digital signals.

### Properties

|            |             |
|------------|-------------|
| AAE788-005 | AD function |
|------------|-------------|

### AAA073-001 02

#### Periodic/dc functions PER

A set of periodic/dc functions of which each function can be described with the same group of data element types.

#### NOTE

PERIODIC / DC FUNCTIONS indicate either periodic signals : signals  $f(x)$  of a real or complex variable with period  $T$  if  $f(x+T)=f(x)$  for every value of  $x$ ; or dc signals : signals whose electric current flows in one direction only, as opposed to alternating current signal.

### Properties

|            |                      |
|------------|----------------------|
| AAE789-005 | periodic/dc function |
|------------|----------------------|

### AAA074-002 01

#### Inductors

#### IND

A set of inductors of which each inductor can be described with the same group of data element types.

#### NOTE

INDUCTORS are devices consisting of one or more associated windings, with or without a magnetic core, for introducing inductance into an electric circuit.

### Properties

|            |                          |
|------------|--------------------------|
| AAE262-005 | encapsulation technology |
| AAE517-005 | inductance               |
| AAE518-005 | quality factor           |
| AAE755-005 | impedance                |
| AAE756-005 | impedance decrease       |
| AAE758-005 | frequency at $Z_{max}$   |
| AAF052-005 | resonance frequency      |
| AAF090-005 | dc resistance            |
| AAF103-005 | current dc               |
| AAF151-005 | adjustability type       |
| AAJ076-001 | inductance tolerance (%) |
| AAJ077-001 | inductance tolerance     |

**AAE003-006 adjustability type****Subclasses**

AAA601-001 Fixed inductors  
 AAA602-001 Variable inductors

**AAA075-001 02****Lamps****LAM**

A set of lamps of which each lamp can be described with the same group of data element types.

**NOTE**

LAMPS are sources made in order to produce an optical radiation, usually visible.

**Properties**

AAE519-005 nominal voltage  
 AAE521-005 nominal current  
 AAE522-005 mounting-cap code

**AAA076-001 02****Liquid crystal displays****LCD**

A set of liquid crystal displays of which each display can be described with the same group of data element types.

**NOTE**

LIQUID CRYSTAL DISPLAYS are displays made of material whose reflectance or transmittance changes when an electric field is applied.

**Properties**

AAE839-005 driving method  
 AAE840-005 quality grade  
 AAE843-005 dc voltage component  
 AAE844-005 drive frequency  
 AAE845-005 specific current consumption  
 AAE846-005 turn-on time  
 AAE847-005 turn-off time  
 AAE848-005 contrast ratio  
 AAE849-005 display construction  
 AAE850-005 character length  
 AAE851-005 character height  
 AAE852-005 dot length  
 AAE853-005 dot height  
 AAE854-005 viewing area length  
 AAE855-005 viewing area height  
 AAE856-005 illumination mode  
 AAE984-005 digit height  
 AAE985-005 connection method  
 AAE986-005 dot spacing  
 AAE989-005 backlight  
 AAE990-005 specific capacitance  
 AAE991-005 preferred viewing direction  
 AAE992-005 operating voltage  
 AAF145-005 digit length

**AAA077-001 02****Optoelectronic devices****OPT**

A set of optoelectronic devices of which each device can be described with the same group of data element types.

**NOTE**

OPTOELECTRONIC DEVICES are semiconductor devices that emit or detect or that are responsive to coherent or non-coherent optical radiation or that utilise such radiation for their internal purposes.

**Properties**

AAE276-005 reverse current  
 AAE277-005 reverse voltage  
 AAE279-005 forward voltage  
 AAE336-005 mounting base temperature  
 AAE337-005 junction temperature  
 AAE405-005 collector current (dc) max  
 AAE496-005 diode capacitance  
 AAE546-005 forward current limit  
 AAE816-005 optoelectronic package

**AAE545-006 optoelectronic device function****Subclasses**

AAA078-001 Photocouplers  
 AAA079-001 Photoemitters  
 AAA083-001 Photosensors  
 AAA597-001 Image pickup devices

**AAA078-001 02****Photocouplers****PHC**

A set of photocouplers of which each photocoupler can be described with the same group of data element types.

**NOTE**

PHOTOCOUPPLERS are semiconductor optoelectronic devices designed for the transfer of electric signals by utilizing radiant energy to provide coupling with electrical isolation between the input and the output.

**Properties**

AAE548-005 current transfer ratio  
 AAE550-005 isolation voltage min  
 AAE551-005 collector-emitter sat voltage  
 AAE553-005 turn-off time  
 AAE554-005 turn-on time  
 AAF066-005 collector-emitter breakdown voltage  
 AAF140-005 collector current light  
 AAF141-005 cut-off current dark I<sub>CEO</sub>  
 AAF142-005 cut-off current dark I<sub>CBO</sub>

**AAA079-001 02****Photoemitters****PHE**

A set of photoemitters of which each photoemitter can be described with the same group of data element types.

**NOTE**

PHOTOEMITTERS are semiconductor optoelectronic devices that directly convert electric energy into optical radiant energy.

### Properties

AAE556-005 wavelength at peak emission  
AAE557-005 spectral bandwidth  
AAE558-005 beamwidth between 50 % values  
AAE563-005 LED crystal material

### AAE555-005 photoemitter function

#### Subclasses

AAA080-001 Light emitting diodes  
AAA081-001 Infrared light emitting diodes  
AAA082-001 Lasers

### AAA080-001 02

#### Light emitting diodes LED

A set of light emitting diodes of which each diode can be described with the same group of data element types.

#### NOTE

LIGHT EMITTING DIODES are semiconductor diodes, other than semiconductor lasers, capable of emitting visible radiation when excited by an electric current.

#### Properties

AAE560-005 package colour  
AAE562-005 luminous intensity class  
AAE564-005 LED light colour  
AAE565-005 luminous intensity

### AAA081-001 02

#### Infrared light emitting diodes IRD

A set of infrared light emitting diodes of which each emitting diode can be described with the same group of data element types.

#### NOTE

INFRARED LIGHT EMITTING DIODES are semiconductor diodes, other than semiconductor lasers, capable of emitting infrared radiation when excited by an electric current.

#### Properties

AAE560-005 package colour  
AAE564-005 LED light colour  
AAF064-005 radiant intensity  
AAF065-005 total radiant output power

### AAA082-001 02

#### Lasers LAS

A set of lasers of which each laser can be described with the same group of data element types.

#### NOTE

LASERS are semiconductor diodes that emit coherent optical radiation through stimulated emission resulting from the recombination of free electrons and holes when excited by an electric

current that exceeds the threshold current of the diode.

### Properties

AAE561-005 radiant output power

### AAA083-001 02

#### Photosensors

#### PHS

A set of photosensors of which each photosensor can be described with the same group of data element types.

#### NOTE

PHOTOSENSORS are semiconductor devices that utilise the photoelectric effect for detection of optical radiation.

#### Properties

AAE557-005 spectral bandwidth  
AAE558-005 beamwidth between 50 % values  
AAE567-005 spectral sensitivity  
AAE568-005 wavelength at peak response  
AAF138-005 collector current light  
AAF139-005 collector cut-off current dark  
AAF143-005 reverse current light  
AAF144-005 reverse current dark

### AAE566-005 radiation type

#### Subclasses

AAA084-001 Infrared light photosensors  
AAA085-001 Ultraviolet light photosensors  
AAA086-001 Visible light photosensors

### AAA084-001 02

#### Infrared light photosensors IR

A set of infrared light photosensors of which each sensor can be described with the same group of data element types.

#### NOTE

INFRARED LIGHT PHOTOSENSORS are photosensors operating with an optical radiation for which the wavelengths are longer than those for visible radiation.

#### Properties

AAE571-005 responsivity  
AAE572-005 equivalent noise irradiation  
AAE573-005 spectral response lower limit  
AAE574-005 spectral response upper limit  
AAE575-005 element separation  
AAE576-005 element length  
AAE577-005 element breadth

**AAA085-001 02****Ultraviolet light photosensors UV**

A set of ultraviolet light sensors of which each sensor can be described with the same group of data element types.

**NOTE**

ULTRAVIOLET LIGHT PHOTSENSORS are photosensors operating with an optical radiation for which the wavelengths are shorter than those for visible radiation.

**AAA086-001 02****Visible light photosensors VIS**

A set of visible light photosensors of which each photosensor can be described with the same group of data element types.

**NOTE**

VISIBLE LIGHT PHOTSENSORS are photosensors operating with any optical radiation capable of causing a visual sensation directly.

**AAA087-001 02****Oscillators OSC**

A set of oscillators of which each oscillator can be described with the same group of data element types.

**NOTE**

OSCILLATORS are active devices producing a periodic quantity whose fundamental frequency is determined by the characteristics of the device.

**AAA088-001 02****Piezoelectric devices PE**

A set of piezoelectric devices of which each device can be described with the same group of data element types.

**NOTE**

PIEZOELECTRIC DEVICES are components that operate by the piezoelectric effect, i.e. electric polarisation caused by mechanical strain or conversely. (derivation)

**AAA089-002 02****Resistors RES**

A set of resistors of which each resistor can be described with the same group of data element types.

**NOTE**

RESISTORS are devices used because of their primary property of resistance.

**Properties**

|            |                               |
|------------|-------------------------------|
| AAE010-005 | climatic category             |
| AAE030-005 | E series                      |
| AAE118-005 | limiting element voltage (dc) |
| AAE635-001 | resistor package              |
| AAF097-005 | stability after test          |
| AAF100-005 | resistance tolerance          |
| AAF281-005 | limiting element voltage (ac) |
| AAJ010-001 | rated voltage                 |

**AAE003-006 adjustability type****Subclasses**

|            |                    |
|------------|--------------------|
| AAA090-001 | Fixed resistors    |
| AAA100-003 | Variable resistors |

**AAA090-002 02****Fixed resistors****FIX**

A set of fixed resistors of which each resistor can be described with the same group of data element types.

**NOTE**

FIXED RESISTORS are resistors designed so that their main property cannot be varied by mechanically changing the spatial relationship of their parts.

**Properties**

|            |                             |
|------------|-----------------------------|
| AAE115-005 | maximum surface temperature |
| AAF266-005 | inductance level            |
| AAF349-001 | insulation resistance       |
| AAF350-001 | temperature coefficient     |

**AAE114-007 linearity of a fixed resistor****Subclasses**

|            |                            |
|------------|----------------------------|
| AAA091-001 | Fixed linear resistors     |
| AAA094-001 | Fixed non-linear resistors |

**AAA091-002 02****Fixed linear resistors****LIN**

A set of fixed linear resistors of which each resistor can be described with the same group of data element types.

**NOTE**

FIXED LINEAR RESISTORS are fixed resistors in which the voltage across the terminals is proportional to the current passing through it.

**Properties**

|            |                         |
|------------|-------------------------|
| AAE113-005 | temperature coefficient |
| AAE116-005 | resistive material      |
| AAE119-005 | resistance              |
| AAE621-005 | resistor noise index    |
| AAF463-001 | toleranced resistance   |



## AAF101-006 multiplicity

### Subclasses

- AAA092-001 Single linear resistors
- AAA093-002 Linear resistor networks

## AAA092-001 02

### Single linear resistors SIN

A set of single linear resistors of which each resistor can be described with the same group of data element types.

#### NOTE

SINGLE LINEAR RESISTORS are linear resistors of which each device contains only one linear resistor.

## AAJ003-001 single resistor type

### Su-classes

- AAA509-001 Fixed precision resistors
- AAA510-001 Fixed power resistors
- AAA511-001 Fixed low-power resistors
- AAA512-001 Fixed chip resistors
- AAA513-001 Fixed thermostat resistors
- AAA514-001 Fixed fusing resistors

## AAA093-002 01

### Linear resistor networks MUL

A set of linear resistor networks of which each resistor network can be described with the same group of data element types.

#### NOTE

LINEAR RESISTORS NETWORKS are linear resistors of which each device consists of, includes, or involves more than one linear resistor.

### Properties

- AAE106-005 number of functions
- AAF102-005 resistor interconnection

## AAA094-001 02

### Fixed non-linear resistors NLN

A set of fixed non-linear resistors of which each resistor can be described with the same group of data element types.

#### NOTE

FIXED NON-LINEAR RESISTORS are fixed resistors in which the voltage across the terminals is not proportional to the current passing through it. [IEC 60050(811-27-16) (1991)]

## AAE122-005 resistance dependency

### Subclasses

- AAA095-001 Light dependent resistors
- AAA096-002 Temperature dependent resistor
- AAA099-001 Voltage dependent resistors

## AAA095-001 02

### Light dependent resistors LDR

A set of light dependent resistors of which each resistor can be described with the same group of data element types.

#### NOTE

LIGHT DEPENDENT RESISTORS are resistors of which the resistance value decreases when it is exposed to electromagnetic radiation (usually in the visible region of the spectrum).

### Properties

- AAE123-005 dark resistance
- AAE124-005 light resistance
- AAE617-005 LDR recovery rate

## AAA096-002 01

### Temperature dependent resistor TDR

A set of temperature dependent resistors of which each resistor can be described with the same group of data element types.

#### NOTE

TEMPERATURE DEPENDENT RESISTORS are resistors of which the resistance value changes when the temperature is changed.

### Properties

- AAE127-005 resistance at 25 Cel
- AAE130-005 dissipation factor
- AAE131-005 thermal time constant
- AAE625-005 thermistor current
- AAJ073-001 thermal time-constant (power)

## AAE126-005 thermistor type

### Subclasses

- AAA097-001 NTC thermistors
- AAA098-002 PTC thermistors

## AAA097-001 02

### NTC thermistors NTC

A set of NTC thermistors of which each thermistor can be described with the same group of data element types.

#### NOTE

NTC THERMISTORS are thermistor in which the zero-power resistance decreases with increasing temperature.

### Properties

- AAE132-005 thermal sensitivity index B25/85
- AAE616-005 thermal sensitivity index B25/75
- AAF282-005 thermal sensitivity tolerance

**AAA098-002 01****PTC thermistors****PTC**

A set of PTC thermistors of which each thermistor can be described with the same group of data element types.

**NOTE**

PTC THERMISTORS are thermistors which show a significant increase in zero-power resistance with increasing temperature over part of their operating temperature range.

**Properties**

|            |                           |
|------------|---------------------------|
| AAE135-005 | heat capacity             |
| AAE136-005 | trip current              |
| AAE137-005 | non-trip current          |
| AAE138-005 | switching temperature     |
| AAE618-005 | PTC application           |
| AAE619-005 | PTC peak inrush current   |
| AAE620-005 | PTC peak current          |
| AAE626-005 | PTC switching resistance  |
| AAE629-005 | PTC residual current      |
| AAJ060-001 | rated voltage             |
| AAJ061-001 | maximum operating voltage |
| AAJ062-001 | maximum current           |
| AAJ063-001 | power consumption         |

**AAA099-001 02****Voltage dependent resistors****VDR**

A set of voltage dependent resistors of which each resistor can be described with the same group of data element types.

**NOTE**

VOLTAGE DEPENDENT RESISTORS are resistors of which the resistance value has a very large variation depending on the applied voltage.

**Properties**

|            |                               |
|------------|-------------------------------|
| AAE298-005 | non-rep varistor peak current |
| AAE319-005 | maximum clamping voltage      |
| AAE334-005 | varistor voltage at 1 mA      |
| AAE429-005 | varistor capacitance          |
| AAE430-005 | energy absorbing capacity max |

**AAA100-003 01****Variable resistors****VAR**

A set of variable resistors of which each resistor can be described with the same group of data element types.

**NOTE**

VARIABLE RESISTORS are resistors designed so that their main property can be varied by mechanically changing the spatial relationship of their parts.

**Properties**

|            |                         |
|------------|-------------------------|
| AAE113-005 | temperature coefficient |
| AAE116-005 | resistive material      |
| AAE119-005 | resistance              |

|            |                   |
|------------|-------------------|
| AAE146-005 | ganging tolerance |
| AAE172-005 | ganging number    |

**AAE139-005 number of terminals****Subclasses**

|            |                                 |
|------------|---------------------------------|
| AAA101-001 | Two-terminal variable resistors |
| AAA102-002 | Potentiometers                  |

**AAA101-001 02****Two-terminal variable resistors****TT**

A set of two-terminal variable resistors of which each resistor can be described with the same group of data element types.

**NOTE**

TWO-TERMINAL VARIABLE RESISTORS are variable resistors having one moving contact and one fixed termination (for example a rheostat), distinguishing them from other variable resistors with at least three terminations (potentiometers).

**AAA102-002 01****Potentiometers****POT**

A set of potentiometers of which each potentiometer can be described with the same group of data element types.

**NOTE**

POTENTIOMETERS are components for use as voltage dividers with three terminations of which two are connected to the ends of a resistive element and the third to a moving contact which can be moved mechanically along the resistive element.

**Properties**

|            |                      |
|------------|----------------------|
| AAE141-005 | resistance law (IEC) |
| AAE142-005 | actuator type        |
| AAE144-005 | mounting position    |
| AAF014-005 | driving feature      |

**AAJ006-002 adjustability type****Subclasses**

|            |                                 |
|------------|---------------------------------|
| AAA607-001 | Rotary precision potentiometers |
| AAA608-001 | Power rotary potentiometers     |
| AAA609-001 | Low-power rotary potentiometers |
| AAA516-002 | Preset potentiometers           |
| AAA517-001 | Slide potentiometers            |

**AAA103-001 02****Sensors****SEN**

A set of sensors of which each sensor can be described with the same group of data element types.

**NOTE**

SENSORS are electric signal transducers that convert a signal of any kind into an electric signal.

## Properties

AAE893-005 sensor working principle

## AAE892-005 sensor input quantity

### Subclasses

AAA104-001 Humidity sensors  
AAA105-001 Light sensors  
AAA106-001 Magnetic field sensors  
AAA107-001 Nuclear sensors  
AAA108-001 Pressure sensors  
AAA109-001 Proximity sensors  
AAA110-001 Temperature sensors

## AAA104-001 02

### Humidity sensors

**HUM**

A set humidity sensors of which each sensor can be described with the same group of data element types.

### NOTE

HUMIDITY SENSORS are sensors operating on humidity, i.e. mass of water vapour divided by the volume of the gaseous mixture. Actual humidity by volume, divided by humidity by volume at saturation, at the same temperature.

### Properties

AAE857-005 operating humidity  
AAE858-005 storage humidity  
AAE860-005 reference capacitance  
AAE861-005 sensitivity

## AAA105-001 02

### Light sensors

**LGT**

A set of light sensors of which each sensor can be described with the same group of data element types.

### NOTE

LIGHT SENSORS are sensors operating on light; i.e. any optical radiation capable of causing a visual sensation directly.

## AAA106-001 02

### Magnetic field sensors

**MGN**

A set of magnetic field sensors of which each sensor can be described with the same group of data element types.

### NOTE

MAGNETIC FIELD SENSORS are sensors operating on magnetic fields.

### Properties

AAE862-005 open-circuit sensitivity  
AAE863-005 magnetic field strength

## AAA107-001 02

### Nuclear sensors

**NCL**

A set of nuclear sensors of which each sensor can be described with the same group of data element types.

### NOTE

NUCLEAR SENSORS are sensors operating on radiation released during reactions taking place in atomic nuclei.

## AAA108-001

**02**

### Pressure sensors

**PRS**

A set of pressure sensors of which each sensor can be described with the same group of data element types.

### NOTE

PRESSURE SENSORS are sensors operating on pressure; i.e. force divided by area.

### Properties

AAE864-005 pressure mode  
AAE865-005 sensitivity  
AAE866-005 operating pressure

## AAA109-001 02

### Proximity sensors

**PRX**

A set of proximity sensors of which each sensor can be described with the same group of data element types.

### NOTE

PROXIMITY SENSORS are sensors operating on proximity, i.e. nearness in space.

### Properties

AAE867-005 output current  
AAE868-005 substrate temperature  
AAE869-005 hysteresis in switching distance  
AAE870-005 substrate length  
AAE871-005 substrate width  
AAE872-005 operating frequency

## AAA110-001 02

### Temperature sensors

**TMP**

A set of temperature sensors of which each sensor can be described with the same group of data element types.

### NOTE

TEMPERATURE SENSORS are sensors operating on temperature, i.e. intensity of heat.

### Properties

AAE874-005 reference resistance  
AAE875-005 resistance ratio  $R_{Tamb}/R_{Tref}$   
AAE876-005 temperature coefficient



**AAA111-001 02****Transformers****TFM**

A set of transformers of which each transformer can be described with the same group of data element types.

**NOTE**

TRANSFORMERS are static pieces of apparatus with two or more windings which, by electromagnetic induction, transforms a system of alternating voltage and current into another voltage and current usually of different values at the same frequency.

**Properties**

AAE151-005 winding configuration  
AAE155-005 insulation resistance  
AAF047-005 screening  
AAF090-005 dc resistance

**AAE152-005 power/signal****Subclasses**

AAA112-001 Power transformers  
AAA115-002 Signal transformers

**AAA112-001 02****Power transformers****POW**

A set of power transformers of which each transformer can be described with the same group of data element types.

**NOTE**

POWER TRANSFORMERS are transformers designed for the purpose of handling energy.

**Properties**

AAE158-005 clearance to earth  
AAE159-005 creepage distance  
AAE160-005 nominal output current  
AAE163-005 input voltage  
AAE165-005 output power  
AAE166-005 operating frequency  
AAF048-005 number of primary coils  
AAF098-005 power transformer application  
AAF099-005 number of secondary coils

**AAE003-006 adjustability type****Subclasses**

AAA113-001 Fixed power transformers  
AAA114-001 Variable power transformers

**AAA113-001 02****Fixed power transformers****FIX**

A set of fixed power transformers of which each transformer can be described with the same group of data element types.

**NOTE**

FIXED POWER TRANSFORMERS are power transformers designed so that their main property cannot be changed by the spatial relationship of their parts.

**Properties**

AAE164-005 no-load output voltage

**AAA114-001 02****Variable power transformers****VAR**

A set of variable power transformers of which each transformer can be described with the same group of data element types.

**NOTE**

VARIABLE POWER TRANSFORMERS are power transformers designed so that their main property can be varied by mechanically changing the spatial relationship of their parts.

**Properties**

AAE167-005 transformer model  
AAE168-005 maximum output current  
AAE169-005 output voltage  
AAE170-005 brush life  
AAE171-005 brush life expectation  
AAE172-005 ganging number  
AAE173-005 total mechanical rotation

**AAA115-002 01****Signal transformers****SIG**

A set of signal transformers of which each transformer can be described with the same group of data element types.

**NOTE**

SIGNAL TRANSFORMERS are transformers designed for the purpose of handling a signal.

**Properties**

AAE156-005 upper frequency  
AAE157-005 lower frequency  
AAJ075-001 signal transformer type

**AAE003-006 adjustability type****Subclasses**

AAA116-001 Fixed signal transformers  
AAA117-001 Variable signal transformers

**AAA116-001 02****Fixed signal transformers****FIX**

A set of fixed signal transformers of which each transformer can be described with the same group of data element types.

**NOTE**

FIXED SIGNAL TRANSFORMERS are signal transformers designed so that their main property cannot be changed by the spatial relationship of their parts.

## AAA117-001 02

### Variable signal transformers VAR

A set of variable signal transformers of which each transformer can be described with the same group of data element types.

#### NOTE

VARIABLE SIGNAL TRANSFORMERS are signal transformers designed so that their main property can be varied by mechanically changing the spatial relationship of their parts.

## AAA118-001 02

### Transistors TRA

A set of transistors of which each transistor can be described with the same group of data element types.

#### NOTE

TRANSISTORS are semiconductor devices capable of providing power amplification and having three or more terminals.

#### Properties

AAE337-005 junction temperature  
AAE487-005 frequency band  
AAE490-005 modulation method  
AAE494-005 nearest conventional type  
AAE637-005 transistor package  
AAE968-005 complementary type  
AAF275-002 junction stress temperature

### AAE401-005 transistor technology

#### Subclasses

AAA119-001 Bipolar transistors  
AAA126-001 Field-effect transistors

## AAA119-002 02

### Bipolar transistors BIP

A set of bipolar transistors of which each transistor can be described with the same group of data element types.

#### NOTE

BIPOLAR TRANSISTORS are transistors having at least two junctions and whose functioning depends on both minority carriers and majority carriers (of opposite electric charge).

#### Properties

AAE402-005 dc current gain  
AAE405-005 collector current (dc) max  
AAE407-005 collector current peak value  
AAE413-005 collector-emitter voltage  $V_{CE}$   
AAE414-005 collector-emitter voltage  $V_{CE}$   
AAE415-005 collector-emitter peak voltage  
AAE416-005 collector-emitter sat voltage  
AAE417-005 collector-base voltage  $V_{CBO}$   
AAE420-005 collector capacitance  
AAE421-005 feedback capacitance

AAE425-005 transition frequency  
AAE638-005 transistor polarity  
AAE640-005 collector current ratio  
AAE641-005 collector saturation current  
AAF066-005 collector-emitter breakdown voltage  
AAF109-005 collector cut-off current  $I_{CB}$   
AAF110-005 emitter cut-off current  $I_{EBO}$   
AAF112-005 emitter-base voltage  $V_{EBO}$   
AAF113-005 collector-emitter voltage  $V_{CE}$   
AAF114-005 base-emitter saturation voltage  
AAF115-005 collector cut-off current  $I_{CE}$   
AAF116-005 collector-base capacitance  
AAF117-005 emitter-base input capacitance

## AAE971-007 signal handling type

#### Subclasses

AAA120-001 Bipolar power transistors  
AAA123-001 Bipolar small signal transistors

## AAA120-002 02

### Bipolar power transistors POWT

A set of bipolar power transistors of which each transistor can be described with the same group of data element types.

#### NOTE

BIPOLAR POWER TRANSISTORS are bipolar transistors, designed for power-signal applications, having a thermal resistance between junction and mounting base of 15 K/W or less.

#### Properties

AAE336-005 mounting base temperature  
AAE422-005 output power  
AAE424-005 power gain

### AAF146-005 frequency application

#### Subclasses

AAA121-001 Bipolar lf power transistors  
AAA122-001 Bipolar rf power transistors

## AAA121-001 02

### Bipolar LF power transistors LF

A set of bipolar LF power transistors of which each transistor can be described with the same group of data element types.

#### NOTE

BIPOLAR LF POWER TRANSISTORS are bipolar power transistors designed for use with baseband unmodulated signals, for example audio, video and switching signals.

#### Properties

AAF055-005 delay (off) time  
AAF056-005 delay (on) time  
AAF057-005 fall time  
AAF058-005 rise time  
AAF059-005 turn-off time  
AAF060-005 turn-on time

**AAA122-001 02****Bipolar RF power transistors RF**

A set of bipolar RF power transistors of which each transistor can be described with the same group of data element types.

**NOTE**

BIPOLAR RF POWER TRANSISTORS are bipolar power transistors designed for use with signals modulated on a radio-frequency carrier.

**Properties**

AAE707-005 peak envelope power PEP  
AAE711-005 intermodulation distortion d<sub>im</sub>  
AAE712-005 intermodulation distortion d<sub>3</sub>  
AAE714-005 synchronous output power  
AAE715-005 efficiency

**AAA123-002 02****Bipolar small signal transisto SIGT**

A set of bipolar small-signal transistors of which each transistor can be described with the same group of data element types.

**NOTE**

BIPOLAR SMALL SIGNAL TRANSISTORS are bipolar transistors, designed for small-signal applications, having a thermal resistance between junction and mounting base of more than 15 K/W.

**Properties**

AAE106-005 number of functions  
AAE410-005 small-signal current gain  
AAE418-005 difference base-emitter voltage  
AAE426-005 cut-off frequency  
AAE642-005 differential current change  
AAE644-005 differential voltage change  
AAE647-005 average noise figure  
AAE648-005 spot noise figure

**AAF146-005 frequency application****Subclasses**

AAA124-001 Bipolar lf small signal transi  
AAA125-001 Bipolar rf small signal transi

**AAA124-001 02****Bipolar LF small signal transistors LF**

A set of bipolar LF small-signal transistors of which each transistor can be described with the same group of data element types.

**NOTE**

BIPOLAR LF SMALL SIGNAL TRANSISTORS are bipolar small signal transistors designed for use with baseband unmodulated signals, for example audio, video and switching signals.

**Properties**

AAF055-005 delay (off) time

AAF056-005 delay (on) time  
AAF057-005 fall time  
AAF058-005 rise time  
AAF059-005 turn-off time  
AAF060-005 turn-on time

**AAA125-001 02****Bipolar RF small signal transistors RF**

A set of bipolar RF small-signal transistors of which each transistor can be described with the same group of data element types.

**NOTE**

BIPOLAR RF SMALL SIGNAL TRANSISTORS are bipolar small signal transistors designed for use with signals modulated on a radio-frequency carrier.

**Properties**

AAE711-005 intermodulation distortion d<sub>im</sub>  
AAE712-005 intermodulation distortion d<sub>3</sub>  
AAE713-005 unilateral power gain

**AAA126-002 02****Field-effect transistors FET**

A set of field-effect transistors of which each transistor can be described with the same group of data element types.

**NOTE**

FIELD-EFFECT TRANSISTORS are transistors in which the current flowing through a conductor channel is controlled by an electric field arising from a voltage applied between the gate and source terminals.

**Properties**

AAE364-005 gate type  
AAE366-005 channel type  
AAE368-005 drain current (dc)  
AAE370-005 drain current (dc)  
AAE371-005 drain cut-off current  
AAE372-005 gate cut-off current  
AAE373-005 source cut-off current  
AAE374-005 common-mode rejection ratio  
AAE377-005 drain-source voltage limit  
AAE379-005 drain-substrate voltage limit  
AAE384-005 gate-source threshold voltage  
AAE386-005 gate-source cut-off voltage  
AAE387-005 source-substrate voltage limit  
AAE390-005 feedback capacitance  
AAE391-005 drain-source on-state resistance  
AAE393-005 drain-source on-state resistance  
AAE394-005 drain-source off-state resistance  
AAE396-005 transfer admittance  
AAE655-005 input capacitance at gate  
AAE656-005 transfer conductance  
AAE982-005 input capacitance  
AAE983-005 output capacitance  
AAF118-005 gate-source voltage limit

## **AAE971-007 signal handling type**

### **Subclasses**

AAA127-001 Field-effect power transistors  
AAA130-001 Field-effect small signal tran

## **AAA127-002 02**

### **Field-effect power transistors POWT**

A set of field-effect transistors of which each transistor can be described with the same group of data element types.

#### **NOTE**

FIELD-EFFECT POWER TRANSISTORS are field-effect transistors designed for power-signal applications, having a thermal resistance between junction and mounting base of 15 K/W or less.

#### **Properties**

AAE336-005 mounting base temperature

### **AAF146-005 frequency application**

#### **Subclasses**

AAA128-001 Field-effect lf power transistors  
AAA129-001 Field-effect rf power transistors

## **AAA128-001 02**

### **Field-effect LF power transistors LF**

A set of field-effect LF power transistors of which each transistor can be described with the same group of data element types.

#### **NOTE**

FIELD-EFFECT LF POWER TRANSISTORS are field-effect power transistors designed for use with baseband unmodulated signals, for example audio, video and switching signals.

#### **Properties**

AAE976-005 rise time  
AAE977-005 fall time  
AAE978-005 turn-on time  
AAE979-005 turn-off time  
AAE980-005 delay (on) time  
AAE981-005 delay (off) time

## **AAA129-001 02**

### **Field-effect RF power transist RF**

A set of field-effect RF power transistors of which each transistor can be described with the same group of data element types.

#### **NOTE**

FIELD-EFFECT RF POWER TRANSISTORS are field-effect transistors designed for use with signals modulated on a radio-frequency carrier.

## **AAA130-001 02**

### **Field-effect small signal transistors SIGT**

A set of field-effect small-signal transistors of which each transistor can be described with the same group of data element types.

#### **NOTE**

FIELD-EFFECT SMALL SIGNAL TRANSISTORS are field-effect transistors designed for small-signal applications, having a thermal resistance between junction and mounting base of more than 15 K/W.

#### **Properties**

AAE380-005 equivalent noise voltage  
AAE383-005 gate-source voltage difference  
AAE389-005 thermal drift gate-source voltage  
AAE657-005 spot noise figure  
AAE716-005 difference in penetration factor  
AAE717-005 difference in transfer impedance  
AAE973-005 FET-technology  
AAE976-005 rise time  
AAE977-005 fall time  
AAE978-005 turn-on time  
AAE979-005 turn-off time  
AAE980-005 delay (on) time  
AAE981-005 delay (off) time

## **AAA131-001 02**

### **Trigger devices**

### **TRG**

A set of trigger devices of which each device can be described with the same group of data element types.

#### **NOTE**

TRIGGER DEVICES are bistable semiconductor devices comprising three or more junctions which can be switched from the off-state to the on-state or vice versa.

#### **Properties**

AAE331-005 diode package  
AAE336-005 mounting base temperature  
AAE337-005 junction temperature  
AAF275-002 junction stress temperature

### **AAE724-005 trigger device function**

#### **Subclasses**

AAA132-001 Diacs  
AAA133-001 Thyristors  
AAA137-001 Triacs

**AAA132-001 02****Diacs****DIA**

A set of diacs of which each diac can be described with the same group of data element types.

**NOTE**

DIACS are bi-directional diode thyristors: two-terminal trigger devices having substantially the same behaviour in the first and third quadrants of the principal characteristic. IEC 60747-6 (2000)

**Properties**

AAE293-005 repetitive peak forward current  
AAE725-005 breakover voltage  
AAE726-005 output voltage

**AAA133-001 02****Thyristors****THY**

A set of thyristors of which each thyristor can be described with the same group of data element types.

**NOTE**

THYRISTORS are three-terminal trigger devices having a different behaviour in the first and third quadrants of the principal characteristic.

**Properties**

AAE276-005 reverse current  
AAE305-005 Joule-integral  
AAE728-005 rms on-state current  
AAE729-005 repetitive peak on-state current  
AAE730-005 non-rep peak on-state current  
AAE732-005 gate trigger current  
AAE738-005 off-state voltage  
AAE739-005 repetitive peak off-state voltage  
AAE740-005 rate of rise of off-state voltage  
AAE742-005 gate trigger voltage  
AAE744-005 average on-state current  
AAF135-005 off-state current  
AAF136-005 holding current  
AAF137-005 latching current

**AAE743-005 thyristor function****Subclasses**

AAA134-001 Fast turn-off thyristors  
AAA135-001 Gate turn-off thyristors  
AAA136-001 Reverse blocking thyristors

**AAA134-001 02****Fast turn-off thyristors****FTO**

A set of fast turn-off thyristors of which each thyristor can be described with the same group of data element types.

**NOTE**

FAST TURN-OFF THYRISTORS are thyristors in which the current may be turned on or off in times of the order of 1  $\mu$ s

**Properties**

AAE734-005 rate of rise on-state current  
AAE747-005 commutated turn-off time

**AAA135-001 02****Gate turn-off thyristors****GTO**

A set of gate turn-off thyristors of which each thyristor can be described with the same group of data element types.

**NOTE**

GATE TURN-OFF THYRISTORS are thyristors which can be switched from the on-state to the off-state and vice versa by applying control signals of appropriate polarity to the gate terminal.

**Properties**

AAE745-005 controllable anode current  
AAE746-005 fall time

**AAA136-001 02****Reverse blocking thyristors****RVB**

A set of reverse blocking thyristors of which each thyristor can be described with the same group of data element types.

**NOTE**

REVERSE BLOCKING THYRISTORS are unidirectional thyristors that switch for positive anode voltages and exhibit a reverse blocking state for negative anode voltages.

**Properties**

AAE300-005 repetitive peak reverse voltage  
AAE734-005 rate of rise on-state current  
AAE748-005 cathode-gate to cathode current  
AAE749-005 anode-gate to anode current  
AAE750-005 cathode-gate trigger voltage  
AAE751-005 anode-gate to anode voltage

**AAA137-001 02****Triacs****TRI**

A set of triacs of which each triac can be described with the same group of data element types.

**NOTE**

TRIACS are bi-directional triode thyristors: three-terminal trigger-devices having substantially the same switching behaviour in the first and third quadrants of behaviour in the first and third quadrants of the principal characteristic. [IEC 60747-6 (2000)]

**Properties**

AAE276-005 reverse current  
AAE305-005 Joule-integral  
AAE728-005 rms on-state current  
AAE729-005 repetitive peak on-state current  
AAE730-005 non-rep peak on-state current  
AAE732-005 gate trigger current



AAE734-005 rate of rise on-state current  
AAE738-005 off-state voltage  
AAE739-005 repetitive peak off-state voltage  
AAE740-005 rate of rise of off-state voltage  
AAE741-005 rate of rise commutating voltage  
AAE742-005 gate trigger voltage  
AAF135-005 off-state current  
AAF136-005 holding current  
AAF137-005 latching current

## AAA138-001 02

### Tubes

### TUB

A set of tubes of which each tube can be described with the same group of data element types.

#### NOTE

TUBES are electronic devices in which conduction takes place by electrons or ions between electrodes through a vacuum or gaseous medium within a gas tight envelope, but excluding devices used only for lighting. IEC 60050(531) (1974)

#### Properties

AAE579-005 heater voltage  
AAE580-005 heater current

## AAE696-005 tube type

### Subclasses

AAA139-001 Display tubes  
AAA142-001 Gas filled tubes  
AAA143-001 Photo sensitive tubes  
AAA144-001 Space charge controlled tubes  
AAA145-001 Space charge wave tubes

## AAA139-001 02

### Display tubes

### CRT

A set of display tubes of which each tube can be described with the same group of data element types.

#### NOTE

DISPLAY TUBES are signal-to-image converter tubes in which a well-defined and controllable beam of electrons is produced and directed on to a surface to give a visible or otherwise detectable display or effect. IEC 60050(531) (1974)

#### Properties

AAE581-005 overall length  
AAE588-005 deflection angle  
AAE589-005 neck diameter  
AAE590-005 anode voltage  
AAE592-005 screen diagonal  
AAE593-005 useful screen horizontal  
AAE594-005 useful screen vertical  
AAE595-005 tube size (cm)  
AAE596-005 glass transmission  
AAE598-005 base type  
AAE605-005 phosphor code  
AAE606-005 application code  
AAE804-005 screen curvature radius  
AAF203-005 anode current average

AAF204-005 anode current peak  
AAF205-005 vertical resolution  
AAF271-005 screen shape  
AAF272-005 tube size (inch)  
AAF315-005 anode voltage limiting

## AAF202-005 chromaticity

### Subclasses

AAA140-001 Colour display tubes  
AAA141-001 Monochrome display tubes

## AAA140-001 02

### Colour display tubes

### COL

A set of colour display tubes of which each tube can be described with the same group of data element types.

#### NOTE

COLOUR DISPLAY TUBES are display tubes which can produce images in colour by varying the relative intensity of excitation of three screen phosphors of different chromaticity.

#### Properties

AAE584-005 grid 2 voltage for cut-off  
AAE585-005 focusing voltage  
AAE591-005 cathode voltage for cut-off  
AAE805-005 pixel pitch horizontal  
AAE806-005 horizontal resolution  
AAF314-005 focusing voltage limiting

## AAA141-001 02

### Monochrome display tubes

### MCR

A set of monochrome display tubes of which each tube can be described with the same group of data element types.

#### NOTE

MONOCHROME DISPLAY TUBES are display tubes which can produce images of only one chromaticity, usually determined by a screen phosphor with a single pair of colour coordinates.

#### Properties

AAE578-005 grid 1 voltage for cut-off  
AAE586-005 focusing voltage  
AAE603-005 cathode voltage for cut-off  
AAF206-005 grid 2 voltage

## AAA142-001 02

### Gas filled tubes

### GAS

A set of gas filled tubes of which each tube can be described with the same group of data element types.

#### NOTE

GAS FILLED TUBES are electronic tubes in which the electrical characteristics are substantially established by the ionisation of deliberately introduced gas or vapour.

**AAA143-001 02****Photo sensitive tubes****PHO**

A set of photo sensitive tubes of which each tube can be described with the same group of data element types.

**NOTE**

PHOTO SENSITIVE TUBES are tubes the functioning of which is determined by the photoelectric effect.

**AAA144-001 02****Space charge controlled tubes****SCC**

A set of space charge control tubes of which each tube can be described with the same group of data element types.

**NOTE**

SPACE CHARGE CONTROLLED TUBES are electronic tubes whose mode of operation is based on the control of space-charge-limited current by electrode voltages.

**AAA145-001 02****Space charge wave tubes****SCW**

A set of space charge wave tubes of which each tube can be described with the same group of data element types.

**NOTE**

SPACE CHARGE WAVE TUBES are vacuum tubes the functioning of which is based on the conversion of energy by interaction of electromagnetic fields with space-charge waves of an electron beam.

**AAA146-001 02****Tuners****TUN**

A set of tuners of which each tuner can be described with the same group of data element types.

**NOTE**

TUNERS are packaged units capable of producing only the first portion of the functions of a receiver and delivering either radio-frequency, intermediate-frequency, or demodulated information to some other equipment.

**AAA147-002 02****Electromechanical components****EM**

A set of electromechanical components of which each component can be described with the same group of data element types.

**NOTE**

ELECTROMECHANICAL COMPONENTS are components utilizing electromagnetic energy of which the operation involves mechanical motion.

**Properties**

|            |                                |
|------------|--------------------------------|
| AAE007-005 | terminal shape                 |
| AAE008-005 | terminal placement             |
| AAE023-005 | terminal diameter              |
| AAE024-005 | terminal pitch                 |
| AAE027-005 | mounted height                 |
| AAE072-005 | terminal length                |
| AAE149-005 | safety approval                |
| AAE257-005 | power dissipation              |
| AAE259-005 | shape size code BSI            |
| AAE347-005 | CECC Specification             |
| AAE540-005 | current rms                    |
| AAE632-005 | lacquered length               |
| AAE634-005 | terminal material              |
| AAE754-005 | number of terminals            |
| AAE785-005 | signal type                    |
| AAE841-005 | storage temperature            |
| AAE891-005 | ambient temperature            |
| AAE987-005 | power consumption              |
| AAF316-001 | hole pitch                     |
| AAF317-001 | flange length                  |
| AAF319-001 | flange height                  |
| AAF320-001 | body diameter                  |
| AAF321-001 | pitch (x-axis)                 |
| AAF322-001 | pitch (y-axis)                 |
| AAF337-001 | pitch circle diameter          |
| AAF338-001 | terminal breadth               |
| AAF339-001 | terminal thickness             |
| AAF340-001 | offset (y-axis)                |
| AAF341-001 | offset (x-axis)                |
| AAF342-001 | flange diameter                |
| AAF343-001 | mounting method                |
| AAF344-001 | body shape                     |
| AAF345-001 | terminal exit position SMD     |
| AAF346-001 | terminal exit position non-SMD |
| AAF347-001 | terminal shape non-SMD         |
| AAF348-001 | terminal shape SMD             |
| AAF351-001 | number of holes                |
| AAF352-001 | basic aspect                   |
| AAF373-001 | number of studs                |
| AAF374-001 | number of pitches (x-axis)     |
| AAF375-001 | number of pitches (y-axis)     |
| AAF376-001 | terminal cross-section shape   |

**AAE060-005 category EM component****Subclasses**

|            |                 |
|------------|-----------------|
| AAA148-001 | Connectors      |
| AAA610-001 | Connector parts |
| AAA149-002 | Fuses           |
| AAA150-001 | Loudspeakers    |
| AAA159-001 | Microphones     |
| AAA160-001 | Motors          |
| AAA171-001 | Relays          |
| AAA172-001 | Switches        |



## AAA148-002 01

### Connectors

### CON

A set of connectors of which each connector can be described with the same group of data element types.

#### NOTE

CONNECTORS are components which terminate conductors for the purpose of providing connection and disconnection to a suitable mating component.

#### Properties

|            |                                |
|------------|--------------------------------|
| AAE155-005 | insulation resistance          |
| AAE159-005 | creepage distance              |
| AAE345-005 | female entry                   |
| AAE348-005 | pinning arrangement            |
| AAE350-005 | contact finish                 |
| AAE351-006 | housing material               |
| AAE352-005 | terminal-to-contact angle      |
| AAE353-005 | contact sex                    |
| AAE354-005 | polarisation                   |
| AAE355-005 | contact body material          |
| AAE356-005 | connector shape                |
| AAE357-005 | performance class              |
| AAE358-005 | contact current max            |
| AAE359-005 | number of contacts             |
| AAE360-005 | number of rows                 |
| AAE361-005 | mechanical endurance           |
| AAE362-005 | connector opening              |
| AAE363-005 | contact length under housing   |
| AAE920-005 | contact resistance             |
| AAF045-005 | engaging force                 |
| AAF046-005 | separating force               |
| AAF051-005 | locking device                 |
| AAF053-005 | terminal length beside housing |
| AAF124-005 | integrated component           |
| AAF125-005 | contact spring material        |
| AAF126-005 | UL flammability                |
| AAF127-005 | IEC flammability               |
| AAF128-005 | package colour                 |
| AAF148-005 | socket type                    |
| AAF150-005 | number of contacts per row     |
| AAF434-001 | bending radius                 |
| AAJ037-001 | termination style              |
| AAJ038-001 | coupling style                 |
| AAJ039-001 | contact pitch                  |
| AAJ042-001 | connector rated voltage        |
| AAJ043-001 | connector rated current        |
| AAJ044-001 | connector diameter             |

### AAE349-006 connector type

#### Subclasses

|            |                         |
|------------|-------------------------|
| AAA518-001 | Circular connectors     |
| AAA519-001 | Rectangular connectors  |
| AAA520-001 | PCB connectors          |
| AAA521-001 | RF connectors           |
| AAA522-001 | Connectors for IC cards |
| AAA523-001 | Modular connectors      |
| AAA526-001 | Plugs and jacks         |
| AAA527-001 | Sockets                 |
| AAA528-001 | Terminals               |

## AAA149-002 01

### Fuses

### FUS

A set of fuses of which each fuse can be described with the same group of data element types.

#### NOTE

FUSES are devices that, by the fusing of one or more of their specially-designed and proportioned components, open the circuit in which they are inserted by breaking the current when this exceeds a given value for a sufficient time. The fuse comprises all the parts that form the complete device. IEC 60050(441) (1984)

#### Properties

|            |                         |
|------------|-------------------------|
| AAE519-005 | nominal voltage         |
| AAE523-005 | Joule-integral          |
| AAE524-005 | speed                   |
| AAE525-005 | rated current           |
| AAF122-005 | rated breaking capacity |
| AAF123-005 | voltage drop            |
| AAJ034-001 | fuse pre-arcing time    |

### AAJ012-002 fuse type

#### Subclasses

|            |                           |
|------------|---------------------------|
| AAA575-001 | Current-activated fuses   |
| AAA576-001 | Thermally-activated fuses |

## AAA150-001 02

### Loudspeakers

### LSP

A set of loudspeakers of which each loudspeaker can be described with the same group of data element types.

#### NOTE

LOUDSPEAKERS are transducers by which acoustic waves are obtained from electric oscillation waves and designed to radiate acoustic power into the surrounding medium.

#### Properties

|            |                                     |
|------------|-------------------------------------|
| AAE338-005 | maximum noise voltage               |
| AAE339-005 | upper rated frequency               |
| AAE340-005 | effective frequency f <sub>e2</sub> |
| AAE341-005 | effective frequency f <sub>e1</sub> |
| AAF090-005 | dc resistance                       |
| AAF193-005 | sensitivity                         |

### AAE005-006 transducer principle

#### Subclasses

|            |                               |
|------------|-------------------------------|
| AAA151-001 | Moving conductor loudspeakers |
| AAA152-001 | Magnetodynamic loudspeakers   |
| AAA153-001 | Ionic loudspeakers            |
| AAA154-001 | Electromagnetic loudspeakers  |
| AAA155-001 | Pneumatic loudspeakers        |
| AAA156-001 | Piezoelectric loudspeakers    |
| AAA157-001 | Electrostatic loudspeakers    |
| AAA158-001 | Magnetostrictive loudspeakers |

**AAA151-001 02****Moving conductor loudspeakers MVC**

A set of moving conductor loudspeakers of which each loudspeaker can be described with the same group of data element types.

**NOTE**

MOVING CONDUCTOR LOUDSPEAKERS are loudspeakers that operate by the motion of a conductor or a coil, carrying a varying current, in a steady magnetic field.

**Properties**

AAE048-005 maximum noise power  
AAE049-005 rated impedance  
AAE050-005 resonance frequency  
AAE051-005 centre pole diameter  
AAE053-005 magnet material  
AAE054-005 baffle hole length  
AAE055-005 frequency application  
AAE056-005 baffle hole breadth  
AAE061-005 shape of flange

**AAA152-001 02****Magnetodynamic loudspeakers MGD**

A set of magnetodynamic loudspeakers of which each loudspeaker can be described with the same group of data element types.

**NOTE**

MAGNETODYNAMIC LOUDSPEAKERS are loudspeakers that operate by the motion of a magnet attached to a diaphragm and activated by a current through a fixed coil.

**AAA153-001 02****Ionic loudspeakers ION**

A set of ionic loudspeakers of which each loudspeaker can be described with the same group of data element types.

**NOTE**

IONIC LOUDSPEAKERS are loudspeakers that operate by the interaction between an ionic plasma and the surrounding air.

**AAA154-001 02****Electromagnetic loudspeakers ELM**

A set of electromagnetic loudspeakers of which each loudspeaker can be described with the same group of data element types.

**NOTE**

ELECTROMAGNETIC LOUDSPEAKERS are loudspeakers that operate by the motion of a magnet, connected to the membrane, and actuated by a variable magnetic field.

**AAA155-001 02****Pneumatic loudspeakers PNM**

A set of pneumatic loudspeakers of which each loudspeaker can be described with the same group of data element types.

**NOTE**

PNEUMATIC LOUDSPEAKERS are loudspeakers that operate by controlled variations of an air stream.

**AAA156-001 02****Piezoelectric loudspeakers PXE**

A set of piezoelectric loudspeakers of which each loudspeaker can be described with the same group of data element types.

**NOTE**

PIEZOELECTRIC LOUDSPEAKERS are loudspeakers that operate by the piezoelectric properties of the material.

**AAA157-001 02****Electrostatic loudspeakers ELS**

A set of electrostatic loudspeakers of which each loudspeaker can be described with the same group of data element types.

**NOTE**

ELECTROSTATIC LOUDSPEAKERS are loudspeakers that operate by electrostatic forces.

**AAA158-001 02****Magnetostrictive loudspeakers MGS**

A set of magnetostriction loudspeakers of which each loudspeaker can be described with the same group of data element types.

**NOTE**

MAGNETOSTRICTIVE LOUDSPEAKERS are loudspeakers that operate by the magnetostrictive properties of a material.

**AAA159-001****02****Microphones****MIC**

A set of microphones of which each microphone can be described with the same group of data element types.

**NOTE**

MICROPHONES are electroacoustical transducers by which electric signals are obtained from acoustical oscillations.

**Properties**

AAE340-005 effective frequency  $f_{e2}$   
AAE341-005 effective frequency  $f_{e1}$   
AAE533-005 input impedance

## AAA160-001 02

### Motors

### MOT

A set of motors of which each motor can be described with the same group of data element types.

#### NOTE

MOTORS are (electric) machines which converts electric energy into mechanical energy.

#### Properties

AAE174-005 magnet type  
AAE175-005 coil connection  
AAE176-005 armature material  
AAE177-005 integrated component  
AAE180-005 electromotive force  
AAE182-005 input power  
AAE517-005 inductance  
AAF090-005 dc resistance  
AAF131-005 number of phases

### AAE179-005 trajectory of motion

#### Subclasses

AAA161-001 Linear motors  
AAA166-001 Rotational motors

## AAA161-001 02

### Linear motors

### LIN

A set of linear motors of which each motor can be described with the same group of data element types.

#### NOTE

LINEAR MOTORS are electric motors that have been split and unrolled into two flat sheets, so that the motion between rotor and stator is linear rather than rotary.

#### Properties

AAF049-005 speed  
AAF132-005 travel  
AAF133-005 rated force

### AAE178-005 supply current type

#### Subclasses

AAA162-001 Linear ac motors  
AAA163-001 Linear dc motors  
AAA164-001 Linear stepping motors  
AAA165-001 Linear universal motors

## AAA162-001 02

### Linear ac motors

### AC

A set of linear ac motors of which each motor can be described with the same group of data element types.

#### NOTE

LINEAR AC MOTORS are linear motors designed essentially for application with an alternating current or voltage.

#### Properties

AAE184-005 rated input voltage (ac)

## AAA163-001 02

### Linear dc motors

### DC

A set of linear dc motors of which each motor can be described with the same group of data element types.

#### NOTES

LINEAR DC MOTORS are linear motors designed essentially for application with a direct current or voltage.

#### Properties

AAE186-005 rated input voltage (dc)  
AAE187-005 mechanical time constant

## AAA164-001 02

### Linear stepping motors

### STP

A set of linear stepping motors of which each motor can be described with the same group of data element types.

#### NOTE

LINEAR STEPPING MOTORS are linear motors, the rotor of which rotates in angular increments when the stator windings are energised in a programmed manner.

#### Properties

AAE203-005 current per phase  
AAE204-005 rated input voltage (pulse)  
AAE205-005 pull-in rate  
AAE206-005 pull-out rate  
AAF061-005 step length  
AAF062-005 holding force

## AAA165-001 02

### Linear universal motors

### UNI

A set of linear universal motors of which each motor can be described with the same group of data element types.

#### NOTE

LINEAR UNIVERSAL MOTORS are linear motors which can be operated by either direct current or single phase alternating current of normal supply frequencies.

**AAA166-001 02****Rotational motors****ROT**

A set of rotational motors of which each motor can be described with the same group of data element types.

**NOTE**

ROTATIONAL MOTORS are motors characterized by, turning about an axis.

**Properties**

AAE188-005 direction of rotation  
AAE189-005 rotor inertia  
AAE190-005 maximum radial force  
AAE191-005 rated torque  
AAE200-005 maximum axial force

**AAE178-005 supply current type****Subclasses**

AAA167-001 Rotational ac motors  
AAA168-001 Rotational dc motors  
AAA169-001 Rotational stepping motors  
AAA170-001 Rotational universal motors

**AAA167-001 02****Rotational ac motors****AC**

A set of rotational ac motors of which each motor can be described with the same group of data element types.

**NOTE**

ROTATIONAL AC MOTORS are rotational motors designed essentially for application with an alternating current or voltage.

**Properties**

AAE183-005 ac motor synchronism  
AAE184-005 rated input voltage (ac)  
AAE194-005 synchronous speed  
AAE195-005 rated speed  
AAE196-005 starting torque

**AAA168-001 02****Rotational dc motors****DC**

A set of rotational dc motors of which each motor can be described with the same group of data element types.

**NOTE**

ROTATIONAL DC MOTORS are rotational motors designed essentially for application with a direct current or voltage.

**Properties**

AAE186-005 rated input voltage (dc)  
AAE187-005 mechanical time constant  
AAE195-005 rated speed  
AAE197-005 rated input current  
AAE199-005 starting torque

**AAA169-001 02****Rotational stepping motors****STP**

A set of rotational stepping motors of which each motor can be described with the same group of data element types.

**NOTE**

ROTATIONAL STEPPING MOTORS are rotational motors the rotor of which rotates in angular increments when the stator windings are energised in a programmed manner.

**Properties**

AAE201-005 pull-out torque  
AAE202-005 pull-in torque  
AAE204-005 rated input voltage (pulse)  
AAE205-005 pull-in rate  
AAE206-005 pull-out rate  
AAE207-005 holding torque  
AAE208-005 step angle

**AAA170-001 02****Rotational universal motors****UNI**

A set of rotational universal motors of which each motor can be described with the same group of data element types.

**NOTE**

ROTATIONAL UNIVERSAL MOTORS are rotational motors which can be operated by either direct current or single phase alternating current of normal supply frequencies.

**AAA171-001 02****Relays****REL**

A set of relays of which each relay can be described with the same group of data element types.

**NOTE**

RELAYS are (electric) devices designed to close or open one or more electric circuits by means of separate contacts, after the appearance of certain conditions in the electric input circuits controlling the device. [IEC 60050(446) (1983)]

**Properties**

AAE155-005 insulation resistance  
AAE350-005 contact finish  
AAE355-005 contact body material  
AAE506-005 switching function  
AAE508-005 sealing  
AAE509-005 U/I category  
AAE512-005 contact voltage (ac)  
AAE513-005 limiting contact voltage  
AAE515-005 contact current (ac)  
AAE907-005 stability  
AAE911-005 energising current (dc)  
AAE912-005 energising current (ac)  
AAE915-005 energising voltage (dc)  
AAE916-005 energising voltage (ac)

AAE918-005 coil-contact capacitance  
AAE919-005 contact capacitance  
AAE920-005 contact resistance  
AAE921-005 number of contact assemblies  
AAE922-005 mechanical life  
AAE923-005 operate time  
AAE924-005 release time  
AAE925-005 contact member force  
AAE928-005 contact power (ac)  
AAE930-005 bounce time  
AAF048-005 number of primary coils  
AAF050-005 release voltage (ac)  
AAF090-005 dc resistance  
AAF106-005 contact current (dc)  
AAF107-005 contact voltage (dc)  
AAF125-005 contact spring material  
AAF129-005 release voltage (dc)  
AAF130-005 contact power (dc)

## AAA172-001 02

### Switches

### SWI

A set of switches of which each switch can be described with the same group of data element types.

#### NOTE

SWITCHES are devices designed to close and open one or more electric circuits by means of separable contacts, under control of an external quantity. (derivation)

#### Properties

AAE155-005 insulation resistance  
AAE208-005 step angle  
AAE350-005 contact finish  
AAE351-006 housing material  
AAE355-005 contact body material  
AAE506-005 switching function  
AAE512-005 contact voltage (ac)  
AAE513-005 limiting contact voltage  
AAE515-005 contact current (ac)  
AAE920-005 contact resistance  
AAE921-005 number of contact assemblies  
AAE922-005 mechanical life  
AAE928-005 contact power (ac)  
AAE929-005 number of stable positions  
AAE930-005 bounce time  
AAF106-005 contact current (dc)  
AAF107-005 contact voltage (dc)  
AAF125-005 contact spring material  
AAF130-005 contact power (dc)  
AAF134-005 integrated function

## AAE926-005 actuating quantity

#### Subclasses

AAA173-001 Reed switches  
AAA174-002 Mechanical switches  
AAA175-001 Thermostatic switches

## AAA173-001 02

### Reed switches

### REE

A set of reed switches of which each switch can be described with the same group of data element types.

#### NOTE

REED SWITCHES are switches that have contacts mounted on ferromagnetic reeds (thin bars) sealed in a glass tube, designed for activation by an external magnetic field.

## AAA174-002 01

### Mechanical switches

### MEC

A set of mechanical switches of which each switch can be described with the same group of data element types.

#### NOTE

MECHANICAL SWITCHES are switches actuated by an external mechanical force.

#### Properties

AAE931-006 switch actuation  
AAE932-005 actuating force  
AAJ064-001 number of poles  
AAJ065-001 travel  
AAJ066-001 angular travel  
AAJ067-001 operating life  
AAJ068-001 shaft style  
AAJ069-001 shaft length  
AAJ070-001 shaft diameter  
AAJ071-001 additional features  
AAJ072-001 sealing

## AAA175-001 02

### Thermostatic switches

### THE

A set of thermostatic switches of which each switch can be described with the same group of data element types.

#### NOTE

THERMOSTATIC SWITCHES are switches whose function is controlled by variations of temperature and whose contacts make or break automatically a load circuit when the temperature of the ambient space in which their sensing element is placed or the temperature of the surface on which they are fixed reaches a predetermined value. [IEC 60050(581) (1978)]

## AAA215-001 02

### Magnetic parts

### MP

A set of magnetic parts of which each part can be described with the same group of data element types.

#### NOTE

MAGNETIC PARTS are products consisting entirely of the same magnetic material except for possible coating or finishing of the surface.



**AAE759-005 coercivity class****Subclasses**

AAA216-001 Hard-magnetic parts  
 AAA217-001 Soft-magnetic parts

**AAA216-001 02****Hard-magnetic parts****HRD**

A set of hard-magnetic parts of which each part can be described with the same group of data element types.

**NOTE**

HARD-MAGNETIC PARTS are magnetic parts having a high coercivity.

**AAA217-001 02****Soft-magnetic parts****SFT**

A set of soft-magnetic parts of which each part can be described with the same group of data element types.

**NOTE**

SOFT-MAGNETIC PARTS are magnetic parts having a low coercivity.

**Properties**

AAE764-005 soft magnetic material grade  
 AAE765-005 core size code  
 AAE766-005 core shape  
 AAE770-005 inductance factor  
 AAE771-005 effective permeability  
 AAE775-005 total power loss  
 AAE776-005 effective magnetic path length  
 AAE777-005 core factor  $C_1$   
 AAE778-005 (air) gap length  
 AAE782-005 effective cross-sectional area  
 AAF283-005 minimum cross-sectional area  
 AAF309-005 accessory name

**AAA218-001 02****Materials****MA**

A set of materials of which each material can be described by the same set of data element types.

**NOTE**

MATERIALS are products intended for further physical processing including chemical and nuclear processing, during which their geometry or composition will change.

**Properties**

AAF286-005 density

**AAF311-006 material type****Subclasses**

AAA219-001 Acoustic materials

AAA231-001 Dielectric and insulating materials  
 AAA220-001 Magnetic materials  
 AAA223-001 Optical materials  
 AAA230-001 Printed wiring laminates  
 AAA224-001 Thermal materials

**AAA219-001 02****Acoustic materials****ACO**

A set of acoustic materials of which each material can be described by the same set of data element types.

**NOTE**

ACOUSTIC MATERIALS are materials related to, containing, proceeding, arising from, actuated by, or carrying sound.

**AAA220-001 02****Magnetic materials****MG**

A set of magnetic materials of which each material can be described by the same set of data element types.

**NOTE**

MAGNETIC MATERIALS are materials exhibiting ferromagnetism.

**Properties**

AAE760-005 resistivity  
 AAE761-005 Curie temperature

**AAE759-005 coercivity class****Subclasses**

AAA221-001 Hard magnetic materials  
 AAA222-001 Soft magnetic materials

**AAA221-001 02****Hard magnetic materials****HRD**

A set of hard magnetic materials of which each material can be described by the same set of data element types.

**NOTE**

HARD-MAGNETIC MATERIALS are materials exhibiting ferromagnetism having a high coercivity.

**Properties**

AAE762-005 hard magnetic material grade  
 AAF287-005 coercivity  $H_{cB}$   
 AAF288-005 coercivity  $H_{cJ}$   
 AAF289-005 field strength at  $(BH)_{max}$   
 AAF290-005 saturation field strength  
 AAF291-005 temperature coefficient  $H_{cJ}$   
 AAF292-005 remanent flux density  
 AAF293-005 flux density at  $(BH)_{max}$   
 AAF294-005 recoil permeability  
 AAF295-005 BH product max  
 AAF296-005  $B_r \times H_{cJ}$  product  
 AAF297-005 temperature coefficient Br

## AAA222-001 02

### Soft magnetic materials SFT

A set of soft magnetic materials of which each material can be described by the same set of data element types.

#### NOTE

SOFT-MAGNETIC MATERIALS are materials exhibiting ferromagnetism having a low coercivity.

#### Properties

|            |                                    |
|------------|------------------------------------|
| AAE764-005 | soft magnetic material grade       |
| AAE769-005 | magnetic flux density              |
| AAE772-005 | initial permeability               |
| AAE773-005 | amplitude permeability             |
| AAF298-005 | loss factor                        |
| AAF299-005 | disaccommodation factor            |
| AAF300-005 | specific total loss                |
| AAF306-005 | hysteresis material constant       |
| AAF307-005 | temperature factor of permeability |
| AAF308-005 | saturation flux density            |

## AAA223-001 02

### Optical materials OP

A set of optical materials of which each material can be described by the same set of data element types.

#### NOTE

OPTICAL MATERIALS are materials which are transparent to light or to infra-red, ultra violet or X-ray radiation, such as glass and certain single crystals, polycrystalline.

## AAA224-001 02

### Thermal materials TH

A set of thermal materials of which each material can be described by the same set of data element types.

#### NOTE

THERMAL MATERIALS are materials that can be used to convert thermal energy into electric energy or provides refrigeration directly from electric energy.

## AAA225-001 02

### Deflection units DFL

A set of deflection units of which each deflection unit can be described by the same set of data element types.

#### NOTE

DEFLECTION UNITS are assemblies of field coils and line coils used to produce the magnetic fields for vertical and horizontal deflection of the electron beam(s) of a display tube.

#### Properties

|            |                      |
|------------|----------------------|
| AAE607-005 | line coil inductance |
|------------|----------------------|

|            |                          |
|------------|--------------------------|
| AAE608-005 | field coil inductance    |
| AAE609-005 | line coil resistance     |
| AAE610-005 | field coil resistance    |
| AAE611-005 | line deflection current  |
| AAE612-005 | field deflection current |
| AAF273-005 | display format           |
| AAF274-005 | line frequency           |

## AAA226-001 02

### Chokes CHOKE

A set of chokes of which each choke can be described by the same set of data element types.

#### NOTE

CHOKES are inductances used in a circuit to present a high impedance for frequencies above a specified frequency range without appreciably limiting the flow of direct current.

## AAA227-001 02

### Coils COIL

A set of coils of which each coil can be described by the same set of data element types.

#### NOTE

COILS are a number of turns of wire used to introduce inductance into an electric circuit, to produce magnetic flux, or to react mechanically to a changing magnetic flux.

## AAA228-001 02

### Linearity control units LINUNIT

A set of linearity control units of which each unit can be described by the same set of data element types.

#### NOTE

LINEARITY CONTROL UNITS are control units to adjust the variation of scanning speed during the trace interval to minimise geometric distortion.

## AAA229-001 02

### Microwave components MIC

A set of components for operation at microwave frequencies of which each component can be described by the same set of data element types.

#### Properties

|            |                             |
|------------|-----------------------------|
| AAF260-005 | characteristic impedance    |
| AAJ041-001 | voltage standing wave ratio |
| AAJ056-001 | category temperature        |
| AAJ117-001 | microwave component type    |
| AAJ118-001 | connection type             |
| AAJ119-001 | insertion loss              |
| AAJ120-001 | isolation                   |
| AAJ121-001 | maximum power handling      |
| AAJ122-001 | frequency range             |



**AAA230-001 02****Printed wiring laminates****PWL**

A set of copper-clad laminates for printed wiring of which each laminate can be described by the same set of data element types.

**Properties**

AAJ040-001 circuit board thickness  
 AAJ107-001 printed wiring base material  
 AAJ108-001 copper thickness  
 AAJ109-001 number of layers

**AAA231-001 02****Dielectric and insulating materials DIEL**

A set of dielectric or insulating materials of which each material can be described by the same set of data element types.

**Properties**

AAJ106-001 dielectric material

**AAA232-001 02****Printed wiring circuits****PWC**

A set of rigid, sem-rigid or flexible printed wiring circuits of which each circuit can be described by the same set of data element types.

**Properties**

AAJ040-001 circuit board thickness  
 AAJ107-001 printed wiring base material  
 AAJ108-001 copper thickness  
 AAJ109-001 number of layers  
 AAJ110-001 circuit length  
 AAJ111-001 circuit width  
 AAJ112-001 track width  
 AAJ113-001 track spacing  
 AAJ114-001 connector material  
 AAJ115-001 connector pitch

**AAA233-001 02****Features****FEA**

A set of features of a characteristic property of which each feature can be described by the same set of data element types.

**NOTE**

FEATURES are autonomous and stand-alone abstractions of an object of the parts/component library application domain. It might be represented as a specific subclass of other classes.

**AAF440-001 features****Subclasses**

AAA234-001 Complex number values  
 AAA235-001 Toleranced values

**AAA234-001 02****Complex number values****CPLX**

A set of properties representing a characteristic value as a complex quantity which can be described by the same set of data element types.

**NOTE**

COMPLEX NUMBER VALUES are values for physical quantities that may be expressed in a Cartesian form with a real and an imaginary part or in a polar form with a magnitude and an argument (phase angle).

**Properties**

AAF454-001 phase angle  
 AAF455-001 phase angle

**AAF441-001 complex numbers****Subclasses**

AAA236-001 Impedance  
 AAA237-001 Admittance

**AAA235-001 02****Toleranced values****TOL**

A set of properties representing the percentage (%) tolerances of a characteristic value which can be described by the same set of data element types.

**NOTE**

TOLERANCED VALUES are values for physical quantities that may be expressed as the nominal value of the quantity together with deviations from that nominal value as percentages or absolute values.

**Properties**

AAF443-001 symmetric tolerance  
 AAF444-001 negative tolerance  
 AAF445-001 positive tolerance

**AAF442-001 toleranced values****Subclasses**

AAA238-001 Toleranced capacitance  
 AAA239-001 Toleranced resistance  
 AAA239-001 Toleranced resistance

**AAA236-001 02****Impedance****IMP**

A set of properties representing the impedance of an electric component as a complex quantity of which each set of values can be described by the same set of data element types

**NOTE**

IMPEDANCE is the ratio of voltage to current expressed as a complex number value.

**Properties**

AAF456-001 modulus of impedance  
 AAF457-001 resistance  
 AAF458-001 reactance

## AAA237-001 02

### Admittance

### ADM

A set of properties representing the admittance of an electric component as a complex quantity of which each set of values can be described by the same set of data element types.

#### NOTE

ADMITTANCE is the ratio of current to voltage expressed as a complex number value.

#### Properties

AAF459-001 modulus of admittance  
AAF460-001 conductance  
AAF461-001 susceptance

## AAA238-001 02

### Toleranced capacitance

### TOLCAP

A set of properties representing capacitance of an electric component together with associated tolerances of which each set of values can be described by the same set of data element types.

#### Properties

AAF446-001 capacitance  
AAF447-001 symmetric capacitance tolerance  
AAF448-001 negative capacitance tolerance  
AAF449-001 positive capacitance tolerance

## AAA239-001 02

### Toleranced resistance

### TOLRES

A set of properties representing resistance of an electric component together with associated tolerances of which each set of values can be described by the same set of data element types.

#### Properties

AAF450-001 resistance  
AAF451-001 symmetric resistance tolerance  
AAF452-001 negative resistance tolerance  
AAF453-001 positive resistance tolerance

## AAA295-001 02

### Bare die

### BARE

A set of bare die devices without attachments and with pads on one surface only for which the geometric and physical properties of each device can be described by the same set of data element types.

#### NOTE

BARE DIE are unpackaged discrete semiconductors or integrated circuits in the form of singulated die or sawn or unsawn wafers with pads on one surface suitable for interconnection to the substrate or package.

#### Properties

AAD005-001 substrate material  
AAD006-001 connection requirement code  
AAD007-001 substrate connection  
AAD012-001 termination number  
AAD013-001 manufacturer pad identifier  
AAD014-001 pad geometry name  
AAD015-001 pad x position  
AAD016-001 pad y position  
AAD017-001 pad orientation  
AAD018-001 number of bond sites  
AAD024-001 pad shape  
AAD025-001 pad length  
AAD026-001 pad width  
AAD027-001 number of polygon vertices  
AAD028-001 vertex number  
AAD029-001 vertex x-coordinate  
AAD030-001 vertex y-coordinate  
AAD078-001 passivation material  
AAD091-001 connection requirement  
AAD093-001 substrate connection  
AAD116-001 pad geometry count  
AAD119-001 backside finish  
AAD120-001 pad metallisation  
AAD121-001 pad diameter  
AAD148-001 bulk material  
AAD149-001 maximum assembly temperature

## AAA296-001 02

### Bumped die

### BUMP

A set of bare die devices with bumps for connection to a substrate for which the geometric and physical properties of each device can be described by the same set of data element types.

#### NOTE

BUMPED DIE are unpackaged die or wafers that have had added bumps for interconnection and/or mechanical attachment. Typically these can be die that have had solder or other metallic bumps added to the metallised pads on the die (also known as flip-chip).

#### Properties

AAD122-001 bump size  
AAD123-001 bumped height  
AAD124-001 bump material  
AAD126-001 underfill  
AAD146-001 bump height  
AAD147-001 bump height tolerance

## AAA297-001 02

### Die with attached lead frame

### LEAD

A set of bare die devices with lead frame for connection to a substrate for which the geometric and physical properties of each device can be described by the same set of data element types.

#### NOTE

DIE WITH ATTACHED LEAD FRAME are unpackaged die that have had added lead frames or similar terminations connected to the pads on the die to allow interconnection and/or mechanical attachment.

**Properties**

AAD125-001 lead-frame material  
 AAD126-001 underfill

**AAA298-001 02****Minimally-packaged die devices MPD**

A set of properties for minimally-packaged die devices for which the geometric and physical properties of each device can be described by the same set of data element types.

**NOTE**

MINIMALLY-PACKAGED DIE DEVICES are die or wafers that have had some exterior packaging medium and interconnection structure added for protection and ease of handling.

**Properties**

AAD126-001 underfill  
 AAD150-001 encapsulation material  
 AAD155-001 MPD delivery form

**AAA299-001 01****Two-sided bare die devices DUAL**

A set of properties for bare die devices having connections on both surfaces for which the geometric and physical properties of each device can be described by the same set of data element types.

**Properties**

AAD005-001 substrate material  
 AAD013-001 manufacturer pad identifier  
 AAD014-001 pad geometry name  
 AAD015-001 pad x position  
 AAD016-001 pad y position  
 AAD017-001 pad orientation  
 AAD018-001 number of bond sites  
 AAD024-001 pad shape  
 AAD025-001 pad length  
 AAD026-001 pad width  
 AAD027-001 number of polygon vertices  
 AAD028-001 vertex number  
 AAD029-001 vertex x-coordinate  
 AAD030-001 vertex y-coordinate  
 AAD078-001 passivation material  
 AAD081-001 die surface  
 AAD116-001 pad geometry count

**AAA301-001 01****Geometry GEO**

A set of industrial products of which each product can be described with the same group of data element types.

**AAG000-001 geometry type****Subclasses**

AAA302-001 Die devices  
 AAA303-001 Package outlines

**AAA302-001 02****Die devices****DIE**

A set of die devices of which each device can be described with the same group of data element types.

**NOTE**

DIE DEVICES include bare semiconductor die or wafers, with or without connection structures, or minimally-packaged die or wafers.

**Properties**

AAD001-001 die identifier  
 AAD002-001 die name  
 AAD003-001 die version  
 AAD008-001 die test level code  
 AAD009-001 die yield  
 AAD010-001 die description  
 AAD011-001 wafer size  
 AAD019-001 signal name  
 AAD020-001 signal type  
 AAD021-001 electrical reference  
 AAD022-001 signal direction  
 AAD023-001 swap codes  
 AAD031-001 supply variability  
 AAD032-001 supply voltage  
 AAD038-001 pad supply current  
 AAD049-001 supply name  
 AAD054-001 supply current  
 AAD055-001 supply packing code  
 AAD056-001 supply form code  
 AAD060-001 test procedure description  
 AAD070-001 die step dimension x  
 AAD071-001 die step dimension y  
 AAD072-001 die thickness  
 AAD082-001 test name  
 AAD085-001 die type  
 AAD086-001 die type description  
 AAD087-001 supply form  
 AAD088-001 supply form description  
 AAD089-001 supply packing  
 AAD090-001 supply packing description  
 AAD095-001 die yield code  
 AAD115-001 geometric units  
 AAD117-001 size tolerance  
 AAD118-001 thickness tolerance  
 AAD127-001 die picture  
 AAD129-001 die centre x-position  
 AAD130-001 die centre y-position  
 AAD131-001 defect rate  
 AAD132-001 test flow  
 AAD133-001 temperature specification  
 AAD134-001 process options  
 AAD137-001 conformity level  
 AAD140-001 die manufacturer  
 AAD141-001 die supplier  
 AAD142-001 die data source  
 AAD143-001 packaged part name  
 AAD144-001 geometric view  
 AAD145-001 terminal count  
 AAD151-001 power limit  
 AAD153-001 test reliability code  
 AAD154-001 test maturity code  
 AAD156-001 fiducial name  
 AAD157-001 fiducial file name  
 AAD158-001 fiducial width  
 AAD159-001 fiducial height

AAD160-001 fiducial x position  
AAD161-001 fiducial y position  
AAD162-001 fiducial orientation

#### **AAD004-001 die type code**

##### **Subclasses**

AAA295-001 Bare die  
AAA299-001 Two-sided bare die devices  
AAA296-001 Bumped die  
AAA297-001 Die with attached lead frame  
AAA298-001 Minimally-packaged die devices

#### **AAA303-001 01**

##### **Package outline PAK**

A set of component packages of which each package can be described with the same group of data element types.

##### **NOTE**

PACKAGE OUTLINE is the geometric description of the physical shape of a packaged component including its dimensions.

##### **Properties**

AAG037-001 quantity of terminal positions  
AAG038-001 quantity of missing terminals  
AAG059-001 actual quantity of termination  
AAG066-001 drawing reference code  
AAG067-001 source document identification  
AAG068-001 source document page  
AAG069-001 manufacturer package code  
AAG070-001 standard package code  
AAG071-001 standards document reference  
AAG072-001 termination count sequence  
AAG073-001 surface-mount flag

#### **AAG057-001 package style code**

##### **Subclasses**

AAA304-001 bead  
AAA305-001 chip carrier  
AAA307-001 cylindrical  
AAA308-001 disc  
AAA309-001 flange mount  
AAA311-001 flat pack  
AAA312-001 grid array  
AAA313-001 in line  
AAA314-001 long-form  
AAA318-001 post mount  
AAA319-001 rectangular  
AAA320-001 small outline

#### **AAA304-001 01**

##### **bead-shaped BD**

A set of bead package outline styles of which each outline style can be described with the same group of data element types.

##### **NOTE**

BEAD-SHAPED is a package style in which the body is spherical or almost spherical.

#### **AAG056-001 terminal position code**

##### **Subclasses**

AAA322-001 axial  
AAA323-001 bottom

#### **AAA305-001 01**

##### **chip-carrier CC**

A set of chip-carrier package outline styles of which each outline style can be described with the same group of data element types.

##### **NOTE**

CHIP-CARRIER is a package style in which the body has a rectangular in shape and has very short connections or connections on the surface.

#### **AAG056-001 terminal position code**

##### **Subclasses**

AAA324-001 quad

#### **AAA307-001 01**

##### **cylindrical CY**

A set of cylindrical package outline styles of which each outline style can be described with the same group of data element types.

##### **NOTE**

CYLINDRICAL is a package style in which the body is cylindrical with the length no smaller than the diameter.

#### **AAG056-001 terminal position code**

##### **Subclasses**

AAA325-001 axial  
AAA326-001 bottom  
AAA327-001 end  
AAA328-001 radial  
AAA329-001 upper

#### **AAA308-001 01**

##### **disc-shaped DB**

A set of disc package outline styles of which each outline style can be described with the same group of data element types.

##### **NOTE**

DISC-SHAPED is a package style in which the body is cylindrical with the length smaller than the diameter.

#### **AAG056-001 terminal position code**

##### **Subclasses**

AAA330-001 axial  
AAA331-001 bottom

**AAA309-001 01****flange-mount FM**

A set of flange-mount package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

FLANGE-MOUNT is a package style which is intended for mounting by flanges which form part of the package.

**AAG056-001 terminal position code****Subclasses**

AAA332-001 bottom  
AAA333-001 double  
AAA334-001 single  
AAA335-001 zig-zag

**AAA311-001 01****flat-pack FP**

A set of flat-pack package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

FLAT-PACK is a package style which is intended for mounting and connection by leads extending away from the body in a horizontal plane.

**AAG056-001 terminal position code****Subclasses**

AAA336-001 double  
AAA337-001 quad

**AAA312-001 01****grid-array GA**

A set of grid-array package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

GRID-ARRAY is a package style in which the body has a rectangular shape with leads disposed in regular patterns over one face.

**AAG056-001 terminal position code****Subclasses**

AAA338-001 bottom  
AAA339-001 perpendicular

**AAA313-001 01****in-line IP**

A set of in-line package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

IN-LINE is a package style in which the leads are disposed in one or more rows.

**AAG056-001 terminal position code****Subclasses**

AAA340-001 double  
AAA341-001 quad  
AAA342-001 single  
AAA343-001 triple  
AAA344-001 zig-zag

**AAA314-001 01****long-form LF**

A set of long-form package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

LONG FORM is a package style in which the length is greater than the cross-sectional dimensions but which cannot be described as either cylindrical or rectangular.

**AAG056-001 terminal position code****Subclasses**

AAA345-001 axial

**AAA318-001 01****post-mount PM**

A set of post-mount package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

POST-MOUNT is a package style in which the package is mounted and fastened by a post or stud.

**AAG056-001 terminal position code****Subclasses**

AAA346-001 upper



## AAA319-001 01

### rectangular RC

A set of rectangular package outline styles of which each outline style can be described with the same group of data element types.

#### NOTE

RECTANGULAR is a package style in which the body approximates to the shape of a rectangular box.

### AAG056-001 terminal position code

#### Subclasses

AAA347-001 axial  
AAA348-001 bottom  
AAA349-001 end

## AAA320-001 01

### small-outline SO

A set of small package outline styles of which each outline style can be described with the same group of data element types.

#### NOTE

SMALL-OUTLINE is a package style which is characterised by small dimensions and which is normally intended for surface-mounting by small gull-wing leads.

### AAG056-001 terminal position code

#### Subclasses

AAA350-001 double  
AAA351-001 quad  
AAA352-001 single

## AAA322-001 01

### axial leads A

A set of bead package outline styles with axial leads of which each outline style can be described with the same group of data element types.

#### NOTE

AXIAL LEADS extend outwards from the package along one of its axes in opposite directions away from the centre of the package.

### AAG058-001 terminal shape code

#### Subclasses

AAA353-001 wire

## AAA323-001 01

### bottom leads B

A set of bead package outline styles with bottom leads of which each outline style can be described with the same group of data element types.

#### NOTE

BOTTOM LEADS are leads which emerge from the face of a package which is on or nearest to its mounting plane.

### AAG058-001 terminal shape code

#### Subclasses

AAA354-001 wire

## AAA324-001 01

### quad Q

A set of quad chip-carrier package outline styles of which each outline style can be described with the same group of data element types.

#### NOTE

QUAD leads are disposed around all four sides of a rectangular package.

### AAG058-001 terminal shape code

#### Subclasses

AAA355-001 J-bend  
AAA356-001 no lead

## AAA325-001 01

### axial leads A

A set of cylindrical package outline styles with axial leads of which each outline style can be described with the same group of data element types.

#### NOTE

AXIAL LEADS extend outwards from the package along one of its axes in opposite directions away from the centre of the package.

### AAG058-001 terminal shape code

#### Subclasses

AAA357-001 wire

## AAA326-001 01

### bottom leads B

A set of cylindrical package outline styles with bottom leads of which each outline style can be described with the same group of data element types.

#### NOTE

BOTTOM LEADS are leads which emerge from the face of a package which is on or nearest to its mounting plane.

**AAG058-001 terminal shape code****Subclasses**

AAA358-001 wire

**AAA327-001 01****end connections****E**

A set of cylindrical package outline styles with end connections of which each outline style can be described with the same group of data element types.

**NOTE**

END CONNECTIONS are connections formed on or around the ends of a package.

**AAG058-001 terminal shape code****Subclasses**

AAA359-001 wrap around

**AAA328-001 01****radial leads****R**

A set of cylindrical package outline styles with radial leads of which each outline style can be described with the same group of data element types.

**NOTE**

RADIAL LEADS extend outwards from a package in a direction perpendicular to one of the principal axes of the package.

**AAG058-001 terminal shape code****Subclasses**

AAA360-001 solder lug

AAA361-001 wire

**AAA329-001 01****upper connections****U**

A set of cylindrical package outline styles with upper connections of which each outline style can be described with the same group of data element types.

**NOTE**

UPPER CONNECTIONS are connections which emerge from the face of a package which is opposite to the face seated on the mounting plane.

**AAG058-001 terminal shape code****Subclasses**

AAA362-001 solder lug

AAA363-001 screw

**AAA330-001 01****axial leads****A**

A set of disc package outline styles with axial leads of which each outline style can be described with the same group of data element types.

**NOTE**

AXIAL LEADS extend outwards from the package along one of its axes in opposite directions away from the centre of the package.

**AAG058-001 terminal shape code****Subclasses**

AAA364-001 wire

**AAA331-001 01****bottom leads****B**

A set of disc package outline styles with bottom leads of which each outline style can be described with the same group of data element types.

**NOTE**

BOTTOM LEADS are leads which emerge from the face of a package which is on or nearest to its mounting plane.

**Properties**

AAG058-001 terminal shape code

**Subclasses**

AAA365-001 wire

**AAA332-001 01****bottom leads****B**

A set of flange-mount package outline styles with bottom leads of which each outline style can be described with the same group of data element types.

**NOTE**

BOTTOM LEADS are leads which emerge from the face of a package which is on or nearest to its mounting plane.

**AAG058-001 terminal shape code****Subclasses**

AAA366-001 pin



# **AAA333-001 01**

## **double-row leads D**

A set of flange-mount package outline styles with a double row of leads of which each outline style can be described with the same group of data element types.

### **NOTE**

DOUBLE-ROW LEADS are leads which are disposed in pairs in two parallel rows.

## **AAG058-001 terminal shape code**

### **Subclasses**

AAA367-001 pin

# **AAA334-001 01**

## **single-row leads S**

A set of flange-mount package outline styles with a single row of leads of which each outline style can be described with the same group of data element types.

### **NOTE**

SINGLE-ROW LEADS are leads which are disposed in a single row along one side of a package.

## **AAG058-001 terminal shape code**

### **Subclasses**

AAA368-001 through hole

# **AAA335-001 01**

## **zig-zag leads Z**

A set of flange-mount package outline styles with leads in a zig-zag pattern of which each outline style can be described with the same group of data element types.

### **NOTE**

ZIG-ZAG LEADS are leads which are disposed in two parallel rows with each lead in a row opposite the space between two leads in the other row.

## **AAG058-001 terminal shape code**

### **Subclasses**

AAA369-001 through-hole

# **AAA336-001 01**

## **double-row leads D**

A set of dual flat-pack package outline styles of which each outline style can be described with the same group of data element types.

### **NOTE**

DOUBLE-ROW LEADS are leads which are disposed in two parallel rows.

# **AAG058-001 terminal shape code**

### **Subclasses**

AAA370-001 flat

# **AAA337-001 01**

## **quad Q**

A set of quad flat-pack package outline styles of which each outline style can be described with the same group of data element types.

### **NOTE**

QUAD leads are disposed around all four sides of a rectangular package.

## **AAG058-001 terminal shape code**

### **Subclasses**

AAA371-001 gull wing

# **AAA338-001 01**

## **bottom leads B**

A set of grid-array package outline styles with bottom leads of which each outline style can be described with the same group of data element types.

### **NOTE**

BOTTOM LEADS are leads which emerge from the face of a package which is on or nearest to its mounting plane.

## **AAG058-001 terminal shape code**

### **Subclasses**

AAA372-001 butt

# **AAA339-001 01**

## **perpendicular P**

A set of pin-grid-array package outline styles of which each outline style can be described with the same group of data element types.

### **NOTE**

PERPENDICULAR LEADS are rigid pins which are disposed over the face of a package and perpendicular to it.

## **AAG058-001 terminal shape code**

### **Subclasses**

AAA373-001 pin

**AAA340-001 01****double-row leads D**

A set of dual-in-line package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

DOUBLE-ROW LEADS are leads which are disposed in a two parallel rows.

**AAG058-001 terminal shape code****Subclasses**

AAA374-001 pin  
AAA375-001 through-hole

**AAA341-001 01****quad Q**

A set of quad-in-line package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

QUAD leads are disposed around all four sides of a rectangular package.

**AAG058-001 terminal shape code****Subclasses**

AAA376-001 through-hole

**AAA342-001 01****single-row leads S**

A set of single-in-line package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

SINGLE-ROW LEADS are leads which are disposed in a single row along one side of a package.

**AAG058-001 terminal shape code****Subclasses**

AAA377-001 through-hole

**AAA343-001 01****triple row T**

A set of triple-in-line package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

SINGLE-ROW LEADS are leads which are disposed in a single row along one side of a package.

**AAG058-001 terminal shape code****Subclasses**

AAA378-001 through-hole

**AAA344-001 01****zig-zag leads Z**

A set of zigzag-in-line package outline styles of which each outline style can be described with the same group of data element types.

**NOTE**

ZIG-ZAG LEADS are leads which are disposed in two parallel rows with each lead in a row opposite the space between two leads in the other row.

**AAG058-001 terminal shape code****Subclasses**

AAA379-001 through-hole

**AAA345-001 01****axial leads A**

A set of long-form package outline styles with axial leads of which each outline style can be described with the same group of data element types.

**NOTE**

AXIAL LEADS extend outwards from the package along one of its axes in opposite directions away from the centre of the package.

**AAG058-001 terminal shape code****Subclasses**

AAA380-001 wire

**AAA346-001 01****upper connections U**

A set of post-mount package outline styles with upper connections of which each outline style can be described with the same group of data element types.

**NOTE**

UPPER CONNECTIONS are connections which emerge from the face of a package which is opposite to the face seated on the mounting plane.

**AAG058-001 terminal shape code****Subclasses**

AAA381-001 solder lug  
AAA382-001 high current cable

## AAA347-001 01

### axial leads

**A**

A set of rectangular package outline styles with axial leads of which each outline style can be described with the same group of data element types.

#### NOTE

AXIAL LEADS extend outwards from the package along one of its axes in opposite directions away from the centre of the package.

### AAG058-001 terminal shape code

#### Subclasses

AAA383-001 solder lug  
AAA384-001 wire

## AAA348-001 01

### bottom leads

**B**

A set of rectangular package outline styles with bottom leads of which each outline style can be described with the same group of data element types.

#### NOTE

BOTTOM LEADS are leads which emerge from the face of a package which is on or nearest to its mounting plane.

### AAG058-001 terminal shape code

#### Subclasses

AAA385-001 wire

## AAA349-001 01

### end connections

**E**

A set of rectangular package outline styles with end connections of which each outline style can be described with the same group of data element types.

#### NOTE

END CONNECTIONS are connections formed on or around the ends of a package.

### AAG058-001 terminal shape code

#### Subclasses

AAA386-001 no lead  
AAA387-001 wraparound

## AAA350-001 01

### double-row leads

**D**

A set of dual small package outline styles of which each outline style can be described with the same group of data element types.

#### NOTE

DOUBLE-ROW LEADS are leads which are disposed in a two parallel rows

### AAG058-001 terminal shape code

#### Subclasses

AAA388-001 gull-wing

## AAA351-001 01

### quad

**Q**

A set of quad small package outline styles of which each outline style can be described with the same group of data element types.

#### NOTE

QUAD leads are disposed around all four sides of a rectangular package.

### AAG058-001 terminal shape code

#### Subclasses

AAA389-001 gull-wing

## AAA352-001 01

### single-row leads

**S**

A set of single small package outline styles of which each outline style can be described with the same group of data element types.

#### NOTE

SINGLE-ROW LEADS are leads which are disposed in a single row along one side of a package.

### AAG058-001 terminal shape code

#### Subclasses

AAA390-001 gull-wing

## AAA353-001 01

### wire

**W**

A set of bead package outline styles with axial wire leads of which each outline style can be described with the same group of data element types.

### AAG054-001 terminal variant code

#### Subclasses

AAA391-001 straight leads

**AAA354-001 01****wire** **W**

A set of bead package outline styles with bottom wire leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA392-001 straight leads  
AAA393-001 formed leads

**AAA355-001 01****J-bend** **J**

A set of quad chip-carrier package outline styles with J-bend leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA394-001 standard form

**AAA356-001 01****no-lead** **N**

A set of quad leadless chip-carrier package outline styles of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA395-001 standard form

**AAA357-001 01****wire** **W**

A set of cylindrical package outline styles with axial wire leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA396-001 straight leads

**AAA358-001 01****wire** **W**

A set of cylindrical package outline styles with bottom wire leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA397-001 leads on a circle  
AAA398-001 straight leads in line  
AAA399-001 formed leads in line  
AAA400-001 leads on a square grid  
AAA401-001 offset leads

**AAA359-001 01****wrap-around** **R**

A set of cylindrical package outline styles with wrap-around end connections of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA402-001 standard form

**AAA360-001 01****solder lug** **D**

A set of cylindrical package outline styles with radial solder-lug leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA403-001 straight leads

**AAA361-001 01****wire** **W**

A set of cylindrical package outline styles with radial wire leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA404-001 straight leads

**AAA362-001 01****solder lug** **D**

A set of cylindrical package outline styles with upper solder-lug connections of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA405-001 standard form

# **AAA363-001 01**

**screw** **Y**

A set of cylindrical package outline styles with upper screw connections of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA406-001 standard form

# **AAA364-001 01**

**wire** **W**

A set of disc package outline styles with axial wire leads of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA407-001 straight leads

# **AAA365-001 01**

**wire** **W**

A set of disc package outline styles with bottom wire leads of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA408-001 straight leads

AAA409-001 formed leads

# **AAA366-001 01**

**pin** **P**

A set of flange-mount package outline styles with bottom pins of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA410-001 offset leads

AAA411-001 leads on a circle

# **AAA367-001 01**

**pin** **P**

A set of flange-mount package outline styles with a double row of pins of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA412-001 round pins

# **AAA368-001 01**

**through-hole** **T**

A set of flange-mount package outline styles with a single row of through-hole leads of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA413-001 straight flat leads

AAA414-001 straight V-section leads

# **AAA369-001 01**

**through-hole** **T**

A set of flange-mount package outline styles with through-hole leads in a zig-zag pattern of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA415-001 straight flat leads

AAA416-001 straight V-section leads

# **AAA370-001 01**

**flat** **F**

A set of dual flat-pack package outline styles with flat leads of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA417-001 straight flat leads

# **AAA371-001 01**

**gull wing** **G**

A set of quad flat-pack package outline styles with gull-wing leads of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA418-001 standard form

**AAA372-001 01****butt** **B**

A set of grid-array package outline styles with bottom butt leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA419-001 solder balls

**AAA373-001 01****pin** **P**

A set of pin-grid-array package outline styles with pin leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA420-001 round pins

**AAA374-001 01****pin** **P**

A set of dual-in-line package outline styles with pin leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA421-001 round pins

AAA422-001 rectangular pins

**AAA375-001 01****through-hole** **T**

A set of dual-in-line package outline styles with through-hole leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA423-001 standard form

**AAA376-001 01****through-hole** **T**

A set of quad-in-line package outline styles with through-hole leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA424-001 standard form

**AAA377-001 01****through-hole** **T**

A set of single-in-line package outline styles with through-hole leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA425-001 standard form

**AAA378-001 01****through-hole** **T**

A set of triple-in-line package outline styles with through-hole leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA426-001 standard form

**AAA379-001 01****through-hole** **T**

A set of zigzag-in-line package outline styles with through-hole leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA427-001 standard form

**AAA380-001 01****wire** **W**

A set of long-form package outline styles with axial wire leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA428-001 straight leads



# **AAA381-001 01**

**solder lug**

**D**

A set of post-mount package outline styles with upper solder-lug connections of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA429-001 one fixed tag  
AAA430-001 two fixed tags

# **AAA382-001 01**

**high current cable**

**H**

A set of post-mount package outline styles with upper high-current cable connections of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA431-001 one lead with tag  
AAA432-001 two leads with tags  
AAA433-001 three leads with tag  
AAA434-001 one lead no tag

# **AAA383-001 01**

**solder lug**

**D**

A set of rectangular package outline styles with axial solder lugs of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA435-001 strip leads

# **AAA384-001 01**

**wire**

**W**

A set of rectangular package outline styles with axial wire leads of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA436-001 off-set leads

# **AAA385-001 01**

**wire**

**W**

A set of rectangular package outline styles with bottom wire leads of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA437-001 straight leads  
AAA438-001 formed leads

# **AAA386-001 01**

**no lead**

**N**

A set of leadless rectangular package outline styles with end connections of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA439-001 standard form

# **AAA387-001 01**

**wrap-around**

**R**

A set of rectangular package outline styles with wrap-around end connections of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA440-001 standard form

# **AAA388-001 01**

**gull-wing**

**G**

A set of dual small package outline styles with gull-wing leads of which each outline style can be described with the same group of data element types.

## **AAG054-001 terminal variant code**

### **Subclasses**

AAA441-001 multiple leads  
AAA442-001 three leads

**AAA389-001 01****gull-wing****G**

A set of quad small package outline styles with gull-wing leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA443-001 standard form

**AAA390-001 01****gull-wing****G**

A set of single small package outline styles with gull-wing leads of which each outline style can be described with the same group of data element types.

**AAG054-001 terminal variant code****Subclasses**

AAA444-001 two leads, stub and tab

**AAA391-001 01****straight leads****T001**

A set of bead package outline styles with straight axial wire leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG089-001 package length  
AAG090-001 overall length  
AAG091-001 bent terminal spacing  
AAG111-001 terminal length

DAA001-001 Bead package, straight axial wire leads

**AAA392-001 01****straight leads****T001**

A set of bead package outline styles with straight bottom wire leads of which each outline style can be described with the same group of data element types

**Properties**

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG129-001 terminal length

DAA002-001 Bead package, straight bottom wire leads

**AAA393-001 01****formed leads****T002**

A set of bead package outline styles with formed bottom wire leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG129-001 terminal length

DAA003-001 Bead package, formed bottom wire leads

**AAA394-001 01****standard form****T000**

A set of quad chip-carrier package outline styles with standard J-bend leads of which each outline style can be described with the same group of data element types.

**AAG055-001 body variant code****Subclasses**

AAA445-001 non-bumped package

**AAA395-001 01****standard form****T000**

A set of quad leadless chip-carrier package outline styles with standard leads of which each outline style can be described with the same group of data element types.

**AAG055-001 body variant code****Subclasses**

AAA446-001 Non-cavity package (moulded)  
AAA447-001 cavity package (ceramic)

**AAA396-001 01****straight leads****T001**

A set of cylindrical package outline styles with straight axial wire leads of which each outline style can be described with the same group of data element types.

**AAG055-001 body variant code****Subclasses**

AAA448-001 plain cylindrical  
AAA449-001 top hat package

# **AAA397-001 01**

## **leads on a circle**

## **T003**

A set of cylindrical package outline styles with bottom wire leads on a circle of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG004-001 terminal circle diameter  
AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG026-001 index height  
AAG027-001 index width  
AAG028-001 index length  
AAG029-001 terminal length  
AAG047-001 index datum angle  
AAG049-001 angular terminal spacing  
AAG062-001 package diameter

DAA004-001 Cylindrical package, bottom leads on circle

# **AAA398-001 01**

## **straight leads in line**

## **T004**

A set of cylindrical package outline styles with straight in-line bottom wire leads of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG008-001 terminal width  
AAG009-001 terminal diameter  
AAG012-001 terminal thickness  
AAG014-001 package diameter  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG027-001 index width  
AAG044-001 terminal reference position  
AAG129-001 terminal length

DAA005-001 Cylindrical package, straight in-line bottom leads

# **AAA399-001 01**

## **formed leads in line**

## **T005**

A set of cylindrical package outline styles with formed in-line bottom wire leads of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG002-001 stand-off height  
AAG003-001 package height  
AAG008-001 terminal width  
AAG009-001 terminal diameter  
AAG012-001 terminal thickness  
AAG014-001 package diameter  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG027-001 index width  
AAG044-001 terminal reference position  
AAG129-001 terminal length

DAA006-001 Cylindrical package, formed in-line bottom leads

# **AAA400-001 01**

## **leads on a square grid**

## **T006**

A set of cylindrical package outline styles with bottom wire leads on a square grid of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG017-001 terminal spacing  
AAG018-001 flange zone height  
AAG027-001 index width  
AAG028-001 index length  
AAG053-001 terminal row spacing  
AAG062-001 package diameter  
AAG080-001 terminal row spacing  
AAG129-001 terminal length

DAA007-001 Cylindrical package, bottom leads on square grid

# **AAA401-001 01**

## **offset leads**

## **T007**

A set of cylindrical package outline styles with offset bottom wire leads of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG017-001 terminal spacing  
AAG044-001 terminal reference position  
AAG129-001 terminal length

DAA008-001 Cylindrical package, offset in-line bottom leads

**AAA402-001 01****standard form T000**

A set of cylindrical package outline styles with wrap-around end connections in standard form of which each outline style can be described with the same group of data element types.

**Properties**

AAG009-001 terminal diameter  
 AAG014-001 package diameter  
 AAG077-001 terminal length  
 AAG090-001 overall length  
 AAG104-001 drawing sequence code

DAA009-001 Cylindrical package, wrap-around terminations

**AAA403-001 01****straight leads T001**

A set of cylindrical package outline styles with straight radial solder-lug leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG008-001 terminal width  
 AAG012-001 terminal thickness  
 AAG014-001 package diameter  
 AAG017-001 terminal spacing  
 AAG089-001 package length  
 AAG129-001 terminal length

DAA010-001 Cylindrical package, radial tag leads

**AAA404-001 01****straight leads T001**

A set of cylindrical package outline styles with straight radial wire leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG009-001 terminal diameter  
 AAG014-001 package diameter  
 AAG017-001 terminal spacing  
 AAG089-001 package length  
 AAG129-001 terminal length

DAA011-001 Cylindrical package, radial wire leads

**AAA405-001 01****standard form T000**

A set of cylindrical package outline styles with upper solder-lug connections in standard form of which each outline style can be described with the same group of data element types.

**AAG055-001 body variant code****Subclasses**

AAA450-001 clamp mount package  
 AAA451-001 stud mount package

**AAA406-001 01****standard form T000**

A set of cylindrical package outline styles with upper screw connections in standard form of which each outline style can be described with the same group of data element types.

**AAG055-001 body variant code****Subclasses**

AAA452-001 clamp mount package  
 AAA453-001 stud mount package

**AAA407-001 01****straight leads T001**

A set of disc package outline styles with straight axial wire leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG009-001 terminal diameter  
 AAG014-001 package diameter  
 AAG089-001 package length  
 AAG090-001 overall length  
 AAG091-001 bent terminal spacing  
 AAG111-001 terminal length

DAA012-001 Disc package, straight axial wire leads

**AAA408-001 01****straight leads T001**

A set of disc package outline styles with straight bottom wire leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG009-001 terminal diameter  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing  
 AAG129-001 terminal length

DAA013-001 Disc package, straight bottom leads

# **AAA409-001 01**

## **formed leads**

## **T002**

A set of disc package outline styles with formed bottom wire leads of which each outline style can be described with the same group of data element types

### **Properties**

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG129-001 terminal length

DAA014-001 Disc package, formed bottom leads

# **AAA410-001 01**

## **offset leads**

## **T007**

A set of flange-mount package outline styles with offset bottom pins of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG017-001 terminal spacing  
AAG018-001 flange zone height  
AAG029-001 terminal length  
AAG039-001 mounting hole diameter  
AAG042-001 mounting hole separation  
AAG045-001 terminal reference position  
AAG083-001 larger flange radius  
AAG084-001 smaller flange radius  
AAG085-001 flange overall length  
AAG086-001 flange overall width  
AAG108-001 terminal reference position

DAA015-001 Oval flange-mount package, offset bottom leads

# **AAA411-001 01**

## **leads on a circle**

## **T003**

A set of flange-mount package outline styles with bottom pins on a circle of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG004-001 terminal circle diameter  
AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG018-001 flange zone height  
AAG029-001 terminal length  
AAG039-001 mounting hole diameter  
AAG042-001 mounting hole separation  
AAG047-001 index datum angle  
AAG049-001 angular terminal spacing  
AAG083-001 larger flange radius

AAG084-001 smaller flange radius  
AAG085-001 flange overall length  
AAG086-001 flange overall width

DAA016-001 Oval flange-mount package, bottom leads on circle

# **AAA412-001 01**

## **round pins**

## **T009**

A set of flange-mount package outline styles with a double row of round pins of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG019-001 flange height  
AAG027-001 index width  
AAG029-001 terminal length  
AAG039-001 mounting hole diameter  
AAG040-001 terminal emergence height  
AAG042-001 mounting hole separation  
AAG043-001 curve radius  
AAG046-001 package overhang  
AAG053-001 terminal row spacing  
AAG081-001 lid length

DAA017-001 Flange-mount package, dual-in-line leads

# **AAA413-001 01**

## **straight flat leads**

## **T011**

A set of flange-mount package outline styles with a single row of straight, flat, through-hole leads of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG005-001 stand-off major dimension  
AAG008-001 terminal width  
AAG012-001 terminal thickness  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG018-001 flange zone height  
AAG031-001 terminal length  
AAG039-001 mounting hole diameter  
AAG040-001 terminal emergence height  
AAG042-001 mounting hole separation  
AAG063-001 flange length  
AAG111-001 terminal length

DAA018-001 Flange-mount package, single row, straight flat leads



**AAA414-001 01****straight V-section leads****T023**

A set of flange-mount package outline styles with a single row of straight, V-section, through-hole leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG005-001 stand-off major dimension  
 AAG009-001 terminal diameter  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing  
 AAG018-001 flange zone height  
 AAG031-001 terminal length  
 AAG039-001 mounting hole diameter  
 AAG040-001 terminal emergence height  
 AAG042-001 mounting hole separation  
 AAG063-001 flange length  
 AAG111-001 terminal length

DAA019-001 Flange-mount package, single row, straight V-section leads

**AAA415-001 01****straight flat leads****T011**

A set of flange-mount package outline styles with straight, flat, through-hole leads in a zig-zag pattern of which each outline style can be described with the same group of data element types.

**AAA416-001 01****straight V-section leads****T023**

A set of flange-mount package outline styles with straight, V-section, through-hole leads in a zig-zag pattern of which each outline style can be described with the same group of data element types.

**AAA417-001 01****straight flat leads****T011**

A set of dual flat-pack package outline styles with straight, flat leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG008-001 terminal width  
 AAG012-001 terminal thickness  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing  
 AAG021-001 package width zone  
 AAG024-001 overall width  
 AAG034-001 terminal length  
 AAG040-001 terminal emergence height  
 AAG046-001 package overhang

DAA020-001 Dual flat pack

**AAA418-001 01****standard form****T000**

A set of quad flat-pack package outline styles with gull-wing leads in standard form of which each outline style can be described with the same group of data element types.

**AAG055-001 body variant code****Subclasses**

AAA454-001 non-bumped package

**AAA419-001 01****solder ball****T012**

A set of grid-array package outline styles with bottom solder balls of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG002-001 stand-off height  
 AAG003-001 package height  
 AAG009-001 terminal diameter  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing  
 AAG053-001 terminal row spacing  
 AAG080-001 terminal row spacing  
 AAG107-001 terminal pattern  
 AAG109-001 quantity of terminal positions  
 AAG110-001 quantity of terminal positions  
 AAG112-001 terminal reference position  
 AAG113-001 terminal reference position

DAA021-001 Ball-grid array package

**AAA420-001 01****round pin****T009**

A set of pin-grid-array package outline styles with round pins of which each outline style can be described with the same group of data element types.

**AAG055-001 body variant code****Subclasses**

AAA455-001 cavity up  
 AAA456-001 cavity down



# **AAA421-001 01**

## **round pin**

**T009**

A set of dual-in-line package outline styles with rectangular pins of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG002-001 stand-off height  
AAG003-001 package height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG029-001 terminal length  
AAG044-001 terminal reference position  
AAG046-001 package overhang  
AAG053-001 terminal row spacing

DAA022-001 Dual-in-line package, rectangular pins

# **AAA422-001 01**

## **rectangular pin**

**T010**

A set of dual-in-line package outline styles with round pins of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG002-001 stand-off height  
AAG003-001 package height  
AAG008-001 terminal width  
AAG012-001 terminal thickness  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG029-001 terminal length  
AAG044-001 terminal reference position  
AAG046-001 package overhang  
AAG053-001 terminal row spacing

DAA023-001 Dual-in-line package, round pins

# **AAA423-001 01**

## **standard form**

**T000**

A set of dual-in-line package outline styles with through-hole leads in standard form of which each outline style can be described with the same group of data element types.

### **Properties**

AAG001-001 seated height  
AAG002-001 stand-off height  
AAG003-001 package height  
AAG005-001 stand-off major dimension  
AAG008-001 terminal width  
AAG012-001 terminal thickness  
AAG013-001 package length  
AAG016-001 package width

AAG017-001 terminal spacing  
AAG029-001 terminal length  
AAG036-001 mounted width  
AAG046-001 package overhang  
AAG051-001 angular terminal spread  
AAG087-001 terminal row spacing  
AAG088-001 terminal row splay

DAA024-001 Dual-in-line package, standard through-hole leads

# **AAA424-001 01**

## **standard form**

**T000**

A set of quad-in-line package outline styles with through-hole leads in standard form of which each outline style can be described with the same group of data element types.

# **AAA425-001 01**

## **standard form**

**T000**

A set of single-in-line package outline styles with through-hole leads in standard form of which each outline style can be described with the same group of data element types.

# **AAA426-001 01**

## **standard form**

**T000**

A set of triple-in-line package outline styles with through-hole leads in standard form of which each outline style can be described with the same group of data element types.

# **AAA427-001 01**

## **standard form**

**T000**

A set of zigzag-in-line package outline styles with through-hole leads in standard form of which each outline style can be described with the same group of data element types.

# **AAA428-001**

**01**

## **straight leads**

**T001**

A set of long-form package outline styles with straight axial wire leads of which each outline style can be described with the same group of data element types.

**AAA429-002 01****one fixed tag****T013**

A set of post-mount package outline styles with one upper solder-lug connection of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG014-001 package diameter  
 AAG018-001 flange zone height  
 AAG062-001 package diameter  
 AAG092-001 package height zone  
 AAG093-002 stud thread diameter  
 AAG095-001 stud length  
 AAG096-001 stud thread  
 AAG116-001 package diameter  
 AAG118-001 tag hole diameter  
 AAG131-001 hexagon width  
 AAG133-001 non-threaded stud length

DAA025-002 Stud-mount package, one fixed tag

**AAA430-002 01****two fixed tags****T014**

A set of post-mount package outline styles with two upper solder-lug connections of which each outline style can be described with the same group of data element types.

**Properties**

AAG014-001 package diameter  
 AAG018-001 flange zone height  
 AAG062-001 package diameter  
 AAG092-001 package height zone  
 AAG093-002 stud thread diameter  
 AAG095-001 stud length  
 AAG096-001 stud thread  
 AAG119-001 tag hole diameter  
 AAG120-001 tag hole diameter  
 AAG131-001 hexagon width  
 AAG133-001 non-threaded stud length

DAA026-002 Stud-mount package, two fixed tags

**AAA431-002 01****one lead with tag****T015**

A set of post-mount package outline styles with one upper high-current cable connection with tag of which each outline style can be described with the same group of data element types.

**Properties**

AAG014-001 package diameter  
 AAG018-001 flange zone height  
 AAG062-001 package diameter  
 AAG093-002 stud thread diameter  
 AAG095-001 stud length  
 AAG096-001 stud thread  
 AAG118-001 tag hole diameter  
 AAG121-001 tag hole distance

AAG124-001 height zone  
 AAG131-001 hexagon width  
 AAG133-001 non-threaded stud length

DAA027-002 Stud-mount package, one flexible lead with tag

**AAA432-002 01****two leads with tags****T016**

A set of post-mount package outline styles with two upper high-current cable connections with tags of which each outline style can be described with the same group of data element types.

**Properties**

AAG014-001 package diameter  
 AAG018-001 flange zone height  
 AAG062-001 package diameter  
 AAG093-002 stud thread diameter  
 AAG095-001 stud length  
 AAG096-001 stud thread  
 AAG119-001 tag hole diameter  
 AAG120-001 tag hole diameter  
 AAG122-001 tag hole distance  
 AAG123-001 tag hole distance  
 AAG124-001 height zone  
 AAG131-001 hexagon width  
 AAG133-001 non-threaded stud length

DAA028-002 Stud-mount package, two flexible leads with tags

**AAA433-002 01****three leads with tag****T017**

A set of post-mount package outline styles with three upper high-current cable connections with tags of which each outline style can be described with the same group of data element types.

**Properties**

AAG014-001 package diameter  
 AAG018-001 flange zone height  
 AAG062-001 package diameter  
 AAG093-002 stud thread diameter  
 AAG095-001 stud length  
 AAG096-001 stud thread  
 AAG119-001 tag hole diameter  
 AAG120-001 tag hole diameter  
 AAG122-001 tag hole distance  
 AAG123-001 tag hole distance  
 AAG124-001 height zone  
 AAG131-001 hexagon width  
 AAG133-001 non-threaded stud length

DAA029-002 Stud-mount package, three flexible leads with tags

## AAA434-002 01

### one lead no tag

**T018**

A set of post-mount package outline styles with one upper high-current cable connection without tag of which each outline style can be described with the same group of data element types.

#### Properties

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG018-001 flange zone height  
AAG062-001 package diameter  
AAG093-002 stud thread diameter  
AAG095-001 stud length  
AAG096-001 stud thread  
AAG116-001 package diameter  
AAG124-001 height zone  
AAG125-001 overall height  
AAG131-001 hexagon width  
AAG133-001 non-threaded stud length

DAA030-002 Stud-mount package, one flexible lead, no tag

## AAA435-001 01

### strip leads

**T019**

A set of rectangular package outline styles with axial strip leads of which each outline style can be described with the same group of data element types.

#### Properties

AAG001-001 seated height  
AAG008-001 terminal width  
AAG012-001 terminal thickness  
AAG013-001 package length  
AAG016-001 package width  
AAG111-001 terminal length

DAA031-001 Rectangular package, axial strip leads

## AAA436-001 01

### off-set leads

**T007**

A set of rectangular package outline styles with axial offset solder lugs of which each outline style can be described with the same group of data element types.

#### Properties

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG044-001 terminal reference position  
AAG090-001 overall length  
AAG091-001 bent terminal spacing  
AAG111-001 terminal length

DAA032-001 Rectangular package, offset axial wire leads

## AAA437-001 01

### straight leads

**T001**

A set of rectangular package outline styles with straight bottom wire leads of which each outline style can be described with the same group of data element types.

#### Properties

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG129-001 terminal length

DAA033-001 Rectangular package, straight bottom leads

## AAA438-001 01

### formed leads

**T002**

A set of rectangular package outline styles with formed bottom wire leads of which each outline style can be described with the same group of data element types.

#### Properties

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG129-001 terminal length

DAA034-001 Rectangular package, formed bottom leads

## AAA439-001 01

### standard form

**T000**

A set of leadless rectangular package outline styles in standard form with end connections of which each outline style can be described with the same group of data element types.

#### Properties

AAG001-001 seated height  
AAG013-001 package length  
AAG016-001 package width  
AAG031-001 terminal length  
AAG032-001 terminal length

DAA035-001 Rectangular package, metallised ends

**AAA440-001 01****standard form****T000**

A set of rectangular package outline styles with wrap-around end connections in standard form of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG002-001 stand-off height  
 AAG016-001 package width  
 AAG040-001 terminal emergence height  
 AAG052-001 terminal seating angle  
 AAG076-001 terminal width  
 AAG077-001 terminal length  
 AAG090-001 overall length  
 AAG104-001 drawing sequence code  
 AAG105-001 bent terminal spacing

DAA036-001 Rectangular package, wrap-around terminations

**AAA441-001 01****multiple leads****T020**

A set of dual small package outline styles with multiple gull-wing leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG002-001 stand-off height  
 AAG003-001 package height  
 AAG012-001 terminal thickness  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing  
 AAG024-001 overall width  
 AAG034-001 terminal length  
 AAG046-001 package overhang  
 AAG052-001 terminal seating angle  
 AAG076-001 terminal width  
 AAG077-001 terminal length

DAA037-001 Dual small-outline package, multiple gull-wing leads

**AAA442-001 01****three leads****T021**

A set of dual small package outline styles with three gull-wing leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG002-001 stand-off height  
 AAG003-001 package height  
 AAG012-001 terminal thickness  
 AAG013-001 package length  
 AAG016-001 package width

AAG017-001 terminal spacing  
 AAG024-001 overall width  
 AAG034-001 terminal length  
 AAG046-001 package overhang  
 AAG052-001 terminal seating angle  
 AAG076-001 terminal width  
 AAG077-001 terminal length

DAA038-001 Small-outline package, three gull-wing leads

**AAA443-001 01****standard form****T000**

A set of quad small package outline styles with gull-wing leads in standard form of which each outline style can be described with the same group of data element types.

**AAA444-001 01****two leads, stub and tab****T022**

A set of single small package outline styles with two gull-wing leads, a stub and a tab of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG012-001 terminal thickness  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing  
 AAG019-001 flange height  
 AAG031-001 terminal length  
 AAG034-001 terminal length  
 AAG040-001 terminal emergence height  
 AAG063-001 flange length  
 AAG076-001 terminal width  
 AAG077-001 terminal length  
 AAG114-001 flange width

DAA039-001 Small-outline package, two gull-wing leads, stub and tab

**AAA445-001 01****non-bumped package****B002**

A set of quad non-bumped chip-carrier package outline styles with standard J-bend leads of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG002-001 stand-off height  
 AAG003-001 package height  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing  
 AAG023-001 overall length  
 AAG024-001 overall width  
 AAG028-001 index length

AAG053-001 terminal row spacing  
AAG076-001 terminal width  
AAG077-001 terminal length  
AAG079-001 other index length  
AAG080-001 terminal row spacing  
AAG109-001 quantity of terminal positions  
AAG110-001 quantity of terminal positions  
AAG130-001 index angle

DAA040-001 Quad chip carrier, J-bend leads, non-bumped package

#### **AAA446-001 01**

##### **Non-cavity package (moulded) B009**

A set of quad leadless chip-carrier non-cavity package outline styles with standard leads of which each outline style can be described with the same group of data element types.

##### **Properties**

AAG001-001 seated height  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG028-001 index length  
AAG053-001 terminal row spacing  
AAG076-001 terminal width  
AAG077-001 terminal length  
AAG078-001 lid height  
AAG080-001 terminal row spacing  
AAG081-001 lid length  
AAG082-001 lid width  
AAG109-001 quantity of terminal positions  
AAG110-001 quantity of terminal positions  
AAG112-001 terminal reference position  
AAG113-001 terminal reference position  
AAG115-001 index terminal length

DAA041-001 Quad chip carrier, leadless non-cavity package (moulded)

#### **AAA447-001 01**

##### **cavity package (ceramic) B010**

A set of quad leadless chip-carrier cavity package outline styles with standard leads of which each outline style can be described with the same group of data element types.

##### **Properties**

AAG001-001 seated height  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG028-001 index length  
AAG053-001 terminal row spacing  
AAG076-001 terminal width  
AAG077-001 terminal length  
AAG078-001 lid height  
AAG079-001 other index length  
AAG080-001 terminal row spacing  
AAG081-001 lid length  
AAG082-001 lid width  
AAG109-001 quantity of terminal positions

AAG110-001 quantity of terminal positions  
AAG112-001 terminal reference position  
AAG113-001 terminal reference position  
AAG115-001 index terminal length

DAA042-001 Quad chip carrier, leadless cavity package (ceramic)

#### **AAA448-001 01**

##### **plain cylindrical**

**B003**

A set of plain cylindrical package outline styles with straight axial wire leads of which each outline style can be described with the same group of data element types.

##### **Properties**

AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG089-001 package length  
AAG090-001 overall length  
AAG091-001 bent terminal spacing  
AAG111-001 terminal length

DAA043-001 Cylindrical package, straight axial wire leads

#### **AAA449-001 01**

##### **top hat package**

**B004**

A set of top-hat cylindrical package outline styles with straight axial wire leads of which each outline style can be described with the same group of data element types.

##### **Properties**

AAG001-001 seated height  
AAG009-001 terminal diameter  
AAG014-001 package diameter  
AAG018-001 flange zone height  
AAG062-001 package diameter  
AAG091-001 bent terminal spacing  
AAG098-001 main terminal length  
AAG099-001 secondary terminal length  
AAG100-001 main overall length  
AAG101-001 secondary overall length  
AAG102-001 slug diameter  
AAG103-001 slug width

DAA044-001 Top-hat package, straight axial wire leads

#### **AAA450-001 01**

##### **clamp mount package**

**B005**

A set of cylindrical clamp-mount package outline styles with upper solder-lug connections in standard form of which each outline style can be described with the same group of data element types.



**Properties**

AAG001-001 seated height  
 AAG008-001 terminal width  
 AAG012-001 terminal thickness  
 AAG014-001 package diameter  
 AAG017-001 terminal spacing  
 AAG111-001 terminal length  
 AAG117-001 tag hole width

DAA045-001 Cylindrical package, top tag terminals, clamp mount

**AAA451-002 01****stud mount package****B006**

A set of cylindrical stud-mount package outline styles with upper solder-lug connections in standard form of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG008-001 terminal width  
 AAG012-001 terminal thickness  
 AAG014-001 package diameter  
 AAG017-001 terminal spacing  
 AAG092-001 package height zone  
 AAG093-002 stud thread diameter  
 AAG095-001 stud length  
 AAG096-001 stud thread  
 AAG111-001 terminal length  
 AAG117-001 tag hole width  
 AAG133-001 non-threaded stud length

DAA046-002 Cylindrical package, top tag terminals, stud mount

**AAA452-001 01****clamp mount package****B005**

A set of cylindrical clamp-mount package outline styles with upper screw connections in standard form of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG008-001 terminal width  
 AAG012-001 terminal thickness  
 AAG014-001 package diameter  
 AAG017-001 terminal spacing  
 AAG092-001 package height zone  
 AAG094-002 terminal thread diameter  
 AAG097-001 terminal thread

DAA047-002 Cylindrical package, top screw terminals, clamp mount

**AAA453-002 01****stud mount package****B006**

A set of cylindrical stud-mount package outline styles with upper screw connections in standard form

of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG008-001 terminal width  
 AAG012-001 terminal thickness  
 AAG014-001 package diameter  
 AAG017-001 terminal spacing  
 AAG092-001 package height zone  
 AAG093-002 stud thread diameter  
 AAG094-002 terminal thread diameter  
 AAG095-001 stud length  
 AAG096-001 stud thread  
 AAG097-001 terminal thread  
 AAG133-001 non-threaded stud length

DAA048-002 Cylindrical package, top screw terminals, stud mount

**AAA454-001 01****non-bumped package****B002**

A set of quad flat-pack non-bumped package outline styles with gull-wing leads in standard form of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG002-001 stand-off height  
 AAG003-001 package height  
 AAG012-001 terminal thickness  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing  
 AAG023-001 overall length  
 AAG024-001 overall width  
 AAG052-001 terminal seating angle  
 AAG053-001 terminal row spacing  
 AAG076-001 terminal width  
 AAG077-001 terminal length  
 AAG080-001 terminal row spacing  
 AAG109-001 quantity of terminal positions  
 AAG110-001 quantity of terminal positions

DAA049-001 Quad flat pack, gull-wing leads, non-bumped package

**AAA455-001 01****cavity up****B007**

A set of pin-grid-array cavity-up package outline styles with round pins of which each outline style can be described with the same group of data element types.

**Properties**

AAG001-001 seated height  
 AAG002-001 stand-off height  
 AAG003-001 package height  
 AAG009-001 terminal diameter  
 AAG013-001 package length  
 AAG016-001 package width  
 AAG017-001 terminal spacing



AAG078-001 lid height  
AAG081-001 lid length  
AAG082-001 lid width  
AAG107-001 terminal pattern  
AAG109-001 quantity of terminal positions  
AAG110-001 quantity of terminal positions  
AAG112-001 terminal reference position  
AAG113-001 terminal reference position

DAA050-001 Pin-grid array package, cavity up

#### AAA456-001 01

**cavity down**

**B008**

A set of pin-grid-array cavity-down package outline styles with round pins of which each outline style can be described with the same group of data element types.

##### Properties

AAG001-001 seated height  
AAG002-001 stand-off height  
AAG003-001 package height  
AAG009-001 terminal diameter  
AAG013-001 package length  
AAG016-001 package width  
AAG017-001 terminal spacing  
AAG078-001 lid height  
AAG081-001 lid length  
AAG082-001 lid width  
AAG107-001 terminal pattern  
AAG109-001 quantity of terminal positions  
AAG110-001 quantity of terminal positions  
AAG112-001 terminal reference position  
AAG113-001 terminal reference position

DAA051-001 Pin-grid array package, cavity down

#### AAA501-001 01

**Solid tantalum electrolytics** **STAN**

A set of fixed electrolytic capacitors in which the oxide film formed on the surface of foil, wire or sintered slug of tantalum by anodic oxidation is employed as the dielectric, and solid electrolyte in close contact with this dielectric is employed as a part of the cathode and for which each capacitor is described by the same set of data element types.

#### AAA502-001 01

**Non-solid tantalum electrolytics** **NTAN**

A set of fixed electrolytic capacitors in which the oxide formed on the surface of tantalum by anodic oxidation is employed as the dielectric and paper or fibre impregnated with liquid electrolyte and located in close contact with this dielectric is employed as a part of cathode and for which each capacitor is described by the same set of data element types.

#### AAA503-001 01

**Solid aluminium electrolytics** **SAL**

A set of fixed electrolytic capacitors in which the oxide film formed on the surface of foil, wire or sintered slug of aluminium by anodic oxidation is employed as the dielectric, and solid electrolyte in close contact with this dielectric is employed as a part of cathode and for which each capacitor is described by the same set of data element types.

##### Properties

AAJ007-001 built-in fuse

#### AAA504-001 01

**Non-solid aluminium electrolytics** **NAL**

A set of fixed electrolytic capacitors in which the oxide formed on the surface of aluminium foil by anodic oxidation is employed as the dielectric and paper or fibre impregnated with liquid electrolyte and located in close contact with this dielectric is employed as a part of the cathode and for which each capacitor is described by the same set of data element types.

#### AAA505-001 01

**Fixed mixed-dielectric capacitors** **MIX**

A set of fixed capacitors in which the dielectric is formed from layers of two or more different materials and for which each capacitor is described by the same set of data element types.

#### AAA509-001 01

**Fixed precision resistors** **PREC**

A set of fixed resistors having stable characteristics for which each resistor is described by the same set of data element types.

#### AAA510-001 01

**Fixed power resistors** **PWR**

A set of fixed resistors intended for high-power applications for which each resistor is described by the same set of data element types.

##### Properties

AAJ009-001 structure

#### AAA511-001 01

**Fixed low-power resistors** **LP**

A set of fixed resistors intended for low-power applications for which each resistor is described by the same set of data element types.

**AAA512-001 01****Fixed chip resistors CHIP**

A set of fixed resistors intended for surface-mount applications for which each resistor is described by the same set of data element types.

**AAA513-001 01****Fixed thermostat resistors THERM**

A set of fixed resistors for use in thermostats for which each resistor is described by the same set of data element types.

**Properties**

AAJ013-001 tolerance of TC of resistance

**AAA514-001 01****Fixed fusing resistors FUS**

A set of fixed fusing resistors for which each resistor is described by the same set of data element types.

**Properties**

AAJ011-001 fusing power

**AAA516-002 01****Preset potentiometers PRESET**

A set of potentiometers which are intended to provide a fixed resistance ratio once the slider position has been set for which each potentiometer is described by the same set of data element types.

**NOTE**

PRESET POTENTIOMETERS are potentiometers which can be mechanically adjusted with a tool but which are not intended for adjustment during normal operation.

**Properties**

AAE173-005 total mechanical rotation  
AAJ015-001 rotation torque  
AAJ017-001 adjustment direction  
AAJ018-001 sealing class  
AAJ123-001 potentiometer type  
AAJ124-001 number of turns

**AAA517-001 01****Linear slide potentiometers SLIDE**

A set of potentiometers in which adjustment is performed by the linear movement of a slider and for which each potentiometer is described by the same set of data element types.

**NOTE**

LINEAR SLIDE POTENTIOMETERS are potentiometers which can be mechanically adjusted by moving the adjuster along a linear path.

**Properties**

AAJ019-001 slide length  
AAJ020-001 slide force  
AAJ021-001 lever stop force

**AAA518-001 01****Circular connectors CIRC**

A set of connectors with circular shell or housing for which each connector is described by the same set of data element types.

**AAA519-001 01****Rectangular connectors RECT**

A set of connectors with contacts in a rectangular or near-rectangular array for which each connector is described by the same set of data element types.

**AAA520-001 01****PCB connectors PCB**

A set of connectors intended for use with printed-circuit boards for which each connector is described by the same set of data element types.

**Properties**

AAJ022-001 PCB connector type  
AAJ040-001 circuit board thickness

**AAA521-001 01****RF connectors RF**

A set of connectors intended for use at radio frequencies for which each connector is described by the same set of data element types.

**Properties**

AAE487-005 frequency band  
AAF260-005 characteristic impedance  
AAJ041-001 voltage standing wave ratio

**AAA522-001 01****Connectors for IC cards IC**

A set of connectors intended for use with IC cards for which each connector is described by the same set of data element types.

**Properties**

AAJ040-001 circuit board thickness

**AAA523-001 01****Modular connectors MOD**

A set of modular connectors for which each connector is described by the same set of data element types.

## AAA524-001 01

### Connector contacts

### CONTACT

A set of connector contacts of which each contact can be described with the same group of data element types.

#### NOTE

CONNECTOR CONTACTS are the conducting parts within a connector which mate individually to form the electrical connection.

#### Properties

AAE350-005 contact finish  
AAE353-005 contact sex  
AAE358-005 contact current max  
AAJ023-001 contact type

## AAA525-001 01

### Connector accessories

### ACCY

A set of accessories for connectors of which each accessory can be described with the same group of data element types.

#### NOTE

CONNECTOR ACCESSORIES are components which may be used with connectors to facilitate their use in a wide range of applications. Accessories perform no electrical function and include such items as caps, covers, gaskets washers and boots.

#### Properties

AAF465-001 accessory type

## AAA526-001 01

### Plugs and jacks

### JACK

A set of plug or jack connectors for which each connector is described by the same set of data element types.

## AAJ024-001 plug/jack type

#### Subclasses

AAA536-001 Concentric plugs and jacks  
AAA540-001 Pin plugs and jacks  
AAA545-001 Plugs and jacks for dc power  
AAA549-001 Plug assemblies  
AAA550-001 Complex jack boards

## AAA527-001 01

### Sockets

### SOCK

A set of sockets for mounting and connecting to electric/electronic components for which each socket is described by the same set of data element types.

## AAJ028-001 socket type

#### Subclasses

AAA551-001 Sockets for tubes  
AAA554-001 Transistor sockets  
AAA555-001 Sockets for integrated circuits  
AAA556-001 Sockets for PCB  
AAA557-001 Power sockets  
AAA561-001 Signal sockets  
AAA562-001 Sockets for quartz crystals  
AAA563-001 Lighting sockets  
AAA564-001 Fuse holders and sockets  
AAA565-001 Sockets for antenna feeders

## AAA528-001 01

### Terminals

### TERM

A set of terminals for which each terminal is described by the same set of data element types.

## AAJ031-001 terminal type

#### Subclasses

AAA566-001 Small terminals  
AAA569-001 Terminal arrays  
AAA572-001 Terminal boards  
AAA573-001 Terminal rods

## AAA536-001 01

### Concentric plugs and jacks

### CONC

A set of concentric plugs and jacks for which each connector is described by the same set of data element types.

## AAJ025-001 concentric plug/jack type

#### Subclasses

AAA537-001 Concentric plugs  
AAA538-001 Concentric jacks  
AAA539-001 Concentric multiple jacks

## AAA537-001 01

### Concentric plugs

### PLUG

A set of concentric plugs for which each plug is described by the same set of data element types.

## AAA538-001 01

### Concentric jacks

### JACK

A set of concentric jacks for which each jack is described by the same set of data element types.

#### Properties

AAJ045-001 direction of insertion

**AAA539-001 01****Multiple concentric jacks MULT**

A set of multiple concentric jacks for which each jack is described by the same set of data element types.

**Properties**

AAJ045-001 direction of insertion

**AAA540-001 01****Pin plugs and jacks PIN**

A set of pin plugs and jacks for which each connector is described by the same set of data element types.

**AAJ026-001 pin plug/jack type****Subclasses**

AAA541-001 Pin plugs  
AAA542-001 Pin jacks  
AAA543-001 Pin multiple jacks  
AAA544-001 Shielded pin jacks

**AAA541-001 01****Pin plugs PLUG**

A set of pin plugs for which each plug is described by the same set of data element types.

**AAA542-001 01****Pin jacks JACK**

A set of pin jacks for which each jack is described by the same set of data element types.

**Properties**

AAJ045-001 direction of insertion

**AAA543-001 01****Multiple pin jacks MULT**

A set of shielded pin jacks for which each jack is described by the same set of data element types.

**Properties**

AAJ045-001 direction of insertion

**AAA544-001 01****Shielded pin jacks SHLD**

A set of multiple pin jacks for which each jack is described by the same set of data element types.

**Properties**

AAJ045-001 direction of insertion

**AAA545-001 01****Plugs and jacks for dc power PWR**

A set of plugs and jacks for use in dc power applications for which each connector is described by the same set of data element types.

**AAJ027-001 dc power plug/jack type****Subclasses**

AAA546-001 DC power plugs  
AAA547-001 DC power jacks  
AAA548-001 Car plugs

**AAA546-001 01****DC power plugs PLUG**

A set of plugs for use in dc power applications for which each plug is described by the same set of data element types.

**AAA547-001 01****DC power jacks JACK**

A set of jacks for use in dc power applications for which each jack is described by the same set of data element types.

**Properties**

AAJ045-001 direction of insertion

**AAA548-001 01****Car plugs CAR**

A set of plugs for use in dc power applications in automobiles for which each plug is described by the same set of data element types.

**AAA549-001 01****Plug assemblies ASSY**

A set of plug assemblies for which each assembly is described by the same set of data element types.

**AAA550-001 01****Complex jack boards CMLX**

A set of complex jack boards for which each jack board is described by the same set of data element types.

# **AAA551-001 01**

## **Sockets for tubes TUBE**

A set of sockets for mounting and connecting to vacuum tubes for which each socket is described by the same set of data element types.

### **Properties**

AAJ029-001 tube socket type

# **AAA554-001 01**

## **Transistor sockets TRA**

A set of sockets for mounting and connecting to transistors for which each socket is described by the same set of data element types.

# **AAA555-001 01**

## **Sockets for integrated circuits IC**

A set of sockets for mounting and connecting to integrated circuits for which each socket is described by the same set of data element types.

### **Properties**

AAJ046-001 package type

# **AAA556-001 01**

## **Sockets for PCB PCB**

A set of sockets for mounting and connecting to PC boards for which each socket is described by the same set of data element types.

# **AAA557-001 01**

## **Power sockets PWR**

A set of connectors for which each connector is described by the same set of data element types.

### **Properties**

AAE512-005 contact voltage (ac)  
AAE515-005 contact current (ac)  
AAF106-005 contact current (dc)  
AAF107-005 contact voltage (dc)  
AAJ030-001 power socket type  
AAJ047-001 switch type

# **AAA561-001 01**

## **Signal sockets SIG**

A set of sockets for which each socket is described by the same set of data element types.

# **AAA562-001 01**

## **Sockets for quartz crystals XTAL**

A set of sockets for mounting and connecting to quartz crystals for which each socket is described by the same set of data element types.

# **AAA563-001 01**

## **Lighting sockets LIGHT**

A set of sockets intended for use in lighting applications for which each socket is described by the same set of data element types.

# **AAA564-001 01**

## **Fuse holders and sockets FUSE**

A set of sockets or holders for mounting and connecting to fuses for which each socket or holder is described by the same set of data element types.

# **AAA565-001 01**

## **Sockets for antenna feeders ANT**

A set of sockets intended for connection to antenna feeders for which each socket is described by the same set of data element types.

# **AAA566-001 01**

## **Small terminals SM**

A set of small terminals for which each terminal is described by the same set of data element types.

### **NOTE**

SMALL TERMINALS are terminals which typically only have the facility for connecting one, two or three conductors.

### **Properties**

AAJ032-001 small terminal type

# **AAA569-001 01**

## **Terminal arrays ARRY**

A set of terminal arrays for which each array is described by the same set of data element types.

### **Properties**

AAJ033-001 terminal array type

**AAA572-001 01****Terminal boards****BRD**

A set of terminal boards for which each terminal board is described by the same set of data element types.

**AAA573-001 01****Terminal rods****ROD**

A set of terminal rods for which each terminal rod is described by the same set of data element types.

**AAA575-001 01****Current-activated fuses****CUR**

A set of fuses activated by excess current for which each fuse is described by the same set of data element types.

**AAA576-001 01****Thermally-activated fuses****THERM**

A set of thermally-activated fuses for which each fuse is described by the same set of data element types.

**Properties**

AAJ036-001 active element

**AAA578-001 01****Fibre optics****FIBOPTIC**

A set of fibre optic devices for which each component can be described by the same set of data element types.

**AAJ048-001 fibre optic component****Subclasses**

AAA579-001 Fibre optic links  
 AAA580-001 Fibre optic connectors  
 AAA581-001 Fibre optic switches  
 AAA582-001 Fibre optic branches  
 AAA583-001 Fibre optic couplers/splicers  
 AAA584-001 Fibre optic attenuators  
 AAA585-001 Fibre optic detectors  
 AAA586-001 Fibre optic isolators  
 AAA587-001 Fibre optic networks  
 AAA588-001 Fibre optic light sources  
 AAA589-001 Fibre optic modulators  
 AAA590-001 Fibre optic transmitters and receivers  
 AAA591-001 Optical waveguiders  
 AAA592-001 Fibre optic cables  
 AAA593-001 Fibre optic filters  
 AAA594-001 Fibre optic lenses

**AAA579-001 01****Fibre optic links****LINK**

A set of fibre optic links for which each component can be described by the same set of data element types.

**AAA580-001 01****Fibre optic connectors****CONN**

A set of fibre optic connectors for which each connector can be described by the same set of data element types.

**AAA581-001 01****Fibre optic switches****SWI**

A set of fibre optic switches for which each switch can be described by the same set of data element types.

**AAA582-001 01****Fibre optic branches****BRA**

A set of fibre optic branches for which each component can be described by the same set of data element types.

**AAA583-001 01****Fibre optic couplers/splicers****COUP**

A set of fibre optic couplers or splicers for which each component can be described by the same set of data element types.

**AAA584-001 01****Fibre optic attenuators****ATT**

A set of fibre optic attenuators for which each component can be described by the same set of data element types.

**AAA585-001 01****Fibre optic detectors****DET**

A set of fibre optic detectors for which each component can be described by the same set of data element types.

**AAA586-001 01****Fibre optic isolators****ISOL**

A set of fibre optic isolators for which each component can be described by the same set of data element types.





**AAA602-001 01****Variable inductors****VAR**

A set of fixed inductors of which each inductor can be described with the same group of data element types.

**Properties**

AAJ078-001 variable inductor type  
AAJ079-001 minimum inductance  
AAJ080-001 maximum inductance

**AAA603-001 01****Antenna inductors****ANT**

A set of inductors for use with antennas of which each inductor can be described with the same group of data element types.

**AAA604-001****01****Solenoids****SOL**

A set of solenoids of which each solenoid can be described with the same group of data element types.

**AAA605-001 01****Air spark gaps****AIR**

A set of air spark gaps of which each spark gap can be described with the same group of data element types.

**AAA606-001 01****Gas-filled spark gaps****GAS**

A set of gas-filled spark gaps of which each spark gap can be described with the same group of data element types.

**Properties**

AAJ085-001 withstanding voltage  
AAJ086-001 surge current

**AAA607-001 01****Rotary precision potentiometers****PRECROT**

A set of precision potentiometers with continuously-variable rotary adjustment for which each potentiometer is described by the same set of data element types.

**NOTE**

PRECISION ROTARY POTENTIOMETERS are potentiometers for which the mechanical adjustment is achieved by turning a shaft and whose position can be set with a high degree of precision.

**Properties**

AAE145-005 spindle material of potentiometer  
AAE147-005 spindle length  
AAE148-005 spindle diameter  
AAE173-005 total mechanical rotation  
AAJ014-001 potentiometer size  
AAJ015-001 rotation torque  
AAJ123-001 potentiometer type  
AAJ124-001 number of turns

**AAA608-001 01****Power rotary potentiometers****PWRROT**

A set of power potentiometers with continuously-variable rotary adjustment for which each potentiometer is described by the same set of data element types.

**NOTE**

POWER ROTARY POTENTIOMETERS are potentiometers for which the mechanical adjustment is achieved by turning a shaft and which are typically capable of dissipating powers of more than 10 W.

**Properties**

AAE145-005 spindle material of potentiometer  
AAE147-005 spindle length  
AAE148-005 spindle diameter  
AAE173-005 total mechanical rotation  
AAJ014-001 potentiometer size  
AAJ015-001 rotation torque  
AAJ123-001 potentiometer type  
AAJ124-001 number of turns

**AAA609-001 01****Low-power rotary potentiometers****LPROT**

A set of low-power potentiometers with continuously-variable rotary adjustment for which each potentiometer is described by the same set of data element types.

**NOTE**

LOW-POWER ROTARY POTENTIOMETERS are potentiometers for which the mechanical adjustment is achieved by turning a shaft and which are typically able to dissipate powers up to 10 W.

**Properties**

AAE145-005 spindle material of potentiometer  
AAE147-005 spindle length  
AAE148-005 spindle diameter  
AAE173-005 total mechanical rotation  
AAJ014-001 potentiometer size  
AAJ015-001 rotation torque  
AAJ123-001 potentiometer type  
AAJ124-001 number of turns

## AAA610-001 01

### Connector parts

### CONPART

A set of connector parts of which each part can be described with the same group of data element types.

#### NOTE

CONNECTOR PARTS are components which may be used to assemble complete connectors, which are used as accessories to a connector or which are needed in the assembly or disassembly of connectors.

### AAF464-001 connector part type

#### Subclasses

AAA524-001 Connector contacts  
AAA525-001 Connector accessories  
AAA611-001 Connector tools  
AAA612-001 Connector shells  
AAA613-001 Connector inserts

## AAA611-001 01

### Connector tools

### TOOL

A set of connector tools of which each tool can be described with the same group of data element types.

#### NOTE

CONNECTOR TOOLS are tools which are needed for the assembly, disassembly, installation or repair of connectors. They include such items as spanners, keys, jigs and gauges.

#### Properties

AAF466-001 tool type

## AAA612-001 01

### Connector shells

### SHELL

A set of connector shells of which each shell can be described with the same group of data element types.

#### NOTE

CONNECTOR SHELLS are the external housing of connectors which normally provide the mechanical mating.

#### Properties

AAE351-006 housing material  
AAF467-001 shell type

## AAA613-001 01

### Connector inserts

### INSERT

A set of connector inserts of which each insert can be described with the same group of data element types.

#### NOTE

CONNECTOR INSERTS are formed from insulating material and provide the mechanical support for the connector contacts within the connector shell.

#### Properties

AAF468-001 insert type  
AAF469-001 insert material

## Annex C (normative)

### Data element type definitions

|                                                                                                                                                                                                                                                                                                                                                                       |                     |                        |            |                                                                                                                                                                                                                                                              |                     |                                      |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------|------------|
| <b>AAD001-001</b>                                                                                                                                                                                                                                                                                                                                                     | <b>02</b><br>simple | <b>M..17</b><br>string | <b>A52</b> | <b>AAD004-001</b>                                                                                                                                                                                                                                            | <b>01</b><br>simple | <b>M..4</b><br>non-quantitative code | <b>A52</b> |
| <b>die identifier</b>                                                                                                                                                                                                                                                                                                                                                 |                     | <b>die ID</b>          |            | <b>die type code</b>                                                                                                                                                                                                                                         |                     | <b>die code</b>                      |            |
| A code based on the IEC 60191 code to identify the die                                                                                                                                                                                                                                                                                                                |                     |                        |            | The mnemonic code for the physical form in which the die or wafer is supplied                                                                                                                                                                                |                     |                                      |            |
| <b>NOTE</b><br>The code has the form A-XBCC-Dnn/mmm, where<br>A is a shape class code<br>X is a code for the encapsulation material<br>B is a terminal position code<br>CC is the body style code<br>D is the terminal shape code<br>nn is the number of terminals<br>mmm is a sequence number to distinguish uniquely dies whose codes would otherwise be identical. |                     |                        |            | BARE = bare die with pads on one side and without connection structure<br>BUMP = bare die with bumped pads<br>DUAL = bare die with pads on both surfaces<br>LEAD = bare die with attached lead frame<br>MPD = minimally packaged die device<br><br>IEC 62258 |                     |                                      |            |
| IEC 60191-4 (1999)                                                                                                                                                                                                                                                                                                                                                    |                     |                        |            | <b>REMARKS:</b><br>If the die or wafer is in its original form, then the code is BARE or DUAL. Die with codes BUMP or LEAD have been post-processed to add the solder bumps or metal lead frame respectively.                                                |                     |                                      |            |
| <b>AAD002-001</b>                                                                                                                                                                                                                                                                                                                                                     | <b>01</b><br>simple | <b>M..17</b><br>string | <b>A52</b> | <b>AAD005-001</b>                                                                                                                                                                                                                                            | <b>01</b><br>simple | <b>M..17</b><br>string               | <b>A57</b> |
| <b>die name</b>                                                                                                                                                                                                                                                                                                                                                       |                     | <b>die name</b>        |            | <b>substrate material</b>                                                                                                                                                                                                                                    |                     | <b>substrate</b>                     |            |
| The name or identifier given to the die by the manufacturer.                                                                                                                                                                                                                                                                                                          |                     |                        |            | The constitution of the bulk material which forms the base of the die process technology                                                                                                                                                                     |                     |                                      |            |
| IEC 62258                                                                                                                                                                                                                                                                                                                                                             |                     |                        |            | IEC 62258                                                                                                                                                                                                                                                    |                     |                                      |            |
| <b>AAD003-001</b>                                                                                                                                                                                                                                                                                                                                                     | <b>01</b><br>simple | <b>M..17</b><br>string | <b>A52</b> | <b>REMARKS:</b><br>In most cases the substrate is composed of a single material such as silicon                                                                                                                                                              |                     |                                      |            |
| <b>die version</b>                                                                                                                                                                                                                                                                                                                                                    |                     | <b>die version</b>     |            |                                                                                                                                                                                                                                                              |                     |                                      |            |
| The code given by the manufacturer to identify the version of the die.                                                                                                                                                                                                                                                                                                |                     |                        |            |                                                                                                                                                                                                                                                              |                     |                                      |            |
| IEC 62258                                                                                                                                                                                                                                                                                                                                                             |                     |                        |            |                                                                                                                                                                                                                                                              |                     |                                      |            |

**AAD006-001 02 M..4 A56**  
simple non-quantitative code

**die yield yield**  
yield

**connection requirement code conn req code**

The mnemonic code used to identify the requirement for electrical connection to the die substrate.

CONN= must be connected  
ISOL = must be isolated  
N/A = not applicable  
N/K = requirement not known  
OPT = connection optional

IEC 62258

**REMARKS:**

Where the value of the code is ISOL, no connection may be made to the substrate.

Where the value of the code is OPT, connection to the substrate is optional but any connection made must be to the supply as defined by substrate connection.

Where the value of the code is CONN, a connection from the substrate to a terminal on the die or to a supply terminal is mandatory.

Where the value of the code is N/A connection to the substrate is not appropriate or not possible.

Where the value of the code is N/K no information on the connection requirement is available.

The fraction of die (in %) as specified by level (minTyp) which function according to specification on delivery to a customer.

**NOTE**

For low defect rates, yield and DPM (in  $10^{-6}$ ) are related by the formula  $\text{yield} = 100 - \text{DPM}/1.0\text{E}4$

IEC 62258

**REMARKS:**

Where a minimum figure is quoted, this will normally be a guarantee of delivered quality. Where a typical figure is given, this is to be interpreted as an average for the processes employed.

**AAD010-001 01 M..70 A58**  
simple string

**die description die desc**

A description of the physical form of the die including information on solder bumps and lead frame where applicable.

IEC 62258

**AAD007-001 01 M..17 A56**  
simple string

**AAD011-001 01 NR2 S..3.3 T03**  
level nom real measure m

**substrate connection substr conn**

The name of the supply connection to which a substrate connection, if required, must be made.

**NOTE**

A value is not required when the substrate must be isolated.

IEC 62258

**REMARKS:**

The value to be assigned is the name of a supply connection which is defined elsewhere within a database.

**wafer size W\_size**  
W<sub>size</sub>

The diameter of the wafer on which the die is fabricated

**NOTE**

Since this is only a nominal value for information purposes, inch dimensions should be converted at the rate of 25 mm to one inch.

IEC 62258

**AAD008-001 01 M..17 A59**  
simple string

**die test level code test level**

The code or designation given by a manufacturer to the schedule of tests applied to assess the performance characteristics and to conduct burn-in for a die.

IEC 62258

**AAD009-001 01 NR2..2.2 Q59**  
level minTyp % real measure

**AAD012-001 02 NR1..4 Q56**  
level nom integer measure  
1

**termination number**  
termination identifier **n\_term**  
 $n_{term}$

A numeric value which identifies the termination uniquely for each device.

IEC 62258

**REMARKS:**

Where the manufacturer has allocated a unique number to each terminal, that numbering identification should be used.

When that is not the case, for devices with terminals around the periphery, numbers should be allocated in an anticlockwise direction starting with the terminal nearest to the top left-hand corner of the die as viewed from the side containing the terminals.

**AAD013-001 01 M..17 A91**  
simple string

**manufacturer pad identifier** **manuf pad ID**

The identification allocated to a pad by the manufacturer in his data sheet.

IEC 62258

**AAD014-001 01 M..17 A91**  
simple string

**pad geometry name** **pad geom name**

The name given to identify a particular pad geometry.

IEC 62258

**REMARKS:**

The name used is arbitrary and is only used as a link between a pad geometry definition and a pad instance. The name must be unique within the list of names for any particular die.

**AAD015-001 01 NR3 S..3.3ES2 T03**  
level nom real measure  
m

**pad x position** **pad x**  
 $pad_x$

The value (in m) of the x-coordinate of the geometric centre of a pad referred to the geometric origin of the die as origin.

**NOTE**

For polygonal pads, the geometric centre of the pad is taken as mid-way between the extremes of the x and y dimensions

IEC 62258

DAE002-001 Die dimensions

**AAD016-001 01 NR3 S..3.3ES2 T03**  
level nom real measure  
m

**pad y position** **pad y**  
 $pad_y$

The value (in m) of the y-coordinate of the geometric centre of a pad referred to the geometric origin of the die as origin

**NOTE**

For polygonal pads, the geometric centre of the pad is taken as mid-way between the extremes of the x and y dimensions

IEC 62258

DAE002-001 Die dimensions

**AAD017-001 02 M..7 A58**  
simple string

**pad orientation** **pad orientation**

The orientation code for a pad related to reference axes

**NOTE**

The pad orientation is given by the angle of clockwise orientation, in degrees, followed optionally by letter codes to indicate mirroring. If the letters MX are included the orientation of the pad is mirrored in the X-axis, whilst if the letters MY are included the orientation of the pad is mirrored in the Y-axis. Both MX and MY may be present simultaneously and all mirroring shall be done about the geometric reference centre of the terminal shape. The mirroring operation (if any) shall be carried out first, then the terminal shall be rotated by the orientation angle.

IEC 62258



**AAD018-001**   **01**   **NR1..2**   **Q56**  
                   level nom   integer measure  
                                   1

**number of bond sites**   **bond sites**  
                                    $n_{\text{bond}}$

The number of separate sites on a pad to which bonds can and should be made.

IEC 62258

**AAD019-001**   **01**   **M..35**   **A91**  
                   simple   string

**signal name**   **signal name**

The name given to the signal appearing at the terminal of a device.

IEC 62258

**AAD020-001**   **01**   **M..8**   **A91**  
                   simple   non-quantitative code

**signal type**   **signal type**  
                   I/O type

The code of the type of signal associated with a terminal.

#### NOTE

The value shows whether the signal is analogue or digital, or whether connection to the terminal provides a supply or non-logic function, etc.

A   = analogue signal  
 B   = digital bidirectional  
 G   = ground  
 I   = digital input  
 N   = not connected  
 O   = digital output  
 T   = test point  
 U   = unknown connection  
 V   = supply voltage  
 X   = internally connected

IEC 62258

**AAD021-001**   **01**   **M..17**   **A91**  
                   simple   string

**electrical reference**   **elect ref**

A reference to a definition of a power supply or logic signal connection

#### NOTE

The value to be assigned must be a name which has been given to a signal definition in a power, digital or analogue connection table.

IEC 62258

**AAD022-001**   **01**   **A2**   **A56**  
                   simple   non-quantitative code

**signal direction**   **I/O direction**  
                   input/output direction

The code of the direction of signal flow at a terminal

BI   = bidirectional  
 IP   = input only  
 OP   = output only

IEC 62258

**AAD023-001**   **01**   **M..17**   **A56**  
                   simple   string

**swap codes**   **swap codes**

The codes which indicate connection interchangeability of a terminal with other terminals.

IEC 62258

**AAD024-001**   **02**   **A..4**   **A58**  
                   simple   non-quantitative code

**pad shape**   **pad shape**

The code of the shape of a bonding pad on a die.

CIRC = circular  
 ELL   = elliptical  
 POLY = polygonal  
 RECT = rectangular

IEC 62258

**AAD025-001**   **01**   **NR3..3.3ES2**   **T03**  
                   level nom   real measure  
                                   m

**pad length**   **b**  
                                   b

The length (in m) of a rectangular or elliptical pad measured in a direction parallel to the x-axis.

IEC 62258

DAE002-001 Die dimensions

**AAD026-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**pad width** **c**  
c

The width (in m) of a rectangular or elliptical pad measured in a direction parallel to the y-axis.

IEC 62258

DAE002-001 Die dimensions

**AAD027-001 01 NR1..2 Q56**  
level nom integer measure  
1

**number of polygon vertices** **n\_v**  
n<sub>v</sub>

The number of vertices of a polygonal pad.

IEC 62258

REMARKS:

A polygonal pad must have at least three vertices.

**AAD028-001 01 NR1..2 Q56**  
level nom integer measure  
1

**vertex number** **v\_p**  
v<sub>p</sub>

The vertex number of a polygonal pad.

IEC 62258

**AAD029-001 01 NR3 S..3.3ES2 T03**  
level nom real measure  
m

**vertex x-coordinate** **x\_v**  
x<sub>v</sub>

The value (in m) of the x-coordinate of a vertex of a polygonal pad relative to the centre of the pad.

IEC 62258

**AAD030-001 01 NR3 S..3.3ES2 T03**  
level nom real measure  
m

**vertex y-coordinate** **y\_v**  
y<sub>v</sub>

The value (in m) of the y-coordinate of a vertex of a polygonal pad relative to the centre of the pad.

IEC 62258

**AAD031-001 01 A3 A56**  
simple non-quantitative code

**supply variability** **variability**

The code indicating whether a power supply is fixed or variable.

FIX = fixed supply  
VAR = variable supply

IEC 62258

**AAD032-001 02 NR2 S..3.3 E06**  
level miNoMax real measure  
V

**supply voltage** **V\_sup**  
V<sub>sup</sub>

The value as specified by level (miNoMax) of a dc voltage (in V) connected to the supply terminal of an integrated circuit.

NOTE

For a fixed supply, the nominal value is given with the minimum and maximum giving the maximum permissible excursions from that value.

For a variable supply voltage, the minimum and maximum values are the permissible extremes of the range of supply voltages.

IEC 62258

**AAD033-001 01 NR3..3.3ES2 E01**  
level max real measure  
A

**pad supply current** **I\_pad**  
pad current I<sub>pad</sub>

The absolute maximum value of the current (in A) that should flow through a single bond site on a supply pad.

IEC 62258

**AAD049-001 01 M..17 A91**  
simple string

**supply name**

The name given to a terminal for the supply of power to a device.

IEC 62258

**REMARKS:**

Names commonly used include Vcc, Vss, Vdd, GND, V+ and V-.

**AAD054-001 01 NR3 S..3.3ES2 E01**  
level typMax real measure  
A

**supply current**

**I<sub>sup</sub>**  
I<sub>sup</sub>

The total value as specified by level (typMax) of the dc current (in A) passing through all terminals of an integrated circuit connected to the same supply voltage.

**NOTE**

The values are given for the maximum value of the corresponding supply voltage.

IEC 62258

**AAD055-001 01 M..8 A53**  
simple set of non-quantitative  
codes

**supply packing code packing code**

The mnemonic code for the form of packing used for the supply of a die or wafer.

BOX = supplied unsawn in wafer boxes  
FILM = supplied sawn on plastic film  
GELFRAME= supplied in GEL-PAK™ for sawn wafers  
GELPAK = supplied in GEL-PAK™  
SURFTAPE= supplied on SurfTape™  
TAPE = supplied on embossed tape  
WAFFLE = supplied in waffle pack or tray

IEC 62258

**AAD056-001 01 M..8 A55**  
simple non-quantitative code

**supply form code**

**supply code**

The mnemonic code for the form in which the die is supplied either in wafer form or as an individual dice

BARE = individual die without connection structures  
BUMP = individual bumped die  
MPD = individual die in minimally packaged form  
SAWN = sawn wafer  
WAFER = unsawn wafer

IEC 62258

**AAD060-001 01 M..2000 A11**  
simple string

**test procedure description**

**test procedure**

A description of the procedures used in the test and evaluation of a die.

IEC 62258

**AAD070-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**die step dimension x D**  
die length D

The nominal value (in m) of the step interval of die patterns on a wafer measured in the direction of the x axis of the coordinate system established for the wafer.

IEC 62258

**REMARKS:**

The length of the die will normally be closely related to the step interval but the precise value depends on width of saw cuts, tolerances, etc.

DAE002-001 Die dimensions

**AAD071-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**die step dimension y E**  
die width E

The nominal value (in m) of the step interval of die patterns on a wafer measured in the direction of the y-axis of the coordinate system established for the wafer.

IEC 62258

#### REMARKS:

The width of the die will normally be closely related to the step interval but the precise value depends on width of saw cuts, tolerances, etc.

DAE002-001 Die dimensions

**AAD072-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**die thickness A**  
wafer thickness A  
thickness

The perpendicular distance (in m) between the two plane faces of a die or wafer.

IEC 62258

DAE002-001 Die dimensions

**AAD078-001 01 M..35 A57**  
simple string

**passivation material passivation**

The material used to cover the surface of the die for passivation.

IEC 62258

**AAD081-001 01 A1 A58**  
simple non-quantitative code

**die surface die surface**

The code identifying the surface of a die on which a pad is situated when pads exist on both surfaces.

#### NOTE

The value may be blank when pads exist on only one surface of the die.

B = bottom surface  
U = upper surface

IEC 62258

**AAD082-001 01 M..35 A59**  
simple string

**test name test name**

A short title for the procedures used in the test and evaluation of a die.

#### NOTE

This is a short name for a procedure described more fully in AAD060-001.

IEC 62258

**AAD085-001 01 M..35 A52**  
simple string

**die type die type**

A short title for the physical form of a die or wafer.

#### NOTE

This is a short title for the form described more fully in AAD084-001. The value list consists of the value meanings from AAD004-001.

IEC 62258

**AAD086-001 01 M..175 A52**  
simple string

**die type description die desc**

The description of the physical form of a die or wafer.

IEC 62258

**AAD087-001 01 M..35 A55**  
simple string

**supply form supply form**

A short title for the form in which a die or wafer is supplied.

#### NOTE

This is a short title for the form described more fully in AAD086-001.

IEC 62258

**AAD088-001 01 M..175 A55**  
simple string

**supply form description supply form des**

The description of the form in which a die or wafer is supplied.

IEC 62258

**AAD089-001 01 M..35 A53**  
simple string

**supply packing packing**

A short title for the form of packing used for supply of a die or wafer.

**NOTE**

This is a short title for the form described more fully in AAD088-001.

IEC 62258

**AAD090-001 01 M..175 A53**  
simple string

**supply packing description packing desc**

The description of the form of packing used for the supply of a die or wafer.

IEC 62258

**AAD091-001 01 M..35 A56**  
simple string

**connection requirement conn req**

The requirement for electrical connection to the die substrate.

IEC 62258

**AAD093-001 01 M..175 A56**  
simple string

**substrate connection subst conn desc**

Description of the requirement, if any, of a connection to the substrate of a die.

IEC 62258

**AAD095-001 02 X1 A59**  
simple string

**die yield code yield code**

The single-character code giving the range of actual yield figures for a die.

**NOTE**

The code is a single hexadecimal digit in the range 0 to F.

IEC 62258

**AAD115-001 01 M..17 A58**  
simple non-quantitative code

**geometric units geometric units**

The code identifying the units in which die dimensions are given.

**NOTE**

To comply with IEC 61360, the units should be given in metres (m) and these will be the default units.

µm = micrometre (micron)  
m = metre  
mil = mil (1.0E-3 inch)  
mm = millimetre

IEC 62258

**AAD116-001 01 NR1..4 Q56**  
level nom integer measure  
1

**pad geometry count n\_g**  
n<sub>g</sub>

The number of different pad shapes on a die to which different pad geometry names have been allocated.

IEC 62258

**AAD117-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**size tolerance S\_tol**  
S<sub>tol</sub>

The tolerance (in m) on the length and width dimensions of a die.

IEC 62258

**AAD118-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**thickness tolerance T\_tol**  
T<sub>tol</sub>

The tolerance (in m) on the thickness of a die or wafer.

IEC 62258

|                                                                                                                 |                                         |            |                                                                                                                                                |                                        |            |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------|
| <b>AAD119-001 01</b><br>simple                                                                                  | <b>M..35</b><br>string                  | <b>A55</b> | <b>AAD123-001 01</b><br>level miNoMax<br>m                                                                                                     | <b>NR3..3.3ES2</b><br>real measure     | <b>T03</b> |
| <b>backside finish</b>                                                                                          | <b>backside finish</b>                  |            | <b>bumped height</b>                                                                                                                           | <b>A<sub>1</sub></b><br>A <sub>1</sub> |            |
| The finish applied to the surface of the substrate of a die opposite to that to which the connections are made. |                                         |            | The perpendicular distance (in m) as specified by level (miNoMax) between a plane on which the bumps rest and the top surface of a bumped die. |                                        |            |
| IEC 62258                                                                                                       |                                         |            | IEC 62258                                                                                                                                      |                                        |            |
| <b>AAD120-001 01</b><br>simple                                                                                  | <b>M..70</b><br>string                  | <b>A57</b> | REMARKS:<br>The mounted height of a bumped die will normally be less than A <sub>1</sub> .                                                     |                                        |            |
| <b>pad metallisation</b>                                                                                        | <b>metallisation</b>                    |            | DAE003-001 Bumped die dimensions                                                                                                               |                                        |            |
| The material used to form the pads on a die to which connection is made.                                        |                                         |            |                                                                                                                                                |                                        |            |
| NOTE<br>The information given should include the materials used and the thickness of all layers.                |                                         |            | <b>AAD124-001 01</b><br>simple                                                                                                                 | <b>M..35</b><br>string                 | <b>A57</b> |
| IEC 62258                                                                                                       |                                         |            | <b>bump material</b>                                                                                                                           | <b>bump material</b>                   |            |
|                                                                                                                 |                                         |            | The material used to form the bumps on a bumped die.                                                                                           |                                        |            |
| <b>AAD121-001 01</b><br>level nom                                                                               | <b>NR3..3.3ES2</b><br>real measure<br>m | <b>T03</b> | IEC 62258                                                                                                                                      |                                        |            |
| <b>pad diameter</b>                                                                                             | <b>\$fb</b><br>Øb                       |            | <b>AAD125-001 01</b><br>simple                                                                                                                 | <b>M..35</b><br>string                 | <b>A57</b> |
| The nominal diameter (in m) of a circular pad.                                                                  |                                         |            | <b>lead-frame material</b>                                                                                                                     | <b>lead material</b>                   |            |
| IEC 62258                                                                                                       |                                         |            | The material used to form the leads on a die with attached lead frame.                                                                         |                                        |            |
| <b>AAD122-001 01</b><br>simple                                                                                  | <b>M..70</b><br>string                  | <b>A58</b> | IEC 62258                                                                                                                                      |                                        |            |
| <b>bump size</b>                                                                                                | <b>bump size</b>                        |            | <b>AAD126-001 01</b><br>simple                                                                                                                 | <b>M..70</b><br>string                 | <b>A55</b> |
| Description of the size, shape and height of the bumps on a bumped die.                                         |                                         |            | <b>underfill</b>                                                                                                                               | <b>underfill</b>                       |            |
| IEC 62258                                                                                                       |                                         |            | Details of any requirements or recommendations for underfill between a bumped die or a minimally-packaged device and its mounting surface.     |                                        |            |
|                                                                                                                 |                                         |            | IEC 62258                                                                                                                                      |                                        |            |



**AAD127-001 01** **M..35** **A58**  
simple string

**die picture**

Reference to a file or document containing a picture of the die which shows the positions of all pads.

IEC 62258

**AAD129-001 01** **NR3 S..3.3ES2** **T03**  
level nom real measure  
m

**die centre x-position** **X\_0**  
X<sub>0</sub>

The nominal distance (in m) measured in the x-direction of the geometric centre on the surface of a die from the geometric origin.

IEC 62258

DAE002-001 Die dimensions

**AAD130-001 01** **NR3 S..3.3ES2** **T03**  
level nom real measure  
m

**die centre y-position** **Y\_0**  
Y<sub>0</sub>

The nominal distance (in m) measured in the y-direction of the geometric centre on the surface of a die from the geometric origin.

IEC 62258

DAE002-001 Die dimensions

**AAD131-001 01** **NR2..2.2** **Q59**  
level typMax real measure  
ppm

**defect rate** **DPM**  
DPM

The average fraction of die (in parts per million) which which may be expected to be defective on delivery to a customer.

**NOTE**

For low defect rates, DPM and yield (in %) are related by the formula  $DPM = 1.0E4 \cdot (100 - \text{yield})$

IEC 62258

**REMARKS:**

Where a maximum figure is quoted, this will normally be a guarantee of delivered quality. Where a typical figure is given this is to be interpreted as an average for the processes employed.

**AAD132-001 01** **X1** **A59**  
simple non-quantitative code

**test flow**

**test flow**

The code for the basic test procedures applied to a die or wafer.

A = ac and dc tests  
D = dc tests only  
K = ac and dc tests with full function  
N = not tested  
S = ac and dc tests at full speed  
X = no data available

IEC 62258

**AAD133-001 01** **X1** **A59**  
simple non-quantitative code

**temperature specification** **test temp**  
test temperatures

The code for the basic temperature specification for tests applied to a die or wafer.

A = ambient only  
C = cold, hot and ambient (three tests)  
H = hot and ambient (two tests)  
K = full range to specification  
S = coverage to special requirements  
X = no data available

IEC 62258

**AAD134-001 01** **X1** **A59**  
simple non-quantitative code

**process options** **options**  
test options

The code for the basic options of test, inspection and burn-in applied to a die or wafer.

B = burn-in (100%)  
K = special KGD test, wafer level  
L = lot-acceptance testing  
M = scanning electron microscope  
R = radiation  
S = special stress tests at wafer probe  
V = visual inspection  
X = no data available

IEC 62258

**AAD137-001 01** **X1** **A52**  
simple non-quantitative code

**conformity level** **conformity**

The code to indicate the level of conformity with a relevant part of ES 59008 as defined in ES 59008-1

- 1 = conformity level 1  
2 = conformity level 2  
3 = conformity level 3

IEC 62258

**AAD140-001 01** **M..35** **A21**  
simple string

**die manufacturer** **manufacturer**

The original manufacturer of the die device

IEC 62258

**AAD141-001 01** **M..35** **A21**  
simple string

**die supplier** **supplier**

The organisation that supplied the die device, where different from the original manufacturer

IEC 62258

**AAD142-001 01** **M..35** **A21**  
simple string

**die data source** **data source**

The organisation that supplied the data on the die device, where different from the original manufacturer

IEC 62258

**AAD143-001 01** **M..35** **A51**  
simple string

**packaged part name** **packaged part**

The manufacturer's type number or part name for an packaged part equivalent to the die device

IEC 62258

**AAD144-001 01** **M..8** **A58**  
simple non-quantitative code

**geometric view** **geometric view**

The code that specifies the geometric view that shall apply to all geometric shapes used in drawings of a die device

- BOTTOM = viewed from the bottom  
(non-active side)  
TOP = viewed from the top (active side)

IEC 62258

**AAD145-001 01** **NR1..4** **Q56**  
simple integer measure

**terminal count** **n\_2**  
n<sub>2</sub>

The total number of terminals on a die device

IEC 62258

**AAD146-001 01** **NR3..3.3ES2** **T03**  
level nom real measure

**bump height** **h\_b**  
h<sub>b</sub>

The nominal height (in m) of the bumps on a bumped die measured as the perpendicular distance between the die surface and the plane surface on which the die is mounted

IEC 62258

DAE003-001 Bumped die dimensions

**AAD147-001 01** **NR3 S..3.3ES2** **T03**  
level minMax real measure

**bump height tolerance** **h\_b\_tol**  
h<sub>b</sub>tol

The tolerance (in m) on the height of the bumps over the surface of a bumped die

IEC 62258

|                      |              |            |                      |                       |            |
|----------------------|--------------|------------|----------------------|-----------------------|------------|
| <b>AAD148-001 01</b> | <b>M..17</b> | <b>A57</b> | <b>AAD153-001 01</b> | <b>X1</b>             | <b>A59</b> |
| simple               | string       |            | simple               | non-quantitative code |            |

**bulk material**

**bulk material**

The constitution of the bulk material which forms the base of the die process technology where this is different from the substrate material on which the active die is formed

IEC 62258

**test reliability code**

**reliability**

The code to indicate the availability of reliability information for a die device

K = data based on semiconductor die  
P = data based on packaged counterparts  
X = no data available  
Y = data available on receipt of NDA

|                      |                     |            |
|----------------------|---------------------|------------|
| <b>AAD149-001 01</b> | <b>NR2 S..3.3</b>   | <b>H02</b> |
| level max            | real measure<br>Cel |            |

|                                     |                   |
|-------------------------------------|-------------------|
| <b>maximum assembly temperature</b> | <b>T_assy</b>     |
|                                     | T <sub>assy</sub> |

The maximum temperature (in Cel) to which the backside surface of a die device may be raised during assembly

IEC 62258

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAD154-001 01</b> | <b>X1</b>             | <b>A59</b> |
| simple               | non-quantitative code |            |

**test maturity code**

**maturity**

The code to indicate the maturity of the production process for a die device

D = semiconductor die under development  
N = not recommended for new designs  
O = die will soon be made obsolete  
P = pilot production started  
S = die available in sample quantities  
U = die is no longer available  
V = volume manufacture : parameters, yields are stable  
X = no data available  
Y = data available on receipt of NDA

IEC 62258

|                      |              |            |
|----------------------|--------------|------------|
| <b>AAD150-001 01</b> | <b>M..70</b> | <b>A57</b> |
| simple               | string       |            |

**encapsulation material encapsulation**

The material used to form an external case or coating on an electric component to protect it from the environment

IEC 62258

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAD151-001 01</b> | <b>NR3..3.3ES2</b> | <b>E35</b> |
| level max            | real measure<br>W  |            |

**power limit**

**P\_lim**  
P<sub>lim</sub>

The maximum power (in W) dissipated by a semiconductor device under typical worst-case conditions

IEC 62258

|                      |              |            |
|----------------------|--------------|------------|
| <b>AAD155-001 01</b> | <b>M..35</b> | <b>A55</b> |
| simple               | string       |            |

**MPD delivery form**

**MPD delivery**

The form in which a minimally-packaged device is delivered to the user

IEC 62258

|                      |              |            |
|----------------------|--------------|------------|
| <b>AAD156-001 01</b> | <b>M..17</b> | <b>A91</b> |
| simple               | string       |            |

**fiducial name**

**fiducial name**

The name given to identify a particular fiducial

IEC 62258

**REMARKS:**

The name used is arbitrary and is only used as a link between a fiducial geometry definition and a fiducial instance. The name must be unique within the list of names for any particular die device.

**AAD157-001**    **01**    **M..35**    **A62**  
                          simple    string

**fiducial file name**            **fiducial file**

The name of a file containing an image of the fiducial on the die device.

IEC 62258

**AAD158-001**    **01**            **NR3..3.3ES2**            **T03**  
                          level nom    real measure  
                                             m

**fiducial width**                    **x<sub>f</sub>**  
                                             x<sub>f</sub>

The nominal length (in m) of a fiducial measured in a direction parallel to the x-axis.

IEC 62258

**AAD159-001**    **01**            **NR3..3.3ES2**            **T03**  
                          level nom    real measure  
                                             m

**fiducial height**                    **y<sub>f</sub>**  
                                             y<sub>f</sub>

The nominal width (in m) of a fiducial measured in a direction parallel to the y-axis.

IEC 62258

**AAD160-001**    **01**            **NR3 S..3.3ES2**            **T03**  
                          level nom    real measure  
                                             m

**fiducial x position**            **fid<sub>x</sub>**  
                                             fid<sub>x</sub>

The nominal value (in m) of the x-coordinate of the geometric centre of a fiducial referred to the geometric origin of the die as origin.

IEC 62258

**AAD161-001**    **01**            **NR3 S..3.3ES2**            **T03**  
                          level nom    real measure  
                                             m

**fiducial y position**            **fid<sub>y</sub>**  
                                             fid<sub>y</sub>

The nominal value (in m) of the y-coordinate of the geometric centre of a fiducial referred to the geometric origin of the die as origin.

IEC 62258

**AAD162-001**    **02**            **M..7**                    **A58**  
                          simple    string

**fiducial orientation**            **fid orient**

The orientation code for a pad related to reference axes.

NOTE

The fiducial orientation is given by the angle of clockwise orientation, in degrees, followed optionally by letter codes to indicate mirroring. If the letters MX are included, the orientation of the fiducial is mirrored in the X-axis, whilst if the letters MY are included the orientation of the fiducial is mirrored in the Y-axis. Both MX and MY may be present simultaneously and all mirroring shall be done about the geometric reference centre of the fiducial shape. The mirroring operation (if any) shall be carried out first, then the fiducial shall be rotated by the orientation angle.

IEC 62258

**AAE000-001**    **01**            **X..8**                    **A52**  
                          simple    non-quantitative code

**IEC reference class**            **IEC class**

Code of the main class in the IEC reference collection to which an item belongs.

CO = component  
 FEA = features  
 GEO = geometry  
 MA = material

**AAE001-005**    **01**            **X..3**                    **A52**  
                          simple    non-quantitative code

**main class of component**            **main class**

Code of the main functional class to which a component belongs.

EE = electric/electronic component  
 EM = electromechanical component  
 ME = mechanical component  
 MP = magnetic part

**AAE002-006 01 X..8 A52**  
simple non-quantitative code

**category EE component category EE**

Code of the category to which an electric-electronic component belongs.

AMP = amplifier  
ANT = antenna  
BAT = battery  
CAP = capacitor  
CND = conductor  
DEL = delay line  
DID = diode device  
FIBOPTIC = fibre optics  
FIL = filter  
IC = integrated circuit  
IND = inductor  
LAM = lamp  
LCD = liquid crystal display  
MIC = microwave components  
OPT = optoelectronic device  
OSC = oscillator  
PE = piezoelectric device  
PWC = printed wiring components  
RES = resistor  
RESON = resonators  
SEN = sensor  
SPARK = spark gaps  
TFM = transformer  
TRA = transistor  
TRG = trigger device  
TUB = tube  
TUN = tuner

**AAE003-006 01 X..3 A56**  
simple non-quantitative code

**adjustability type adjustability**

Code of the type of mechanical adjustability of a capacitor, resistor, inductor or transformer.

FIX = fixed  
VAR = variable

**AAE004-007 01 X..8 A57**  
simple non-quantitative code

**dielectric material type dielectric type**  
(capacitor) dielectric

Code of the type of dielectric material of a fixed capacitor.

AIR = fixed air capacitor  
CER = fixed ceramic capacitor  
ELC = fixed electrolytic capacitor  
FLM = fixed film capacitor  
GLS = fixed glass capacitor  
MICA = fixed mica capacitor  
MIX = fixed mixed-dielectric capacitor  
PAP = fixed paper capacitor

**AAE005-006 01 X..3 A51**  
simple non-quantitative code

**transducer principle trans principle**  
drive unit type

Code of the transducer principle of a loudspeaker.

ELM = electromagnetic loudspeaker  
ELS = electrostatic loudspeaker  
ION = ionic loudspeaker  
MGD = magnetodynamic loudspeaker  
MGS = magnetostriction loudspeaker  
MVC = moving conductor loudspeaker  
PNM = pneumatic loudspeaker  
PXE = piezoelectric loudspeaker

**AAE006-006 01 M..8 A55**  
simple non-quantitative code

**mounting features mtg feature**

Code of the mounting features which are designed to fasten a component to its counterpart.

35x15 = width is 35 mm, height is 15mm  
35x7.5 = width is 35 mm, height is 7.5 mm  
75x25 = width is 75 mm, height is 25 mm  
BRC = with bracket  
C20 = width 20 mm  
C30 = width is 30 mm  
C40 = width is 40 mm  
C50 = width is 50 mm  
HOL = through hole  
INS = inserted  
SMD = surface mounted  
STD = stud  
TAP = tapped hole

**AAE007-005 01 M..3 A58**  
simple non-quantitative code

**terminal shape terminal shape**

Code of the shape of the terminals of an electric, electronic or electromechanical component.

BUS = bus  
CAP = end cap  
FLT = flat  
PIN = printed wiring pin  
SCR = screw  
SOL = solid-lead  
STD = stud  
STL = stranded-lead  
TAG = solder tag

**AAE008-005**   **01**   **M..8**   **A58**  
                     simple           non-quantitative code

**terminal placement           terminal place**

Code indicating the placement of the terminals of an electric-electronic or electromechanical component.

AXIAL = axial  
 CIRC = on circle  
 DIL = dual in line  
 GA = grid array  
 QIL = quadruple in line  
 RAD = radial  
 SEND = single ended  
 SIL = single in line

**AAE009-005**   **01**   **M..3**   **A59**  
                     simple           non-quantitative code

**performance grade           performance grd**

IEC standard code identifying the performance grade of a fixed capacitor.

1 = long-life  
 2 = general purpose

IEC 60384-2 (1982)

**REMARKS:**

See IEC 60384-2 (1982) and IEC 60384-4 (1998) for requirements per test.

**AAE010-005**   **02**   **M..17**   **A59**  
                     simple           string

**climatic category           climatic cat**

IEC standard code indicating the climatic category to which a resistor or capacitor belongs.

IEC 60068-1 (8) (1988)

**REMARKS:**

The category is indicated by a series of three sets of digits separated by oblique strokes corresponding respectively to the temperatures, both cold and hot, and to the number of days of exposure to damp heat (steady state) they will withstand.  
 (In the first set the digits denote the temperature below zero in Cel, unless otherwise indicated.)

-First set: Two digits denoting the minimum ambient temperature of operation (cold test).

-Second set: Three digits denoting the maximum temperature of operation (dry heat test). Where the temperature requires the use of only two digits, they shall be prefixed by the figure '0' to make up the three digit group.

-Third set: Two digits denoting number of days of the damp heat steady state) test (Ca). Where the duration requires the use of only one digit, it shall be prefixed by the figure '0' to make up the two digit group.

**AAE012-005**   **02**   **M..35**   **A61**  
                     simple           string

**international standard   internat std**

Reference to an international standard describing a component.

**REMARKS:**

Examples of formats for reference to IEC publications:

- IEC 60147-1D (VI.1.5.1) (1978)  
                                           = IEC publication
- IEC/TC47(CO)797(5.1) (1981)  
                                           = Publ. of Central office
- IEC/TC47(Sec)797(5.1) (1981)  
                                           = Publ of Secretariat

Examples of formats for reference to ISO publications:

- ISO9999 (1985)               = ISO publication
- ISO/DP999 (1985)       = Draft proposal
- ISO/DIS9999 (1985)   = Draft Intern. standard



|                   |           |                      |            |                   |               |                    |            |
|-------------------|-----------|----------------------|------------|-------------------|---------------|--------------------|------------|
| <b>AAE013-005</b> | <b>01</b> | <b>NR3 S..3.3ES2</b> | <b>E06</b> | <b>AAE019-005</b> | <b>01</b>     | <b>NR3..3.3ES2</b> | <b>T03</b> |
|                   | simple    | real measure         |            |                   | level miNoMax | real measure       |            |
|                   |           | V                    |            |                   | m             |                    |            |

**voltage (dc)**                      **@U<sub>dc</sub>**  
                                               @U<sub>dc</sub>

The direct voltage (in V) applied to an electric, electronic or electromechanical component, as a variable.

**body length**                      **l<sub>body</sub>**  
                                               l<sub>body</sub>

The value as specified by level (miNoMax) of the length (in m) of the body of a component in the x-direction.

|                   |           |                 |            |
|-------------------|-----------|-----------------|------------|
| <b>AAE014-005</b> | <b>02</b> | <b>NR1 S..4</b> | <b>H02</b> |
|                   | simple    | integer measure |            |
|                   |           | Cel             |            |

**ambient temperature**            **@T<sub>amb</sub>**  
 ambient free air temperature    @T<sub>amb</sub>  
                                               @T<sub>a</sub>

The ambient free air temperature (in Cel) of a component, as a variable.

IEC 60068-1 (1988)

REMARKS:

IEC 60068-1 (1988)

For a heat-dissipating specimen in free air conditions, the ambient temperature is the temperature of the air at such distance from the specimen that the effect of the dissipation is negligible.

|                   |               |                    |            |
|-------------------|---------------|--------------------|------------|
| <b>AAE020-005</b> | <b>01</b>     | <b>NR3..3.3ES2</b> | <b>T03</b> |
|                   | level miNoMax | real measure       |            |
|                   | m             |                    |            |

**body height**                      **h<sub>body</sub>**  
                                               h<sub>body</sub>

The value as specified by level (miNoMax) of the height (in m) of the body of a component in the z-direction.

|                   |               |                    |            |
|-------------------|---------------|--------------------|------------|
| <b>AAE021-005</b> | <b>01</b>     | <b>NR3..3.3ES2</b> | <b>T03</b> |
|                   | level miNoMax | real measure       |            |
|                   | m             |                    |            |

**body breadth**                      **b<sub>body</sub>**  
                                               b<sub>body</sub>

The value as specified by level (miNoMax) of the breadth (in m) of the body of a component in the y-direction.

|                   |           |                 |            |
|-------------------|-----------|-----------------|------------|
| <b>AAE017-005</b> | <b>01</b> | <b>NR1 S..4</b> | <b>H02</b> |
|                   | level nom | integer measure |            |
|                   |           | Cel             |            |

**reference temperature**            **T<sub>ref</sub>**  
                                               T<sub>ref</sub>

The reference ambient temperature (in Cel) applied to a component.

NOTE

T<sub>ref</sub> may be used when a number of characteristics are specified at a common ambient temperature.

|                   |               |                    |            |
|-------------------|---------------|--------------------|------------|
| <b>AAE022-005</b> | <b>01</b>     | <b>NR3..3.3ES2</b> | <b>T03</b> |
|                   | level miNoMax | real measure       |            |
|                   | m             |                    |            |

**outside diameter**                      **d<sub>out</sub>**  
                                               d<sub>out</sub>

The value as specified by level (miNoMax) of the outside diameter (in m) of a component with a body of circular cross-section.

|                   |           |                   |            |
|-------------------|-----------|-------------------|------------|
| <b>AAE018-001</b> | <b>02</b> | <b>NR2 S..3.3</b> | <b>E09</b> |
|                   | level nom | real measure      |            |
|                   |           | %                 |            |

**capacitance lower tolerance (%)**            **C<sub>lt</sub>(%)**  
                                                                   C<sub>lt</sub>(%)

The lower tolerance percentage (in %) of the rated capacitance of a fixed capacitor.

|                   |               |                    |            |
|-------------------|---------------|--------------------|------------|
| <b>AAE023-005</b> | <b>01</b>     | <b>NR3..3.3ES2</b> | <b>T03</b> |
|                   | level miNoMax | real measure       |            |
|                   | m             |                    |            |

**terminal diameter**                      **d<sub>term</sub>**  
                                               d<sub>term</sub>

The value as specified by level (miNoMax) of the diameter (in m) of the terminals of an electric-electronic or electromechanical component.

**AAE024-005 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**terminal pitch** **p\_term**  
p<sub>term</sub>

The nominal pitch (in m) of the terminals of an electric, electronic or electromechanical component.

IEC 60050 (411) (1973)

**AAE027-005 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**mounted height** **h\_mnt**  
mounting height  
seated height h<sub>mnt</sub>

The value as specified by level (miNoMax) of the mounted height of a component (in m), referred to as the seating plane.

**REMARKS:**

BSI: mounted height (seated height):

The distance of the furthest part of the component above the reference plane measured in a direction perpendicular to that plane.

BSI: seating plane (reference plane):

The surface plane of the circuit on which the component is mounted.

**AAE028-005 02 NR3..3.3ES2 T07**  
simple real measure  
s

**duration** **@dt**  
time interval @dt

The time (in s) during which an input quantity (current, voltage, etc.) is applied to a component, as a variable.

**AAE029-005 01 NR3..3.3ES2 F03**  
simple real measure  
Hz

**frequency** **@f**  
@f

The frequency (in Hz) of a sinusoidal input quantity (current, power, voltage, etc.) applied to an electric, electronic or electromechanical component, as a variable.

**AAE030-005 02 M..8 A52**  
simple non-quantitative code

**E series**

**E series**

IEC code which identifies the preferred value series to which the resistance of a resistor or the capacitance of a capacitor belongs.

E12 = E12  
E192 = E192  
E24 = E24  
E3 = E3  
E48 = E48  
E6 = E6  
E96 = E96

IEC 60063 (Amd2) (1963)

**REMARKS:**

The E192 series is composed of rounded values of the theoretical numbers  $10^n/192$  in which the exponent n is a whole positive or negative number. The E96 series is derived from the E192 series by omitting alternate terms.

The E48 series is derived from the E96 series by omitting alternate terms.

The E24 series is composed of rounded values of the theoretical numbers  $10^n/24$  in which the exponent n is a whole positive or negative number.

**AAE031-005 02 M..3 A55**  
simple non-quantitative code

**electrode technology** **electrode techn**

Code identifying the technology by which the electrodes of a fixed film capacitor are made.

MFL = metal foil  
MLZ = metallized

**AAE033-005 02 M..3 A56**  
simple non-quantitative code

**voltage application** **voltage appl**

Code of the voltage application(s) for which a fixed film capacitor is designed.

AC = ac, designed essentially for alternating voltages  
DC = dc, designed essentially for direct voltages  
PL = pulse, for use with current or voltage pulses

**AAE034-005 02 M..3 A56**  
simple non-quantitative code

**circuit application (capacitor) circuit appl**

Code of the circuit application(s) for which a fixed capacitor is designed.

CPL = coupling  
DCL = decoupling  
DEL = delay  
DFL = deflection  
FLT = filtering  
RIS = radio-interference-suppression  
SMT = smoothing  
TC = temperature-compensating  
TIM = timing  
TUN = tuning

**AAE035-005 01 M..8 A56**  
simple non-quantitative code

**temperature coefficient code \$a**

IEC standard code of the temperature coefficient of the capacitance of a fixed class1 ceramic capacitor.

N1000 = -1000 \*10<sup>-6</sup>/K  
N150 = -150 \*10<sup>-6</sup>/K  
N1500 = -1500 \*10<sup>-6</sup>/K  
N220 = -220 \*10<sup>-6</sup>/K  
N2200 = -2200 \*10<sup>-6</sup>/K  
N33 = -33 \*10<sup>-6</sup>/K  
N330 = -330 \*10<sup>-6</sup>/K  
N3300 = -3300 \*10<sup>-6</sup>/K  
N470 = -470 \*10<sup>-6</sup>/K  
N4700 = -4700 \*10<sup>-6</sup>/K  
N5600 = -5600 \*10<sup>-6</sup>/K  
N75 = -75 \*10<sup>-6</sup>/K  
N750 = -750 \*10<sup>-6</sup>/K  
NP0 = 0  
P100 = +100 \*10<sup>-6</sup>/K

IEC 60384-8 (1988)

**AAE036-005 01 M..3 A56**  
simple non-quantitative code

**safety class safety class**

IEC standard code of the safety/voltage class of a fixed capacitor for radio interference suppression.

U = shock danger on failure;  
≤125 V mains voltage  
X1 = no shock danger on failure;  
>1,2 kV pulse  
X2 = no shock danger on failure;  
≤1,2 kV pulse  
Y = shock danger on failure;  
125-250 V mains voltage

**AAE037-005 02 M..3 A56**  
simple string

**EIA temperature characteristic code EIA TCh**

EIA code of the temperature characteristic of a fixed class2 ceramic capacitor.

EIA RS-198-B (1991)

**REMARKS:**

First (alphabetic) character indicates T<sub>amb-min</sub>:

X = - 55 degree C

Y = - 30 degree C

Z = + 10 degree C

Second (numeric) character indicates T<sub>amb-max</sub>:

2 = + 45 degree C

4 = + 65 degree C

5 = + 85 degree C

6 = +105 degree C

7 = +125 degree C

Third (alphabetic) character indicates cap. change:

A = +/- 1 %

B = +/- 1.5%

C = +/- 2.2%

D = +/- 3.3%

E = +/- 4.7%

F = +/- 7.5%

P = +/- 10 %

R = +/- 15 %

S = +/- 22 %

T = +22/-33%

U = +22/-56%

V = +22/-82%

X7R corresponds to IEC subclass 2B4

Y5V corresponds to IEC subclass 2F4

**AAE038-005 02 X..3 A57**  
simple non-quantitative code

**dielectric class (ceramic cap) ceram diel cls**

IEC standard code of the dielectric material class of a fixed ceramic capacitor (with regard to permittivity, losses and temperature stability).

CL1 = class1 ceramic capacitor

CL2 = class2 ceramic capacitor

**AAE039-005 03 M..8 A57**  
simple non-quantitative code

**film dielectric material film diel mat**

ISO standard code of plastics, used to identify the dielectric material of a fixed film capacitor.

PC = polycarbonate

PETP = polyethylene-terephthalate

PP = polypropylene

PS = polystyrene

|                   |           |                       |            |
|-------------------|-----------|-----------------------|------------|
| <b>AAE040-005</b> | <b>02</b> | <b>M..8</b>           | <b>A57</b> |
|                   | simple    | non-quantitative code |            |

electrode material type electrode mat

Code of the type of electrode material of an electrolytic capacitor.

Al = aluminium  
NSAI = \*non-solid aluminium  
SAI = \*solid aluminium  
Ta = tantalum

|                   |           |                 |            |
|-------------------|-----------|-----------------|------------|
| <b>AAE041-005</b> | <b>02</b> | <b>NR1..4</b>   | <b>T07</b> |
|                   | level nom | integer measure |            |
|                   |           | h               |            |

shelf life                      shelf life  
shelf life

Duration of storage test (in h) at specified ambient temperature of a fixed electrolytic capacitor. After test and reconditioning the capacitor shall meet stated requirements for change in capacitance, loss angle, dc leakage current, and impedance.

AAE014-005 = ambient temperature

IEC 60384-1 (1999)

REMARKS:

This is a modification of the IEC Dry heat test, with extended duration.

AAE042-005 03 NR3..3.3ES2 E01  
level max real measure

leakage current short-term  $I_{\text{leak}}(st)$

The maximum leakage current (in A) of a fixed electrolytic capacitor, after the rated voltage has been applied for a specified duration at specified ambient temperature, determined according to IEC 60384-1 (1999).

AAE014-005 = ambient temperature

AAE028-005 = duration

REMARKS:

For leakage current during continuous operation, see  
AAE043-005.

|            |           |              |     |
|------------|-----------|--------------|-----|
| AAE043-005 | 02        | NR3..3.3ES2  | E01 |
|            | level max | real measure |     |
|            |           | A            |     |

leakage current continuous  $I_{\text{leak(cont)}}$

The maximum leakage current (in A) of a fixed electrolytic capacitor during continuous operation at the rated voltage at specified ambient temperature, determined according to IEC 60384-1(4.9) (1984).

AAE014-005 = ambient temperature

REMARKS:

For leakage current after a given duration: see  
AAE042-005.

AAE044-005 01 NR3-3.3ES2 E06  
level max real measure  
V

|                    |           |
|--------------------|-----------|
| rated voltage (dc) | $U_{Rdc}$ |
|                    | $U_{Rdc}$ |

The maximum direct voltage (in V) which may be applied continuously to a capacitor at any operating ambient temperature below the rated temperature.

|                   |           |                   |            |
|-------------------|-----------|-------------------|------------|
| <b>AAE045-005</b> | <b>01</b> | <b>NR3..3.ES2</b> | <b>E06</b> |
|                   | level max | real measure      |            |
|                   |           | V                 |            |

|                    |           |
|--------------------|-----------|
| rated voltage (ac) | $U_{Rac}$ |
| ac voltage         | $U_{Rac}$ |

The maximum rms alternating voltage (in V), of mains frequency (50-60 Hz), which may be applied continuously to a film capacitor at any operating ambient temperature below the rated temperature.

NOTE

NOTE  
IEC has changed its definition from rms into peak  
value.

REMARKS:

For ac capacitors: rated voltage (ac).

For dc capacitors: max. ac voltage.

**AAE046-005 01 NR3..3.3ES2 E09**  
level miNoMax real measure  
F

**capacitance C**  
C

The value as specified by level (miNoMax) of the capacitance (in F) of a fixed capacitor at specified frequency and at reference conditions.

AAE029-005 = frequency  
AAE995-005 = reference conditions

**AAE047-001 02 NR2 S..3.3 E09**  
level nom real measure  
%

**capacitance upper tolerance (%) C\_ut(%)**  
C<sub>ut</sub>(%)

The upper tolerance percentage (in %) of the rated capacitance of a fixed capacitor.

**AAE048-005 03 NR2..3.3 E49**  
level max real measure  
W

**maximum noise power P<sub>n</sub>**  
power handling capacity  
rated power

The maximum noise power (in W) of a moving conductor loudspeaker calculated from the formula: maximum noise voltage squared over the rated impedance.

**AAE049-005 02 NR1..4 E33**  
level nom integer measure  
Ω

**rated impedance R**  
R

The nominal substituted dc resistance (in ohms) of a moving conductor loudspeaker.

NOTE  
Used when defining the available electric power of the source.

**AAE050-005 02 NR3..3.3ES2 F03**  
level max real measure  
Hz

**resonance frequency f<sub>rsn</sub>**  
lowest resonance frequency f<sub>rsn</sub>  
fundamental resonance frequency

The maximum value of the lowest resonance frequency of a moving conductor loudspeaker (in Hz), at specified mounting of loudspeaker.

AAE342-005 = mounting of loudspeaker

**AAE051-005 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**centre pole diameter d<sub>pole</sub>**  
core diameter

The rounded nominal diameter (in m) of the centre pole of a moving conductor loudspeaker.

**AAE053-005 01 M..8 A57**  
simple non-quantitative code

**magnet material magnet material**  
magnet

Code of the material type of the magnet of a moving conductor loudspeaker.

CER = ceramic  
RES = rare earth  
STA = steel alloy

**AAE054-005 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**baffle hole length l<sub>bfl</sub>**  
l<sub>bfl</sub>

Recommended nominal length (in m) of the baffle hole of a moving conductor loudspeaker.

IEC 60268-14 (1980)

**AAE055-005 01** **M..8** **A56**  
simple non-quantitative code

### frequency application frequency appl

Code indicating the application frequency range recommended for a moving conductor loudspeaker.

FULLR = full range  
SQUAW = squawker (medium range)  
TWEET = tweeter (high range)  
WOOF = woofer (low range)

**AAE056-005 01** **NR3..3.3ES2** **T03**  
level nom real measure m

**baffle hole breadth** **b\_bfl**  
b<sub>bfl</sub>

Recommended nominal breadth (in m) of the baffle hole of a moving conductor loudspeaker.

IEC 60268-14 (1980)

**AAE060-006 01** **X..3** **A52**  
simple non-quantitative code

### category EM componentcategory EM

Code of the category to which an electromechanical component belongs.

CON = connector  
CONPART = connector part  
FUS = fuse  
LSP = loudspeaker  
MIC = microphone  
MOT = motor  
REL = relay  
SWI = switch

**AAE061-005 01** **M..3** **A58**  
simple non-quantitative code

### shape of flange flange shape

Code of the outer shape of the flange of a moving conductor loudspeaker.

CRC = circular  
CRE = circular with ears  
ELE = elliptical with ears  
ELT = elliptical  
OCT = octagonal  
RCT = rectangular  
SQR = square

IEC 60268-14 (1980)

**AAE063-005 04** **NR3..3.3ES2** **E33**  
level min real measure  $\Omega$

**insulation resistance** **R<sub>ins</sub>**  
R<sub>ins</sub>

The minimum insulation resistance (in ohms) between terminals of a fixed capacitor, determined according to IEC 60384-1(4.5) (1999) at reference conditions.

AAE995-005 = reference conditions

### REMARKS:

1 The insulation resistance is measured after a voltage has been applied for 1 min  $\pm$  5 s. The relationship between this voltage and the rated voltage (dc) is prescribed in IEC 60384-1 (1999).

Voltage rating of capacitor Measuring voltage

|                                     |                         |
|-------------------------------------|-------------------------|
| $U_R$ or $U_C < 10$ V               | $U_R$ or $U_C \pm 10\%$ |
| $10$ V $\leq U_R$ or $U_C < 100$ V  | $10 \pm 1$ V            |
| $100$ V $\leq U_R$ or $U_C < 500$ V | $100 \pm 15$ V          |
| $500$ V $\leq U_R$ or $U_C$         | $500 \pm 50$ V          |

2 AAE063-005 is prescribed by IEC for specific capacitor types. See also AAE069-005

**AAE064-005 02** **NR3..3.3ES2** **E44**  
level max real measure  $\Omega$

**equivalent series resistance** **ESR**  
ESR

The maximum equivalent series resistance (in ohms) of an electrolytic capacitor at specified frequency and at the reference conditions.

### NOTE

The ESR corresponds to the real part of the impedance.

AAE029-005 = frequency

AAE995-005 = reference conditions



**AAE065-005 03 NR3..3.3ES2 E44**  
level nom real measure  
1

**tangent of loss angle** **tanδ**  
dissipation factor  $\tan \delta$

The tangent of the loss angle of a capacitor at specified frequency and at reference conditions.

**NOTE**

The tangent of the loss angle is equal to the equivalent series resistance divided by the capacitive reactance.

AAE029-005 = frequency

AAE995-005 = reference conditions

**REMARKS:**

(IEC 60418-3 (1976)): The rotor should be set at minimum and maximum positions for the tan delta test on variable capacitors.

IEC requires the voltage to be specified.

N.B. Reciprocal of tan delta is quality factor Q.

**AAE066-005 01 NR3..3.3ES2 F02**  
level min real measure  
s

**time constant (of capacitor) RC**  
RC product RC

The minimum product (in s) of the insulation resistance between terminals and the nominal capacitance of a fixed capacitor.

**REMARKS:**

According to IEC, this DE-type is used for the following groups of capacitors:

|                                |                |
|--------------------------------|----------------|
| polycarbonate film             | > 0.33 $\mu$ F |
| polyethylene-terephthalate     | > 0.33 $\mu$ F |
| polypropylene film             | > 0.33 $\mu$ F |
| polypropylene film/foil        | > 0.1 $\mu$ F  |
| polystyrene                    | > 0.1 $\mu$ F  |
| mica                           | > 0.01 $\mu$ F |
| ceramic class 1                | > 10 nF        |
| ceramic class 2                | > 25 nF        |
| radio interference suppressors | > 0.33 $\mu$ F |

For lower values use  $R_{ins}$  (AAE063-005)

**AAE067-005 01 NR3 S..3.3ES2 H03**  
level miNoMax real measure  
 $K^{-1}$

**temperature coefficient (cap) TC**  
TC

The value as specified by level (miNoMax) of the temperature coefficient (in  $K^{-1}$ ), relative to the nominal capacitance, of a fixed capacitor.

IEC 60384-1 (1999)

**REMARKS:**

The temperature coefficient of variable capacitors is measured at rotor settings and temperatures as given in IEC 60418-1 (1974).

**AAE068-005 01 NR3..3.3ES2 E09**  
level miNoMax real measure  
F

**maximum capacitance C\_max**  
 $C_{max}$

The value as specified by level (miNoMax) of the maximum capacitance (in F) obtainable by moving the actuating device of a variable capacitor.

**AAE069-005 01 NR3..3.3ES2 E09**  
level miNoMax real measure  
F

**minimum capacitance C\_min**  
 $C_{min}$

The value as specified by level (miNoMax) of the minimum capacitance (in F) obtainable by moving the actuating device of a variable capacitor.

**AAE070-005 01 M..3 A56**  
simple non-quantitative code

**adjustability class adjustabl class**

Code of the adjustability class of a variable capacitor or potentiometer.

CTL = control (potentiometer)

PRE = preset

TRM = trimmer

TUN = tuning (capacitor)

**AAE071-005**      **02**      **NR2 S..3.3**      **E09**  
                          level nom      real measure  
                          %

**capacitance tolerance**      **C\_tol**  
                          C<sub>tol</sub>

The nominal tolerance on capacitance (in %) identifying a capacitor.

**REMARKS:**

Used only in cases of equal positive and negative tolerance values.

**AAE072-005**      **01**      **NR3..3.3ES2**      **T03**  
                          level miNoMax      real measure  
                          m

**terminal length**      **l\_term**  
                          l<sub>term</sub>

The value as specified by level (miNoMax) of the length (in m) of the terminals of an electric-electronic or electromechanical component extending below the seating plane.

**AAE073-005**      **02**      **NR1..4**      **T07**  
                          level nom      integer measure  
                          h

**endurance**      **endurance**  
                          endurance

The nominal duration of the endurance test (in h) according to IEC 60384-4 (1998) at the rated voltage (dc) and at specified ambient temperature, which a fixed electrolytic capacitor shall withstand.

AAE014-005 = ambient temperature

**AAE074-005**      **03**      **M..8**      **A56**  
                          simple      non-quantitative code

**IC application field**      **IC appl field**

Code identifying the equipment in which an application oriented IC is used.

AO      = application field  
 ARI      = \*\*traffic warning system  
 AUD      = \*audio  
 AUT      = \*automotive  
 CAM      = \*\*camera  
 CAR      = \*\*car radio  
 CD      = \*\*compact disc  
 CLWTCH      = \*clocks and watches  
 CREC      = \*\*camera recorder  
 DCOM      = \*\*data communications  
 DIAL      = \*\*dialler  
 DIS      = \*\*display  
 E/W      = \*\*east/west correction  
 GAM      = \*\*games  
 GP      = general purpose  
 HAID      = \*\*hearing aid  
 HOR      = \*\*\*horizontal  
 MOB      = \*\*\*mobile telephony  
 MTR      = \*\*\*multi-tone ringer  
 PASY      = \*\*paging system  
 RC      = \*\*radio recorder  
 REC      = \*\*recorder  
 REM      = \*\*remote control  
 RR      = \*\*radio receiver  
 SPS      = \*\*\*speech synthesizer  
 SYNC      = \*\*\*synchronization  
 TCOM      = \*telecommunications  
 TEL      = \*\*telephony  
 TV      = \*\*television receiver  
 TXT      = \*\*\*teletext  
 VCR      = \*\*recorder  
 V-DEFL      = \*\*\*vertical deflection  
 VERT      = \*\*\*vertical  
 VID      = \*video

|                      |             |            |                      |                       |            |
|----------------------|-------------|------------|----------------------|-----------------------|------------|
| <b>AAE076-005 02</b> | <b>M..3</b> | <b>A57</b> | <b>AAE084-005 03</b> | <b>M..8</b>           | <b>A56</b> |
| simple               | string      |            | simple               | non-quantitative code |            |

# **dielectric subclass 2      diel subclass2**

IEC standard code of the subclass of a fixed class2 ceramic capacitor, as determined by the temperature characteristic of capacitance.

IEC 60384-9 (1988)

## REMARKS:

First (numeric) character is always 2 (see AAE038-005)

Second (alphabetic) character indicates maximum capacitance change in per cent with respect to  $C_R$  at 20 deg C:

|              |              |                      |
|--------------|--------------|----------------------|
| <div> </div> | $U_{dc} = 0$ | $U_{dc} = U_{R(dc)}$ |
| B            | +/-10        | +10/-15              |
| C            | +/-20        | +20/-30              |
| D            | +20/-30      | +20/-40              |
| E            | +20/-56      | +20/-70              |
| F            | +30/-80      | +30/-90              |
| R            | +/-15        | +15/-40              |
| X            | +/-15        | +15/-25              |

Third (numeric) character indicates temperature range:

|   |                |
|---|----------------|
| 1 | -55/+125 deg C |
| 2 | -55/+ 85 deg C |
| 3 | -40/+ 85 deg C |
| 4 | -25/+ 85 deg C |
| 6 | +10/+ 85 deg C |

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAE077-005 01</b> | <b>X..3</b>           | <b>A56</b> |
| simple               | non-quantitative code |            |

# **signal type      signal type**

Code identifying a function on an IC according to the type of signal being treated.

|     |                         |
|-----|-------------------------|
| AD  | = AD (analogue/digital) |
| ANA | = analogue              |
| DIG | = digital               |
| PER | = periodic/dc           |

# **analogue function      analog function**

Code identifying an analogue signal function of an IC.

|        |                             |
|--------|-----------------------------|
| AMP    | = amplifier                 |
| BDP    | = *band pass                |
| COMP   | = comparator                |
| DCC    | = *dc controlled            |
| DEC    | = decoder                   |
| DEM    | = demodulator               |
| DOLBY  | = **Dolby                   |
| ENC    | = encoder                   |
| FIL    | = filter                    |
| FS     | = *frequency synthesizer    |
| MIX    | = *mixer                    |
| MOD    | = modulator                 |
| OPAMP  | = *operational              |
| PREAMP | = *preamplifier             |
| PRESC  | = *prescaler                |
| RED    | = *noise reduction          |
| SUP    | = *interference suppression |
| TUN    | = tuner                     |

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAE085-005 01</b> | <b>X..3</b>           | <b>A56</b> |
| simple               | non-quantitative code |            |

# **digital function      dig function**

Code identifying a digital function of an IC.

|     |                                            |
|-----|--------------------------------------------|
| CSI | = CSI (combinatorial sequential interface) |
| MUC | = microcontroller                          |
| MUP | = microprocessor                           |
| PLD | = PLD (programmable logic device)          |
| STO | = storage                                  |

|                      |                   |            |
|----------------------|-------------------|------------|
| <b>AAE086-005 02</b> | <b>NR2 S..3.3</b> | <b>E06</b> |
| level minMax         | real measure      |            |
|                      | V                 |            |

|                             |                        |
|-----------------------------|------------------------|
| <b>supply voltage limit</b> | <b>V<sub>sup</sub></b> |
| dc supply voltage           | V <sub>sup</sub>       |

The value as specified by level (minMax) of the limiting direct supply voltage (in V) applied to an IC.

## REMARKS:

Commonly known supply voltage symbols:

|                 |                                  |
|-----------------|----------------------------------|
| V <sub>CC</sub> | for TTL, NMOS and HCMOS circuits |
| V <sub>DD</sub> | for CMOS circuits                |
| V <sub>P</sub>  | for analogue circuits            |
| V <sub>EE</sub> | for ECL circuits                 |

**AAE092-005 01 NR2 S..3.3 E06**  
level minTypMax V real measure

### HIGH-state output voltage $V_{OH}$

HIGH-level output voltage  $V_{OH}$   
output voltage HIGH

The value as specified by level (minTypMax) of the HIGH-state dc output voltage (in V) of a digital function of an IC, at specified supply voltage, output current, logic input voltages and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE226-005 = output current  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

#### REMARKS:

It is required that the value of the logic input voltages falls within either the  $V_{IH}$  or the  $V_{IL}$  range.

**AAE093-005 01 NR2 S..3.3 E06**  
level minTypMax V real measure

### HIGH-state output voltage ref $V_{OHref}$

HIGH-level output voltage  $V_{OHref}$   
output voltage HIGH

The value as specified by level (minTypMax) of the guaranteed HIGH-state dc output voltage (in V) of a digital function of an IC, at reference input voltages, specified supply voltage and output current, and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE226-005 = output current  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

#### REMARKS:

It is required that the value of the reference input voltages is either zero (GND/ $V_{SS}$ ), or equal to the supply voltage ( $V_{CC}/V_{DD}$ ).

**AAE094-005 01 NR2 S..3.3 E06**  
level minTypMax V real measure

### LOW-state output voltage ref $V_{OLref}$

LOW-level output voltage  $V_{OLref}$   
output voltage LOW

The value as specified by level (minTypMax) of the guaranteed LOW-state dc output voltage (in V) of a digital function of an IC, at reference input voltages, specified supply voltage and output current, and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE226-005 = output current  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

#### REMARKS:

It is required that the value of the reference input voltages is either zero (GND/ $V_{SS}$ ), or equal to the supply voltage ( $V_{CC}/V_{DD}$ ).

**AAE097-005 01 NR2 S..3.3 E06**  
level minTypMax V real measure

### LOW-state output voltage $V_{OL}$

LOW-level output voltage  $V_{OL}$

The value as specified by level (minTypMax) of the LOW-state dc output voltage (in V) of a digital function of an IC, at specified supply voltage, output current, logic input voltages and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE226-005 = output current  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

#### REMARKS:

It is required that the value of the logic input voltages falls within either the  $V_{IH}$  or the  $V_{IL}$  range.

**AAE102-005 01** **NR2 S..3.3** **E06**  
simple real measure  
V

**supply voltage** **@V<sub>sup</sub>**  
dc supply voltage @V<sub>sup</sub>

The direct supply voltage (in V) applied to an IC, as a variable.

**REMARKS:**

Commonly known supply voltage symbols: V<sub>CC</sub> for TTL, NMOS and HCMOS circuits V<sub>DD</sub> for CMOS circuits V<sub>P</sub> for analogue circuits V<sub>EE</sub> for ECL circuits

**AAE106-005 03** **NR1..4** **Q56**  
level nom integer measure  
1

**number of functions** **N<sub>func</sub>**  
N<sub>func</sub>

Number of identical functions of a multiple function component.

**REMARKS:**

Such as identical functions on one IC.

**AAE111-005 01** **M..3** **A53**  
simple non-quantitative code

**packing type** **packing type**

Code of the packing type at specified packing level for products.

AMM = ammopack  
BAG = bag  
BLI = blister  
BOX = box  
CAS = cassette  
CON = container  
PAL = pallet  
RAL = rail  
RL = reel  
TRA = tray

**REMARKS:**

This data element must be used in combination with AAF270-005 (packing level).

**AAE112-005 02** **M..3** **A53**  
simple non-quantitative code

**taping** **taping**

Code of taping for automatic handling of products.

AX = axial (tape for axial leads)  
BL = blister (tape for SMD)  
CB = cardboard (tape for SMD)  
RD = unidirectional (tape for radial leads)

**AAE113-005** **01** **NR1..4 H03**  
level max integer measure  
K<sup>-1</sup>

**temperature coefficient** **\$a**  
α

The maximum reversible variation of the resistance (in K<sup>-1</sup>) of a fixed linear resistor or a potentiometer.

IEC 60115-1 (1999)

**AAE114-007 01** **X..8** **A57**  
simple non-quantitative code

**linearity of a fixed resistor** **linearity**

Code of linearity class to which a fixed resistor belongs.

LIN = linear  
NLN = non-linear

**AAE115-005 01** **NR1..4** **H02**  
level max integer measure  
Cel

**maximum surface temperature** **T<sub>surf</sub>**  
maximum body temperature T<sub>surf</sub>  
hot spot temperature

The maximum surface temperature (in Cel) of a fixed resistor.

IEC 60115-1 (1999)

**AAE116-005 02** **M..8** **A57**  
simple non-quantitative code

**resistive material** **resistive mat**  
resistance element material

Code of the resistive material of a fixed linear or a variable resistor.

C = carbon  
CEM = \*cemented  
CER = \*ceramic (rectangular)  
CERMET = ceramic/metal  
EN = \*enamelled  
MGL = metal glaze  
MTL = metal  
WW = wirewound

**REMARKS:**

For potentiometers, the term cermet is used instead of metal glaze.

Cermet is an acronym for ceramic and metal. With this type, the resistive element is a metal glaze compound deposited on a ceramic substrate.

**AAE118-005 01 NR1..4 E06**  
level max integer measure  
V

**limiting element voltage (dc) U\_max(dc)**  
limiting voltage (dc)  $U_{max(dc)}$

The maximum limiting dc voltage (in V) that may be applied to a resistor.

**AAE119-005 01 NR3..3.3ES2 E33**  
level miNoMax real measure  
 $\Omega$

**resistance** **R**  
R  
 $R_{ac}$

The value as specified by level (miNoMax) of the resistance (in ohms) of a fixed linear resistor or variable resistor.

IEC 60115-1 (1999)

#### REMARKS:

The symbol  $R_{ac}$  is used for potentiometers. The value of  $R_{ac}$  is measured between the end terminals of potentiometers and between the end positions of two-terminal resistors.

**AAE122-005 01 X..3 A56**  
simple non-quantitative code

**resistance dependency res dependency**

Code of the physical dependency to which a non-linear fixed resistor belongs.

LDR = light dependent resistor

TDR = thermistor (temperature)

VDR = varistor (voltage)

**AAE123-005 01 NR3..3.3ES2 E33**  
level min real measure  
 $\Omega$

**dark resistance** **R\_D**  
 $R_D$

The minimum value of the dark resistance (in ohms) of a light dependent resistor.

**AAE124-005 01 NR3..3.3ES2 E33**  
level minMax real measure  
 $\Omega$

**light resistance** **R\_L**  
 $R_L$

The value as specified by level (minMax) of the light resistance (in ohms) of a light dependent resistor.

**AAE125-005 01 NR2..3.3 E01**  
simple real measure  
A

**current (pulse) @I\_pul**  
 $@I_{pul}$

The peak value of a pulse current (in A) passed through an electric, electronic or electromechanical component, as a variable.

**AAE126-005 02 X..3 A56**  
simple non-quantitative code

**thermistor type TDR type**

Code of the sign of the temperature coefficient belonging to a thermistor.

NTC = negative temperature coefficient

PTC = positive temperature coefficient

**AAE127-005 01 NR3..3.3ES2 E33**  
level miNoMax real measure  
 $\Omega$

**resistance at 25 Cel** **R\_25**  
 $R_{25}$

The value as specified by level (miNoMax) of the resistance of a thermistor at an ambient temperature of 25 Cel.

**AAE130-005 01 NR2..3.3 H07**  
level nom real measure  
W/K

**dissipation factor \$D**  
 $\Delta$

The ratio of the power dissipation change to the resultant body temperature change (in W/K) of a thermistor at a specified ambient temperature.

AAE014-005 = ambient temperature

IEC 60539-1 (2002)



|                      |                   |            |                      |                    |            |
|----------------------|-------------------|------------|----------------------|--------------------|------------|
| <b>AAE131-005 01</b> | <b>NR2..3.3</b>   | <b>F02</b> | <b>AAE137-005 01</b> | <b>NR3..3.3ES2</b> | <b>E01</b> |
| level nom            | real measure<br>s |            | level max            | real measure<br>A  |            |

**thermal time constant**  $\$t_T$   
 $T_{th}$

The nominal thermal time constant (in s) of a thermistor.

REMARKS:

IEC 60539-1 (2002)

The time required for the temperature of a thermistor to change by 63,2 % of the difference between its initial and final temperatures when subjected to a step function change in temperature under zero-power conditions.

|                      |                      |            |
|----------------------|----------------------|------------|
| <b>AAE132-005 02</b> | <b>NR1..4</b>        | <b>H01</b> |
| level miNoMax        | integer measure<br>K |            |

**thermal sensitivity index B25/85**  $B_{25/85}$   
B\_25/85 value  $B_{25/85}$

The value as specified by level (miNoMax) of the mean temperature sensitivity index (in K) of an NTC thermistor between 25 and 85 Cel.

IEC 60539-1

|                      |                     |            |
|----------------------|---------------------|------------|
| <b>AAE135-005 02</b> | <b>NR3..3.3ES2</b>  | <b>H15</b> |
| level nom            | real measure<br>J/K |            |

**heat capacity**  $C_C$   
 $C_H$

The nominal heat capacity (in J/K) of a PTC resistor or piezoelectric device.

ISO 31-4 (1992)

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAE136-005 01</b> | <b>NR3..3.3ES2</b> | <b>E01</b> |
| level min            | real measure<br>A  |            |

**trip current**  $I_t$   
 $I_t$

The minimum rms ac current (in A) that will trip a PTC thermistor from the low resistance region to the high resistance region, at specified ambient temperature.

AAE014-005 = ambient temperature

**non-trip current**  $I_{nt}$   
 $I_{nt}$

The maximum rms ac current (in A) at which a PTC thermistor will stay in the low resistance region, at specified ambient temperature.

AAE014-005 = ambient temperature

|                      |                        |            |
|----------------------|------------------------|------------|
| <b>AAE138-005 01</b> | <b>NR1..4</b>          | <b>H02</b> |
| level nom            | integer measure<br>Cel |            |

**switching temperature**  $T_{sw}$   
switch temperature  $T_{sw}$

The nominal temperature (in Cel), under zero power conditions, at which the resistance value of a PTC thermistor is twice the  $R_{min}$  value.

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAE139-005 01</b> | <b>X..3</b>           | <b>A52</b> |
| simple               | non-quantitative code |            |

**number of terminals** **number of term**

Code of the number of terminals identifying a variable resistor.

POT = potentiometer (3 or more terminals)  
TT = two-terminal variable resistor

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAE141-005 01</b> | <b>M..8</b>           | <b>A52</b> |
| simple               | non-quantitative code |            |

**resistance law (IEC)** **resistance law**

IEC code of the resistance law of a potentiometer.

law-A = linear law  
law-B = logarithmic law  
law-C = inverse logarithmic law

REMARKS:

The relationship of the measured resistance value between terminations a and b or of the output ratio  $U_{ab}/U_{ac}$  to the mechanical position of the moving contact.

**AAE142-005 01** **M..3** **A52**  
simple non-quantitative code

**actuator type** **actuator type**  
moving contact actuator type

Code of the moving contact actuator type of a potentiometer.

ROT = rotary  
SLD = slide

**AAE144-005 01** **M..3** **A58**  
simple non-quantitative code

**mounting position** **mtg position**

Code of the (intended) mounting position of a potentiometer with printed wiring pins.

HOR = horizontal version  
VER = vertical version

**AAE145-005 02** **M..3** **A57**  
simple non-quantitative code

**spindle material of potentiometer** **spindle mat**  
spindle material

Code of the spindle material of a rotary potentiometer.

MTL = metal  
PLA = plastic

**AAE146-005 01** **NR1..4** **E06**  
level max integer measure  
dB

**ganging tolerance** **ganging tol**  
ganging tol

The maximum ganging tolerance (in dB) of a tandem potentiometer.

**AAE147-005 01** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**spindle length** **l\_spin**  
l<sub>spin</sub>

The nominal length (in m) of the spindle of a rotary potentiometer.

#### REMARKS:

The spindle length is measured with reference to the mounting surface of the potentiometer.

**AAE148-005 01** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**spindle diameter** **d\_spin**  
d<sub>spin</sub>

The nominal diameter (in m) of the spindle of a rotary potentiometer.

**AAE149-005 02** **M..17** **A59**  
simple non-quantitative code

**safety approval** **safety approval**

The abbreviated name of the office which has approved the safety of an electric, electronic or electromechanical component.

BEAB(BSI) = British Electrical Approvals Board  
CEBEC = Comité Electrotechnique Belge  
(Belgium)

CSA = Canadian Standards Association  
DEMKO = Danmarks Elektriske

Materiellkontrol

EI = Elektriska Inspektoratet (Finland)

HHS = Health and human services (USA)

JIS = Japanese Industrial Standards  
(Committee)

KEMA = Keuring van Elektrotechnische  
Materialen

LCIE = Laboratoire Central Industries  
Electrique

MED = Medizin Geräte Verordnung  
(West Germany)

NEMKO = Norges Elektriske Materiellkontrol  
(Norway)

OEVE = Oesterreichischer  
Elektrotechnischer Verein  
ROV = Röntgen Verordnung (West  
Germany)

SEMKO = Svenska Elektriska  
Materielkontrollanstalten

SEV = Schweizerischer  
Elektrotechnischer Verein

UL = Underwriters' Laboratories Inc.  
(USA)

VDE = Verband Deutscher  
Elektrotechnischer Verein

**AAE150-005 01** **NR3..3.3ES2** **E06**  
simple real measure  
V

**voltage (ac)** **@U\_ac**  
@U<sub>ac</sub>

The rms sinusoidal voltage (in V) applied to an electric, electronic or electromechanical component, as a variable.

|                                                                                                                                                                                          |                                                |            |                                                                                                              |                                              |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------|
| <b>AAE151-005 01</b><br>simple                                                                                                                                                           | <b>M..8</b><br>non-quantitative code           | <b>A52</b> | <b>AAE158-005 01</b><br>level min                                                                            | <b>NR3..3.3ES2</b><br>real measure<br>m      | <b>T03</b> |
| <b>winding configuration</b><br>separation                                                                                                                                               | <b>winding config</b>                          |            | <b>clearance to earth</b><br>spark gap<br>spark distance                                                     | <b>clearance</b><br>clearance                |            |
| Code of the winding configuration of a transformer or inductive antenna.                                                                                                                 |                                                |            | The minimum clearance to earth (in m) of a power transformer.                                                |                                              |            |
| AUTO = auto<br>SEPRT = separate                                                                                                                                                          |                                                |            | IEC 60050 (441) (1984)                                                                                       |                                              |            |
| <b>AAE152-005 01</b><br>simple                                                                                                                                                           | <b>X..3</b><br>non-quantitative code           | <b>A56</b> | <b>AAE159-005 01</b><br>level min                                                                            | <b>NR3..3.3ES2</b><br>real measure<br>m      | <b>T03</b> |
| <b>power/signal</b>                                                                                                                                                                      | <b>power/signal</b>                            |            | <b>creepage distance</b><br>leakage path                                                                     | <b>d<sub>crpg</sub></b><br>d <sub>crpg</sub> |            |
| Code of the application of a transformer or cable.                                                                                                                                       |                                                |            | The minimum creepage distance (in m) between live and non-live parts of a power transformer or connector.    |                                              |            |
| POW = power<br>SIG = signal                                                                                                                                                              |                                                |            | IEC 60742 (1983)                                                                                             |                                              |            |
| <b>AAE155-005 01</b><br>level min                                                                                                                                                        | <b>NR3..3.3ES2</b><br>real measure<br>$\Omega$ | <b>E33</b> | <b>AAE160-005 01</b><br>level nom                                                                            | <b>NR1 S..4</b><br>integer measure<br>A      | <b>E01</b> |
| <b>insulation resistance</b>                                                                                                                                                             | <b>R<sub>ins</sub></b><br>R <sub>ins</sub>     |            | <b>nominal output current</b><br>I <sub>out</sub>                                                            |                                              |            |
| The minimum insulation resistance (in ohms) between the live and non-live parts of a switch, relay, transformer or connector.                                                            |                                                |            | The nominal output current (in A) of a power transformer, at nominal input voltage and nominal frequency.    |                                              |            |
| IEC 60068 (1969)                                                                                                                                                                         |                                                |            | IEC 60742 (1983)                                                                                             |                                              |            |
| REMARKS:<br>IEC 60742 (1983)<br>The insulation resistance is measured with dc voltage of approximately 500 V applied, the measurement being made 1 min after application of the voltage. |                                                |            | REMARKS:<br>For variable power transformers, the nominal output current is valid over the whole range.       |                                              |            |
| <b>AAE156-005 01</b><br>level nom                                                                                                                                                        | <b>NR3..3.3ES2</b><br>real measure<br>Hz       | <b>F03</b> | <b>AAE163-005 01</b><br>level miNoMax<br>V                                                                   | <b>NR1..4</b><br>integer measure             | <b>E06</b> |
| <b>upper frequency</b><br>f <sub>upr</sub>                                                                                                                                               | <b>f<sub>upr</sub></b><br>f <sub>upr</sub>     |            | <b>input voltage</b><br>supply voltage                                                                       | <b>U<sub>in</sub></b><br>U <sub>in</sub>     |            |
| The nominal upper frequency (in Hz) of a signal transformer.                                                                                                                             |                                                |            | The value as specified by level (miNoMax) of the rms sinusoidal input voltage (in V) of a power transformer. |                                              |            |
| <b>AAE157-005 01</b><br>level nom                                                                                                                                                        | <b>NR1..4</b><br>integer measure<br>Hz         | <b>F03</b> | REMARKS:<br>IEC 60742 (1983):<br>For polyphase supply, the line voltage is intended.                         |                                              |            |
| <b>lower frequency</b><br>f <sub>low</sub>                                                                                                                                               | <b>f<sub>low</sub></b><br>f <sub>low</sub>     |            |                                                                                                              |                                              |            |
| The nominal lower frequency (in Hz) of a signal transformer.                                                                                                                             |                                                |            |                                                                                                              |                                              |            |

**AAE164-005 01 NR1..4 E06**  
level max integer measure  
V

**no-load output voltage** **U<sub>out</sub>(open)**  
U<sub>out</sub>(open)

The maximum rms no-load output voltage (in V) at nominal input voltage and at nominal frequency.

IEC 60742 (1983)

**AAE169-005 02 NR1..4 E06**  
level nom integer measure  
V

**output voltage** **U<sub>out</sub>**  
U<sub>out</sub>

The nominal rms sinusoidal output voltage (in V) at total rotation angle of a variable power transformer.

IEC 60186 (1987)

**AAE165-005 02 NR3..3.3ES2 E49**  
level nom real measure  
VA

**output power** **P<sub>out</sub>**  
P<sub>out</sub>

The nominal rms power (in VA) of a power transformer.

IEC 60076-1 (1976)

**AAE170-005 02 NR3..3.3ES2 Q59**  
level min real measure

**brush life** **N<sub>turn</sub>**  
N<sub>turn</sub>

The minimum guaranteed number of two-way turns of the brush of a variable power transformer.

NOTE

After the test the contact resistance shall be within its tolerance.

**AAE166-005 01 NR3..3.3ES2 F03**  
level miNoMax real measure  
Hz

**operating frequency** **f<sub>oper</sub>**  
f<sub>oper</sub>

The value as specified by level (miNoMax) of the frequency (in Hz) of a power transformer.

IEC 60076-1 (1976)

**AAE171-005 02 NR3..3.3ES2 Q59**  
level min real measure  
1

**brush life expectation** **N<sub>turn</sub>(exp)**  
N<sub>turn</sub>(exp)

The minimum expectation of the number of two-way turns of the brush of a variable power transformer.

**AAE167-005 02 M..3 A56**  
simple non-quantitative code

**transformer model** **tfm model**

Code of the model of a variable power transformer.

BNC = bench (protective housing)

LBR = \*laboratory (bench model with handle, cable, fuse)

PNL = panel (not protected live parts)

**AAE172-005 02 NR1..4 Q56**  
level nom integer measure  
1

**ganging number** **N<sub>gang</sub>**  
number of variable elements N<sub>gang</sub>

The number of variable elements (capacitors, resistors, power transformers) with a common actuating device.

**AAE168-005 01 NR1..4 E01**  
level max integer measure  
A

**maximum output current** **I<sub>out</sub>**  
continuous overload I<sub>out</sub>

The maximum continuous sinusoidal rms output current (in A) in the most favourable brush position of a variable power transformer at nominal input voltage and nominal frequency.

**AAE173-005 01 NR1..4 T01**  
level nom integer measure  
deg

**total mechanical rotation** **\$a\_rot**  
angle of mechanical rotation  $\alpha_{rot}$

The nominal angle of the total rotation (in deg) of the moving contact actuator of a rotary potentiometer or a variable power transformer.

**AAE174-005 01 M..3 A51**  
simple non-quantitative code

**magnet type** **magnet type**  
magnetisation system  
magnet material

Code of the magnet type of the iron armature of a motor.

ELM = electromagnet  
HBD = hybrid  
NOM = no magnet  
PMM = permanent magnet

**AAE175-005 01 M..3 A51**  
simple non-quantitative code

**coil connection** **coil connection**

Code of the coil connection of a motor.

CMP = compound  
SHP = shunt (parallel)  
SRS = series

**AAE176-005 01 M..3 A51**  
simple non-quantitative code

**armature material** **armature mat**

Code of the type of material of the armature of a motor.

IRL = iron-less  
IRN = iron

**AAE177-005 03 M..8 A51**  
simple non-quantitative code

**integrated component** **integr comp**

Code indicating a component integrated with a motor or relay.

BRAKE = brake  
EBRAKE = \*brake electromagnetic  
ENCOD = encoder  
GEAR = gearbox  
LGEAR = \*gearbox linear  
MBRAKE = \*brake mechanical  
PBRAKE = \*brake permanent magnetic  
PINION = pinion  
RGEAR = \*gearbox rotational  
SPARKS = spark suppressor  
TACHO = tachogenerator

**AAE178-005 01 X..3 A52**  
simple non-quantitative code

**supply current type** **I\_sup type**

Code of the supply current type for which a motor has been designed.

AC = ac  
DC = dc  
STR = stepping motor (pulse)  
UNI = universal motor (ac or dc)

**AAE179-005 01 X..3 A52**  
simple non-quantitative code

**trajectory of motion** **trajectory**

Code of the trajectory of motion of the armature of a motor.

LIN = linear  
ROT = rotational

**AAE180-005 01 NR3..3.3ES2 E06**  
level nom real measure  
V/(r/min)

**electromotive force** **E**  
E

The nominal rated induced voltage in V/(r/min) in the winding of a motor as a result of the magnetic field and the motion.

IEC 60050 (131) (2002)

**AAE182-005 02 NR3..3.3ES2 E49**  
level nom real measure  
W

**input power** **P<sub>in</sub>**  
P<sub>in</sub>

The nominal electric power (in W) supplied to a motor.

IEC 60050 (151) (2001)

**AAE183-005 02 M..8 A52**  
simple non-quantitative code

**ac motor synchronism motor syn**

Code indicating the synchronism of an ac motor.

ASYN = asynchronous  
SREL = \*reluctance  
SYN = synchronous

**AAE184-005 01 NR3..3.3ES2 E06**  
level nom real measure  
V

**rated input voltage (ac) U<sub>ac</sub>**  
driving voltage U<sub>ac</sub>

The nominal rms alternating voltage (in V) at the terminals of an ac motor.

NOTE  
For polyphase supply, the line voltage is intended.

IEC 60034-1 (2004)

**AAE186-005 01 NR3..3.3ES2 E06**  
level nom real measure  
V

**rated input voltage (dc) U<sub>dc</sub>**  
U<sub>dc</sub>

The nominal direct voltage (in V) at the terminals of a dc motor.

IEC 60034 (1983)

**AAE187-005 01 NR3..3.3ES2 F02**  
level min real measure  
s

**mechanical time constant \$t**  
T

The minimum value of the time (in s) an unloaded dc motor needs, starting from rest, to reach 63 % of the unloaded speed at the rated input voltage.

**AAE188-005 02 M..3 A56**  
simple non-quantitative code

**direction of rotation dir rot**

Code of the direction of rotation as seen from the spindle of a rotational motor.

CCW = anti-clockwise (counter-clockwise)  
CW = clockwise  
REV = reversible

REMARKS:

The sense of rotation when looking along the shaft from the drive end of the motor towards the non-drive end.

**AAE189-005 03 NR3..3.3ES2 K07**  
level nom real measure  
kg.m<sup>2</sup>

**rotor inertia I**  
I  
J

The nominal rotor moment of inertia (in kg.m<sup>2</sup>) of a rotational motor.

**AAE190-005 02 NR2..3.3 K09**  
level max real measure  
N

**maximum radial force F<sub>rad</sub>**  
F<sub>rad</sub>

The maximum radial force (in N) on the spindle of a motor.

**AAE191-005 02 NR3..3.3ES2 K12**  
level nom real measure  
N.m

**rated torque T<sub>rat</sub>**  
max working torque  
max load torque T<sub>rat</sub>

The nominal torque (in N.m) of a rotational motor.

IEC 60050 (411) (1996)

**AAE192-005 02 NR3..3.3ES2 K12**  
simple real measure  
N.m

**torque @T**  
@T

Torque (in N.m) of a rotational motor, as a variable.



|                                                                                                                                                                                    |                        |                                             |            |                                                                                                                                       |                        |                                           |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------|------------|
| <b>AAE193-005</b>                                                                                                                                                                  | <b>01</b><br>simple    | <b>NR3..3.3ES2</b><br>real measure<br>r/min | <b>F03</b> | <b>AAE197-005</b>                                                                                                                     | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>A   | <b>E01</b> |
| <b>speed</b>                                                                                                                                                                       |                        | <b>@v</b><br><b>@v</b>                      |            | <b>rated input current</b>                                                                                                            |                        | <b>I</b><br><b>I</b>                      |            |
| Speed (in r/min) of a rotational motor, as a variable.                                                                                                                             |                        |                                             |            | The nominal direct input current (in A) of a rotational dc motor at rated input voltage and at rated working torque.                  |                        |                                           |            |
| <b>AAE194-005</b>                                                                                                                                                                  | <b>01</b><br>level nom | <b>NR1..4</b><br>integer measure<br>r/min   | <b>F03</b> | <b>AAE199-005</b>                                                                                                                     | <b>02</b><br>level min | <b>NR3..3.3ES2</b><br>real measure<br>N.m | <b>K12</b> |
| <b>synchronous speed</b>                                                                                                                                                           |                        | <b>v_syn</b><br>$V_{syn}$                   |            | <b>starting torque</b>                                                                                                                |                        | <b>T_strt</b><br>$T_{strt}$               |            |
| The nominal speed of rotation (in r/min) of a synchronous rotational ac motor.                                                                                                     |                        |                                             |            | The minimum starting torque (in N.m) which a rotational dc motor develops with the rated input voltage (dc) applied.                  |                        |                                           |            |
| NOTE<br>This is a result of the system to which the machine is connected and either the number of poles or the number of projections in the machine, at a given (fixed) frequency. |                        |                                             |            | IEC 60050 (411) (1996)                                                                                                                |                        |                                           |            |
| IEC 60050 (411)(1996)                                                                                                                                                              |                        |                                             |            | <b>AAE200-005</b>                                                                                                                     | <b>02</b><br>level max | <b>NR2..3.3</b><br>real measure<br>N      | <b>K09</b> |
| <b>AAE195-005</b>                                                                                                                                                                  | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>r/min | <b>F03</b> | <b>maximum axial force</b>                                                                                                            |                        | <b>F_ax</b><br>$F_{ax}$                   |            |
| <b>rated speed</b>                                                                                                                                                                 |                        | <b>v_rat</b><br>$V_{rat}$                   |            | The maximum axial force (in N) on the spindle of a rotational motor.                                                                  |                        |                                           |            |
| The nominal speed (in r/min) of a rotational ac asynchronous or dc motor at the rated input voltage and rated torque.                                                              |                        |                                             |            | NOTE<br>Axial means in line with the shaft (pull or push).                                                                            |                        |                                           |            |
| <b>AAE196-005</b>                                                                                                                                                                  | <b>02</b><br>level min | <b>NR3..3.3ES2</b><br>real measure<br>N.m   | <b>K12</b> | <b>AAE201-005</b>                                                                                                                     | <b>02</b><br>level max | <b>NR2..3.3</b><br>real measure<br>N.m    | <b>K12</b> |
| <b>starting torque</b>                                                                                                                                                             |                        | <b>T_strt</b><br>$T_{strt}$                 |            | <b>pull-out torque</b>                                                                                                                |                        | <b>T_pull-out</b><br>$T_{pull-out}$       |            |
| The minimum starting torque (in N.m) which a rotational ac motor develops with the rated input voltage-ac applied.                                                                 |                        |                                             |            | The maximum torque (in N.m) that a rotational stepping motor can develop while running at a given stepping rate without losing steps. |                        |                                           |            |
| NOTE<br>For capacitor motors, the capacitance has to be specified.                                                                                                                 |                        |                                             |            | AAE209-005 = stepping rate                                                                                                            |                        |                                           |            |
| IEC 60050 (411) (1996)                                                                                                                                                             |                        |                                             |            | IEC 60050 (411) (1996)                                                                                                                |                        |                                           |            |

|                                                                                                                                       |                                                    |            |                                                                                                                                           |                                                |            |
|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------|
| <b>AAE202-005 02</b><br>level max                                                                                                     | <b>NR3..3.3ES2</b><br>real measure<br>N.m          | <b>K12</b> | <b>AAE207-005 02</b><br>level max                                                                                                         | <b>NR3..3.3ES2</b><br>real measure<br>N.m      | <b>K12</b> |
| <b>pull-in torque</b><br>max pull-in                                                                                                  | <b>T<sub>pull-in</sub></b><br>T <sub>pull-in</sub> |            | <b>holding torque</b>                                                                                                                     | <b>T<sub>hold</sub></b><br>T <sub>hold</sub>   |            |
| The maximum torque (in N.m) that a rotational stepping motor can develop when starting at a given stepping rate without losing steps. |                                                    |            | The maximum steady torque (in N.m) that can be externally applied to the spindle of an excited motor without causing continuous rotation. |                                                |            |
| AAE209-005 = stepping rate<br>IEC 60050 (411) (1996)                                                                                  |                                                    |            | <b>AAE208-005 01</b><br>level nom                                                                                                         | <b>NR1 S..4</b><br>integer measure<br>deg      | <b>T01</b> |
| <b>AAE203-005 01</b><br>level nom                                                                                                     | <b>NR3..3.3ES2</b><br>real measure<br>A            | <b>E01</b> | <b>step angle</b>                                                                                                                         | <b>\$a<sub>step</sub></b><br>α <sub>step</sub> |            |
| <b>current per phase</b>                                                                                                              | <b>I<sub>ph</sub></b><br>I <sub>ph</sub>           |            | The nominal angle (in deg) between adjacent step positions of a stepping motor or a mechanical rotary switch.                             |                                                |            |
| The nominal rms input current (in A) of a linear stepping motor.                                                                      |                                                    |            | <b>AAE209-005 02</b><br>simple                                                                                                            | <b>NR3..3.3ES2</b><br>real measure<br>step/s   | <b>F03</b> |
| <b>AAE204-005 01</b><br>level nom                                                                                                     | <b>NR3..3.3ES2</b><br>real measure<br>V            | <b>E06</b> | <b>stepping rate</b>                                                                                                                      | <b>@step rate</b><br>@step rate                |            |
| <b>rated input voltage (pulse)</b>                                                                                                    | <b>U<sub>pul</sub></b><br>U <sub>pul</sub>         |            | Number of steps/s of a rotational stepping motor, as a variable.                                                                          |                                                |            |
| The nominal pulse voltage (in V) at the terminals of a stepping motor.<br>IEC 60034-1 (2004)                                          |                                                    |            | <b>AAE210-005 02</b><br>level minMax                                                                                                      | <b>NR2 S..3.3</b><br>real measure<br>V         | <b>E06</b> |
| <b>AAE205-005 01</b><br>level max                                                                                                     | <b>NR1..4</b><br>integer measure<br>step/s         | <b>F03</b> | <b>input voltage limit</b>                                                                                                                | <b>V<sub>Ilim</sub></b><br>V <sub>Ilim</sub>   |            |
| <b>pull-in rate</b>                                                                                                                   | <b>pull-in rate</b><br>pull-in rate                |            | The value as specified by level (minMax) of the limiting direct input voltage (in V) applied to an IC.                                    |                                                |            |
| The maximum switching rate (in step/s) at which an unloaded stepping motor can start without losing steps.                            |                                                    |            | <b>AAE212-005 01</b><br>simple                                                                                                            | <b>NR3..3.3ES2</b><br>real measure<br>Ω        | <b>E33</b> |
| <b>AAE206-005 01</b><br>level max                                                                                                     | <b>NR1..4</b><br>integer measure<br>step/s         | <b>F03</b> | <b>load resistance</b>                                                                                                                    | <b>@R<sub>L</sub></b><br>@R <sub>L</sub>       |            |
| <b>pull-out rate</b>                                                                                                                  | <b>pull-out rate</b><br>pull-out rate              |            | Load resistance (in ohms) at the output of an electric, electronic or electromechanical component, as a variable.                         |                                                |            |
| The maximum switching rate (in step/s) which an unloaded stepping motor can follow without losing steps.                              |                                                    |            |                                                                                                                                           |                                                |            |

|                      |                 |            |                      |                      |            |
|----------------------|-----------------|------------|----------------------|----------------------|------------|
| <b>AAE214-005 02</b> | <b>NR2..3.3</b> | <b>H07</b> | <b>AAE223-005 01</b> | <b>NR3 S..3.3ES2</b> | <b>E01</b> |
| level max            | real measure    |            | level max            | real measure         |            |
|                      | W               |            |                      | A                    |            |

**power dissipation per output P/out**  
dc power dissipation/output P/out

The maximum permissible power dissipation per output (in W) of an IC at specified ambient temperature.

AAE014-005 = ambient temperature

|                      |                      |            |
|----------------------|----------------------|------------|
| <b>AAE217-005 02</b> | <b>NR3 S..3.3ES2</b> | <b>E01</b> |
| level max            | real measure         |            |
|                      | A                    |            |

**input current limit I<sub>Ilim</sub>**  
dc input diode current I<sub>Ilim</sub>  
input clamping current I<sub>NIlim</sub>  
I<sub>Klim</sub>

The maximum limiting dc input current (in A) of a digital function of an IC.

REMARKS:

For ICs containing protection diodes, clamping occurs when the applied input voltage exceeds the supply voltage, or drops below GND or V<sub>SS</sub> level.

|                      |                      |            |
|----------------------|----------------------|------------|
| <b>AAE218-005 02</b> | <b>NR3 S..3.3ES2</b> | <b>E01</b> |
| level max            | real measure         |            |
|                      | A                    |            |

**output current limit I<sub>Olim</sub>**  
dc output diode current I<sub>Olim</sub>  
output clamping current I<sub>OKlim</sub>

The maximum limiting dc output current (in A) of a digital function of an IC.

REMARKS:

For ICs containing protection diodes, clamping occurs when the applied output voltage exceeds the supply voltage, or drops below GND or V<sub>SS</sub> level.

**input leakage current I<sub>I</sub>**  
I<sub>I</sub>  
I<sub>IN</sub>

The maximum guaranteed input leakage current (in A) of a digital function of an IC, at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage

AAE958-005 = temperature T<sub>1</sub>

AAE959-005 = temperature T<sub>2</sub>

REMARKS:

Required input condition (V<sub>I</sub>):

For CMOS and HCMOS, zero (GND/V<sub>SS</sub>) or supply voltage (V<sub>CC</sub>/V<sub>DD</sub>).

For TTL, only valid for an input voltage equal to V<sub>CC</sub>.

|                      |                   |            |
|----------------------|-------------------|------------|
| <b>AAE224-005 01</b> | <b>NR2 S..3.3</b> | <b>E06</b> |
| simple               | real measure      |            |
|                      | V                 |            |

**input voltage @V<sub>I</sub>**  
@V<sub>I</sub>

The dc input voltage (in V) of an IC, as a variable.

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAE225-005 02</b> | <b>NR3..3.3ES2</b> | <b>T07</b> |
| simple               | real measure       |            |
|                      | s                  |            |

**rise time @t<sub>r</sub>**  
@t<sub>r</sub>

The rise time (in s) of a step function change (10% to 90%) of a signal applied to an electric-electronic or electromechanical component, as a variable.

|                      |                      |            |
|----------------------|----------------------|------------|
| <b>AAE226-005 01</b> | <b>NR3 S..3.3ES2</b> | <b>E01</b> |
| simple               | real measure         |            |
|                      | A                    |            |

**output current @I<sub>O</sub>**  
@I<sub>O</sub>

The dc output current (in A) of an IC, as a variable.

**AAE228-005 01** **NR2 S..3.3** **E06**  
simple real measure  
V

**output voltage** **@V\_o(dc)**  
**@V<sub>o(dc)</sub>**

The dc output voltage (in V) of an IC, as a variable.

**AAE231-005 02** **NR3..3.3ES2** **T07**  
level minTypMax real measure  
s

**propagation delay** **t\_PD**  
delay time **t<sub>PD</sub>**

The value as specified by level (minTypMax) of the propagation delay time (in s) of a combinatorial, sequential or interface function of an IC in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE958-005 = temperature  $T_1$

AAE959-005 = temperature  $T_2$

**AAE233-005 02** **NR3..3.3ES2** **T07**  
level minTypMax real measure  
s

**HIGH to LOW propagation time** **t\_PHL**  
HIGH to LOW delay time **t<sub>PHL</sub>**

The value as specified by level (minTypMax) of the HIGH to LOW propagation time (in s) of a combinatorial, sequential or interface function of an IC in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE958-005 = temperature  $T_1$

AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

**AAE235-005 02** **NR3..3.3ES2** **T07**  
level max real measure  
s

**output fall time** **t\_f**  
HIGH to LOW transition time **t<sub>f</sub>**  
switching time **t<sub>THL</sub>**

The maximum guaranteed HIGH-level to LOW-level transition time (in s) at the output of a digital function of an IC at specified load capacitance, supply voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE256-005 = load capacitance  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

REMARKS:

The voltage level specified for the beginning of the slope is 10 %, that for the end of the slope is 90 %.

**AAE237-005 02** **NR3..3.3ES2** **T07**  
level minTypMax real measure  
s

**LOW to HIGH propagation time** **t\_PLH**  
LOW to HIGH delay time **t<sub>PLH</sub>**

The value as specified by level (minTypMax) of the LOW to HIGH propagation time (in s) of a combinatorial, sequential or interface function of an IC in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE958-005 = temperature  $T_1$

AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

**AAE238-005 02 NR3..3.3ES2 T07**  
level max real measure  
s

**output rise time  $t_r$**   
LOW to HIGH transition time  $t_r$   
switching time  $t_{TLH}$

The maximum guaranteed LOW-level to HIGH-level transition time (in s) at the output of a digital function of an IC at specified output capacitance, supply voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE256-005 = load capacitance  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

**REMARKS:**

The voltage level specified for the beginning of the slope is 10 %, that for the end of the slope is 90 %.

**AAE240-005 03 NR3 S..3.3ES2 E01**  
level max real measure  
A

**LOW off-state output current  $I_{OZL}$**   
3-state output leakage current  $I_{OZL}$   
off-state current  $I_{OZ}$

The maximum guaranteed LOW off-state dc output current (in A), of a 3-state digital function of an IC, at maximum supply voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

**REMARKS:**

Applies to digital ICs with 3-state outputs. It is assumed that the required external LOW-state output voltage ( $V_{OL}$  or  $V_{SS}$  or GND) is applied, as well as the appropriate input condition ( $V_{IL}$  and/or  $V_{IH}$ ).

**AAE239-005 03 NR3 S..3.3ES2 E01**  
level max real measure  
A

**HIGH off-state output current  $I_{OZH}$**   
3-state output leakage current  $I_{OZH}$   
off-state current  $I_{OZ}$

The maximum guaranteed HIGH off-state dc output current (in A), of a 3-state digital function of an IC, at the maximum supply voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

**REMARKS:**

Applies to digital ICs with 3-state outputs. It is assumed that the required external HIGH-state output voltage ( $V_{OH}$  or  $V_{CC}$  or  $V_{DD}$ ) is applied, as well as the appropriate input condition ( $V_{IL}$  and/or  $V_{IH}$ ).

**AAE254-005 02 NR3 S..3.3ES2 E01**  
level min real measure  
A

**LOW-state output current  $I_{OL}$**   
LOW-level output current  $I_{OL}$   
output sink current

The minimum guaranteed LOW-state dc output current (in A) of a digital function of an IC, at specified supply voltage, output voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE228-005 = output voltage  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

**REMARKS:**

Refers to the minimum current sinking capacity of the output of a digital IC, at which a specified output voltage ( $V_{OL}$ ) is still maintained, while the inputs are either at zero (GND/ $V_{SS}$ ) or at supply voltage level ( $V_{CC}/V_{DD}$ ).

**AAE255-005 02 NR3 S..3.3ES2 E01**  
 level min real measure  
 A

### HIGH-state output current I<sub>OH</sub>

HIGH-level output current I<sub>OH</sub>  
 output source current

The minimum guaranteed HIGH-state dc output current (in A) of a digital function of an IC, at specified supply voltage, output voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
 AAE228-005 = output voltage  
 AAE958-005 = temperature T<sub>1</sub>  
 AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

### REMARKS:

Refers to the minimum current sourcing capacity of the output of a digital IC, at which a specified output voltage (V<sub>OH</sub>) is still maintained, while the inputs are either at zero (GND/V<sub>SS</sub>) or at supply voltage level (V<sub>CC</sub>/V<sub>DD</sub>).

**AAE256-005 01 NR3..3.3ES2 E09**  
 simple real measure  
 F

### load capacitance @C<sub>L</sub> @C<sub>L</sub>

Load capacitance (in F) at the output of an electric, electronic or electromechanical component, as a variable.

**AAE257-005 01 NR2..3.3 H07**  
 level max real measure  
 W

### power dissipation P P

The maximum power (in W) of an electric-electronic or electromechanical component which may be dissipated continuously at specified temperature of a temperature type.

AAE683-005 = temperature type  
 AAE685-005 = temperature

**AAE259-005 01 M..8 A58**  
 simple non-quantitative code

### shape/size code BSI shape/size

BSI code of the shape/size of an electric-electronic or electromechanical component for placement on printed circuits.

BR = bead package, two radial leads  
 CS = cylindrical package, single-ended, two leads  
 CT = cylindrical package, stud mounting  
 DA = disc package, two axial leads  
 DD = disc package, double tag  
 DL = dual in-line package, multi-lead  
 DP = disc package, printed circuit board mounting  
 DR = disc package, two radial leads  
 DS = disc package, stud mounting  
 DT = disc package, potting tag  
 FP = flat pack, multi-lead  
 PA = potentiometer, panel mounting  
 PB = potentiometer, panel mounting  
 PC = potentiometer, panel mounting  
 PD = potentiometer, panel mounting  
 PE = potentiometer, panel mounting  
 PF = potentiometer, panel mounting  
 PP = rectangular package, three leads, horizontal adjuster  
 PQ = rectangular package, three leads, vertical adjuster  
 RA = rectangular package, two axial leads  
 RC = rectangular package, metallised ends (SMD)  
 RR = rectangular package, two radial leads  
 RS = rectangular package, two strip leads  
 TA = tubular package, two axial leads  
 TR = tubular package, two radial leads  
 XA = oval package, two mounting holes, two leads  
 XB = stud-mounted package, one fixed tag  
 XC = cylindrical metal-can package, multi-lead  
 XD = top-hat package, axial leads  
 XE = stud-mounted package, two fixed tags  
 XF = stud-mounted package, one flexible lead with tag  
 XG = stud-mounted package, two flexible leads with tag  
 XH = stud-mounted package, one flexible lead  
 XK = flat package, three in-line leads  
 XL = near-cylindrical package, three leads on circle  
 XM = flat package, mounting hole, two/three leads  
 XN = flat package, three pre-formed leads  
 XP = moulded case, three mounting feet  
 XR = flat package with flange, mounting hole, 2/3 leads

BS 6943 (1988)

### REMARKS:

The complete code consists of three parts:  
 a) a two-letter drawing code, followed by



- b) a numeric code giving a salient property, which may be either a major dimension or the number of leads, followed by
- c) a hyphen and a serial number to distinguish components with the same drawing and numeric codes.

For reference drawings see source document.

**AAE260-005 02 NR1 S..4 H02**  
simple integer measure  
Cel

**case temperature @T<sub>case</sub>**  
surface temperature @T<sub>case</sub>

The case temperature (in Cel) of a component, as a variable.

IEC 60068-1 (1988)

**AAE262-005 01 M..8 A55**  
simple non-quantitative code

#### encapsulation technology encapsulation

Code indicating the encapsulation technology which has been applied in an electric, electronic or electromechanical component.

LACQ = lacquered  
MOULD = moulded  
POTTED = potted  
SEAL = sealed coat  
SLEEVE = sleeved  
WRAP = wrapped end-filled

**AAE263-005 01 M..8 A56**  
simple non-quantitative code

#### polarity type polarity

Code of the type of polarity of a fixed electrolytic capacitor indicating whether it is designed for unidirectional or alternating/reversible voltages.

BIPOL = bipolar: for ac voltages  
and/or reversible dc voltages  
POLAR = polar: for unidirectional voltages

**AAE266-005 03 M..3 A57**  
simple non-quantitative code

#### dielectric subclass 1 diel subclass1

IEC standard code of the subclass of a fixed class1 ceramic capacitor, as determined by the temperature coefficient and its tolerance.

1A = 1A  
1B = 1B  
1C = 1C  
1D = 1D  
1F = 1F

IEC 60384-8 (1988)

#### REMARKS:

First (numeric) character is always 1 (see AAE038-005)

Second (alphabetic) character indicates tolerance on temperature coefficient of capacitance:

| sub-class code                        | A                                                             | B      | F       | C | D |
|---------------------------------------|---------------------------------------------------------------|--------|---------|---|---|
| temp. coeff.<br>(10 <sup>-6</sup> /K) | Tolerance on temperature<br>Coefficient (10 <sup>-6</sup> /K) |        |         |   |   |
| +100 to -220                          | +/-15                                                         | +/- 30 |         |   |   |
| -330 to -470                          | +/-30                                                         | +/- 60 |         |   |   |
| -750 to -1000                         | +/-60                                                         | +/-120 | +/- 250 |   |   |
| -1500                                 |                                                               |        | +/- 250 |   |   |
| -2200 to -3300                        |                                                               |        | +/- 500 |   |   |
| -4700                                 |                                                               |        | +/-1000 |   |   |
| -5600                                 |                                                               |        | +/-1000 |   |   |
| +140 >TC> -1000                       |                                                               |        |         | C |   |
| +250 >TC> -1750                       |                                                               |        |         |   | D |

For the meaning of the values, see table II of IEC 60384-8 (1988).

**AAE267-005 01 NR1..4 H02**  
level max integer measure  
Cel

**rated temperature** **T<sub>rat</sub>**  
T<sub>rat</sub>

The maximum temperature (in Cel) at which a defined set of rated values apply simultaneously for an electric, electronic or electromechanical component.

**NOTE**

Generally referring to currents, voltages, and/or power.

**AAE268-001 01 NR3 S..3.3ES2 E09**  
level nom real measure  
%

**capacitance upper tolerance** **C<sub>ut</sub>**  
C<sub>ut</sub>

The upper tolerance (in F) of the rated capacitance of a fixed capacitor.

**AAE269-001 01 NR3 S..3.3ES2 E09**  
level nom real measure  
%

**capacitance lower tolerance** **C<sub>lt</sub>**  
C<sub>lt</sub>

The lower tolerance (in F) of the rated capacitance of a fixed capacitor.

**AAE271-005 01 NR1..4 H02**  
simple integer measure  
Cel

**junction temperature** **@T<sub>j</sub>**  
virtual junction temperature @T<sub>j</sub>

The junction temperature (in Cel) of a transistor, diode, trigger device, optoelectronic device or IC as a variable.

IEC 60747-1, amendment 3 (1996)

**AAE272-005 01 NR1..4 H02**  
simple integer measure  
Cel

**mounting base temperature** **@T<sub>mb</sub>**  
@T<sub>mb</sub>

The temperature (in Cel) of the mounting base of a transistor, diode, trigger device, optoelectronic device or IC, as a variable.

JESD 77B (2000)

**AAE273-007 01 X..8 A56**  
simple non-quantitative code

**diode application** **diode appl**

Code of the type of application of a diode.

BOD = breakover diode  
REC = rectifier diode  
SIGD = signal diode  
STB = stabilizer diode  
VARD = variable capacitance diode

**AAE274-005 02 NR3..3.3ES2 E01**  
simple real measure  
A

**forward current** **@I<sub>F</sub>**  
@I<sub>F</sub>

The direct current (in A) flowing through a diode or diode part of an electronic device, in the forward direction, as a variable.

IEC 60747-2 (1983)

**AAE275-005 01 NR3..3.3ES2 E01**  
simple real measure  
A/s

**rate change of forward current** **@dI<sub>F</sub>/dt**  
@dI<sub>F</sub>/dt

The rate of change of forward current (in A/s) of a diode, as a variable.

**AAE276-005 03 NR3..3.3ES2 E01**  
level max real measure  
A

**reverse current I<sub>R</sub>**  
continuous direct reverse current I<sub>R</sub>

The maximum continuous reverse direct current (in A) of a diode, optoelectronic device, thyristor or triac at specified reverse voltage and temperature of a temperature type.

AAE335-005 = reverse voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

IEC 60747-2 (2000)

**AAE277-005 02 NR2..3.3 E06**  
level max real measure  
V

**reverse voltage V<sub>R</sub>**  
stand-off voltage V<sub>R</sub>

The maximum voltage (in V) which may be applied continuously to a diode or diode part of an optoelectronic device in the reverse direction at specified temperature of a temperature type.

AAE683-005 = temperature type  
AAE685-005 = temperature

IEC 60747-2 (2000)

**AAE279-005 02 NR2..3.3 E06**  
level minTypMax real measure  
V

**forward voltage V<sub>F</sub>**  
on-state voltage V<sub>F</sub>

The value as specified by level (minTypMax) of the forward voltage (in V) across a diode or diode part of an optoelectronic device, at specified forward current and temperature of a temperature type.

AAE274-005 = forward current  
AAE683-005 = temperature type  
AAE685-005 = temperature

IEC 60747-2 (2000)

**AAE281-005 02 NR3..3.3ES2 T07**  
level max real measure  
s

**reverse recovery time t<sub>rr</sub>**  
t<sub>rr</sub>

The maximum reverse recovery time (in s) of a diode, when switched from a specified forward current to a specified reverse voltage at a specified change of forward current and junction temperature.

AAE271-005 = junction temperature  
AAE274-005 = forward current  
AAE275-005 = rate change of forward current  
AAE335-005 = reverse voltage

IEC 60747-2 (2000)

**AAE282-005 01 NR3..3.3ES2 E01**  
level max real measure  
A

**output current EHT supply I<sub>O(EHT)</sub>**  
I<sub>O(EHT)</sub>

The maximum output current (in A) at the EHT supply output of a voltage multiplier.

**AAE283-005 01 NR3..3.3ES2 E01**  
level max real measure  
A

**output current focus supply I<sub>O(foc)</sub>**  
I<sub>O(foc)</sub>

The maximum output current (in A) at the focus supply output of a voltage multiplier.

**AAE284-005 03 NR2..3.3 E01**  
level max real measure  
A

**peak inrush current limit I<sub>IIMlim</sub>**  
I<sub>IIMlim</sub>

The maximum limiting peak inrush current (in A) of a bridge rectifier.

**AAE285-005 03 NR2..3.3 E01**  
level max real measure  
A

**non-rep peak input current limit I<sub>ISMlim</sub>**  
I<sub>ISMlim</sub>

The maximum limiting non-repetitive peak input current (in A) flowing through a bridge rectifier.

**AAE286-005 01 NR2..3.3 E01**  
level max real measure  
A

**average output current  $I_{O(AV)}$**   
 $I_{O(AV)}$

The maximum average output current (in A) of a bridge rectifier at specified maximum mounting base temperature.

**AAE287-005 01 NR2..3.3 E01**  
level max real measure  
A

**repetitive peak output current  $I_{ORM}$**   
 $I_{ORM}$

The maximum repetitive peak output current (in A) of a bridge rectifier.

**AAE288-005 02 NR3..3.3ES2 E06**  
level max real measure  
V

**input voltage peak-to-peak  $V_{in(p-p)}$**   
 $V_{in(p-p)}$

The maximum peak-to-peak input voltage (in V) of a voltage multiplier.

**AAE289-005 02 NR3..3.3ES2 E06**  
level max real measure  
V

**output voltage EHT supply  $V_{O(EHT)}$**   
 $V_{O(EHT)}$

The maximum output voltage (in V) at the EHT output of a voltage multiplier.

**AAE290-005 02 NR1..4 E06**  
level max integer measure  
V

**repetitive peak input voltage  $V_{IRM}$**   
 $V_{IRM}$

The maximum repetitive peak input voltage (in V) of a bridge rectifier or voltage multiplier.

**AAE291-005 01 NR1..4 E06**  
level max integer measure  
V

**rms input voltage  $V_{I(RMS)}$**   
 $V_{I(RMS)}$

The maximum rms input voltage (in V) of a bridge rectifier.

**AAE292-005 01 NR1..4 E06**  
level max integer measure  
V

**crest working input voltage  $V_{IWM}$**   
 $V_{IWM}$

The maximum peak input voltage (in V) of a bridge rectifier.

**NOTE**

Excluding all repetitive and non-repetitive transient voltages.

**AAE293-005 03 NR3..3.3ES2 E01**  
level max real measure  
A

**repetitive peak forward current  $I_{FRM}$**   
 $I_{FRM}$

The maximum repetitive peak forward current (in A) flowing through a diode or diac at specified forward voltage.

**NOTE**

Including all repetitive transient currents.

AAE499-005 = forward voltage

IEC 60747-2 (2000)

**AAE294-005 01 NR1..4 E01**  
level max integer measure  
A

**non-repetitive peak forward current  $I_{FSM}$**   
 $I_{FSM}$

The maximum non-repetitive peak forward current (in A) of a diode at specified junction temperature and specified duration prior to the application of the pulse.

AAE028-005 = duration

AAE271-005 = junction temperature

IEC 60747-2 (2000)

**REMARKS:**

Half-sinewave duration is 10 ms.

**AAE296-005 02 NR1..4 E01**  
level max integer measure  
A

**working peak forward current  $I_{FWM}$**   
 $I_{FWM}$

The maximum working peak forward current (in A) of an efficiency diode.

**AAE297-005 02 NR3..3.3ES2**  
level max real measure  
A

**E01**

**repetitive peak reverse current  $I_{RRM}$**   
repetitive peak recovery current  $I_{RRM}$

The maximum repetitive peak reverse current (in A) of a rectifier diode when switched from a specified forward current to a specified reverse voltage at a specified rate of change of forward current and junction temperature.

AAE271-005 = junction temperature  
AAE274-005 = forward current  
AAE275-005 = rate change of forward current  
AAE335-005 = reverse voltage

**AAE298-005 02 NR2..3.3**  
level max real measure  
A

**E01**

**non-rep varistor peak current  $I_{nrp}$**   
non-repetitive surge current  $I_{nrp}$   
non-repetitive transient current

The maximum limiting non-repetitive value of a pulse current (in A) through a varistor, with specified virtual front time and virtual time to half-value.

AAE125-005 = current (pulse)  
AAE332-005 = virtual front time  
AAE333-005 = virtual time to half-value

**AAE299-005 01 NR1..4**  
level max integer measure  
V

**E06**

**crest working reverse voltage  $V_{RWM}$**   
working reverse voltage  $V_{RWM}$

The maximum peak reverse voltage (in V), across a rectifier diode.

**NOTE**  
Excluding all repetitive and non-repetitive transient voltages.

IEC 60747-2 (2000)

**AAE300-005 02 NR1..4**  
level max integer measure  
V

**E06**

**repetitive peak reverse voltage  $V_{RRM}$**   
 $V_{RRM}$

The maximum repetitive peak reverse voltage (in V) across a diode or reverse blocking thyristor.

IEC 60747-2 (2000)

**AAE301-005 03 NR1..4**  
level max integer measure  
V

**E06**

**non-repetitive peak reverse voltage  $V_{RSM}$**   
 $V_{RSM}$

The maximum non-repetitive peak reverse voltage (in V) of a rectifier diode or signal diode.

IEC 60747-2 (2000)

**REMARKS:**  
**NOTE**

The repetitive voltage is usually a function of the circuit and increases the power dissipation of the device. A non-repetitive transient voltage is usually due to an external cause and it is assumed that its effect has completely disappeared before the next transient arrives.

**AAE302-005 02 NR2..3.3**  
level max real measure  
W

**H07**

**repetitive peak reverse power  $P_{RRM}$**   
 $P_{RRM}$

The maximum amplitude (in W) of a repetitive square power pulse dissipated in an avalanche rectifier diode or signal diode, operating in the breakdown region, at specified duration, frequency and junction temperature.

**NOTE**  
For some types of avalanche diodes,  $V_{RRM}$  is specified instead of  $P_{RRM}$ .

AAE028-005 = duration  
AAE029-005 = frequency  
AAE271-005 = junction temperature

**AAE303-006 01 NR2..3.3**  
level max real measure  
W

**H07**

**non-rep peak reverse power diss  $P_{RSM}$**   
 $P_{RSM}$   
 $P_{ZSM}$

The maximum amplitude (in W) of a single non-repetitive square pulse dissipated in a rectifier or signal diode, at specified pulse duration and junction temperature prior to the application of the pulse.

AAE028-005 = duration  
AAE271-005 = junction temperature

**AAE304-005 03 NR3..3.3ES2 H20**  
 level max real measure  
 J

**non-rep peak rev avalanche energy E\_RSM**  
 $E_{RSM}$

The maximum non-repetitive peak reverse avalanche mode pulse energy (in J) of a rectifier diode, at specified reverse current and maximum junction temperature prior to the application of the pulse and with inductive load switched off.

AAE994-005 = reverse current

**NOTE**

$E_{RSM}$  can also be calculated from  $P_{RSM}$ .

**AAE305-005 01 NR2 S..3.3 H06**  
 level max real measure  
 J

**Joule-integral (I\*\*2)\*t**  
 I squared t for fusing  $I^2t$

The maximum capability of a thyristor, triac or diode to absorb energy (in J) at specified time duration.

**NOTE**

When considered from the point of view of the circuit protected by a fuse, the value of the Joule-integral over the operating time of the fuse is referred to as specific energy, i.e. the energy released as heat in 1  $\Omega$  of circuit resistance.

AAE028-005 = duration

IEC 60050-441, amendment 1 (2000)

**REMARKS:**

The value is given for the selection of fuses.

**AAE306-005 03 NR3..3.3ES2 T07**  
 level max real measure  
 s

**total reverse recovery time t\_tot**  
 $t_{tot}$

The maximum total reverse recovery time (in s) of an efficiency diode when switched from a specified forward current and with a specified rate-change of forward current and junction temperature to a reverse voltage of about 0,7 V (being the saturation voltage of the transistor in parallel) and a diode reverse current equal to zero.

**NOTE**

The moment the reverse current equals zero is measured by shifting the flyback pulse, used in the application circuit, and detecting the moment the front of the flyback pulse is entering the reverse current of the efficiency diode.

AAE271-005 = junction temperature

AAE274-005 = forward current

AAE275-005 = rate change of forward current

AAE994-005 = reverse current

**AAE310-005 02 NR2..3.3 E44**  
 level minTypMax real measure  
 $\Omega$

**diode forward resistance r\_D**  
 diode series resistance  $r_D$

The value as specified by level (minTypMax) of the series resistance (in ohms) of a signal diode or variable capacitance diode at specified frequency and forward current.

AAE029-005 = frequency

AAE274-005 = forward current

**AAE311-005 02 NR2..3.3 E44**  
 level minTypMax real measure  
 $\Omega$

**diode reverse resistance r\_s**  
 diode series resistance  $r_s$

The value as specified by the level (minTypMax) of the series resistance (in ohms) of a tuning variable capacitance diode at specified frequency and adjusted diode capacitance.

**NOTE**

The specified diode capacitance has to be adjusted with the reverse voltage.

AAE029-005 = frequency

AAE497-005 = diode capacitance



**AAE312-005 01 X..3 A56**  
simple non-quantitative code

**diode function diode function**

Code of the function of a stabiliser diode.

CUR = current regulator diode  
REF = voltage reference diode  
REG = voltage regulator diode  
STA = stabistor  
SUP = transient suppressor diode

**AAE313-005 01 NR2..3.3 E06**  
level max real measure  
V

**clamping voltage V<sub>(CL)</sub>R**  
V<sub>(CL)R</sub>

The maximum clamping voltage (in V) of a transient suppressor diode at specified non-repetitive peak reverse current, virtual front time and virtual time to half-value.

AAE315-005 = non-rep peak reverse current  
AAE332-005 = virtual front time  
AAE333-005 = virtual time to half-value

REMARKS:

|               |                                  |
|---------------|----------------------------------|
| 8/20 impulse: | 8 us virtual front time          |
|               | 20 us virtual time to half-value |
| 4/10 impulse: | 4 us virtual front time          |
|               | 10 us virtual time to half-value |

**AAE315-005 02 NR2..3.3 E01**  
simple real measure  
A

**non-rep peak reverse current @I<sub>RSM</sub>**  
@I<sub>RSM</sub>

The non-repetitive peak reverse current (in A) of a stabiliser diode, as a variable.

IEC 60060-1 (1989)

**AAE316-005 01 NR3..3.3ES2 E01**  
level max real measure  
A

**working current I<sub>Z</sub>**  
I<sub>Z</sub>

The maximum direct reverse current (in A) which may be applied continuously to a voltage reference diode, voltage regulator diode or transient suppressor diode.

**AAE317-005 01 NR3..3.3ES2 E01**  
level max real measure  
A

**peak working current I<sub>ZM</sub>**  
I<sub>ZM</sub>

The maximum peak working current (in A) of a stabiliser diode.

**AAE318-005 02 NR2..3.3 E01**  
level max real measure  
A

**non-repetitive peak reverse current I<sub>RSM</sub>**  
I<sub>RSM</sub>

The maximum non-repetitive peak reverse current (in A) of a stabiliser diode at specified virtual front time and virtual time to half-value.

AAE332-005 = virtual front time  
AAE333-005 = virtual time to half-value

IEC 60060-1 (1989)

REMARKS:

|                  |                                    |
|------------------|------------------------------------|
| 8/20 impulse:    | 8 us virtual front time            |
|                  | 20 us virtual time to half-value   |
| 4/10 impulse:    | 4 us virtual front time            |
|                  | 10 us virtual time to half-value   |
| 6/320 impulse:   | 6 us virtual front time            |
|                  | 320 us virtual time to half-value  |
| 10/1000 impulse: | 10 us virtual front time           |
|                  | 1000 us virtual time to half-value |

**AAE319-005 01 NR1..4 E06**  
level max integer measure  
V

**maximum clamping voltage U<sub>clam</sub>**  
max peak voltage at I<sub>class</sub> U<sub>clam</sub>  
voltage at class current (IEC)

The maximum clamping voltage (in V) across a varistor when, at reference conditions, a specified pulse current, with specified virtual front time and virtual time to half-value, is passed through the varistor.

AAE125-005 = current (pulse)  
AAE332-005 = virtual front time  
AAE333-005 = virtual time to half-value  
AAE995-005 = reference conditions

IEC 61051-1 (1991)

**AAE322-005 01 NR2 S..3.3 E06**  
level max real measure  
%/K

**temperature coefficient** **S\_Z S\_Z**  
S<sub>Z</sub>

The maximum temperature coefficient (in %/K) of a voltage reference diode or voltage stabiliser diode, at specified working current.

AAE500-005 = working current

**AAE323-005 01 NR2..3.3 E33**  
level max real measure  
Ω

**differential resistance** **r\_dif**  
r<sub>dif</sub>

The maximum differential resistance (in ohms), being the quotient of the delta V<sub>F</sub> and delta I<sub>F</sub>, of a voltage reference diode at specified working current.

AAE500-005 = working current

**AAE324-005 01 NR2..3.3 E06**  
level miNoMax real measure  
V

**working voltage** **V\_Z**  
reference voltage V<sub>Z</sub>  
regulation voltage V<sub>ref</sub>

The value as specified by level (miNoMax) of the working voltage (in V) of a voltage regulator diode or voltage reference diode at specified working current.

AAE500-005 = working current

**AAE326-005 01 NR2..3.3 H02**  
simple real measure  
Cel

**tie point temperature** **@T\_tp**  
@T<sub>tp</sub>

The temperature (in Cel) of the tie point of a voltage regulator diode, as a variable.

**AAE327-006 01 NR1..4 H07**  
level max integer measure  
W

**non-rep peak reverse power diss** **P\_ZSM**  
P<sub>ZSM</sub>

The maximum non-repetitive peak reverse power dissipation (in W) of a stabilising diode, at specified time duration and junction temperature prior to the application of the square shaped pulse.

AAE028-005 = duration  
AAE271-005 = junction temperature

**AAE328-005 02 NR2..3.3 E33**  
level max real measure  
Ω

**differential resistance** **r\_dif**  
r<sub>dif</sub>

The maximum quotient of the delta V<sub>F</sub> over delta I<sub>F</sub> (in ohms), of a voltage regulator diode or stabistor at specified forward current and a frequency of 1000 Hz.

AAE274-005 = forward current

**AAE329-005 01 NR3 S..3.3ES2 E06**  
level max real measure  
V/K

**temperature coefficient** **S\_F S\_F**  
S<sub>F</sub>

The maximum temperature coefficient (in V/K) of a stabistor at specified forward current and forward voltage.

AAE274-005 = forward current  
AAE499-005 = forward voltage

**AAE331-005 01 M..17 A58**  
simple string

**diode package** **diode package**  
diode envelope

Code of the envelope of a diode or trigger device.

|                                |                                         |            |                                   |                                         |            |
|--------------------------------|-----------------------------------------|------------|-----------------------------------|-----------------------------------------|------------|
| <b>AAE332-005 02</b><br>simple | <b>NR3..3.3ES2</b><br>real measure<br>s | <b>T07</b> | <b>AAE336-005 01</b><br>level max | <b>NR1..4</b><br>integer measure<br>Cel | <b>H02</b> |
|--------------------------------|-----------------------------------------|------------|-----------------------------------|-----------------------------------------|------------|

**virtual front time** @t<sub>1</sub>  
@t<sub>1</sub>

The virtual front time t<sub>1</sub> (in s) of an impulse applied to a stabiliser diode, as a variable.

**NOTE**

If oscillations are present on the front, the 10 % and 90 % values should be derived from a mean curve drawn through these oscillations in an analogous manner to that used for oscillatory lightning impulses.

IEC 60060-1 (1989)

**REMARKS:**

The difference between front times measured according to this definition and to that given in IEC 60060-1 (1989) for lightning impulses is generally less than 10 %.

|                                |                                         |            |
|--------------------------------|-----------------------------------------|------------|
| <b>AAE333-005 02</b><br>simple | <b>NR3..3.3ES2</b><br>real measure<br>s | <b>T07</b> |
|--------------------------------|-----------------------------------------|------------|

**virtual time to half-value** @t<sub>2</sub>  
@t<sub>2</sub>

The virtual time to half-value t<sub>2</sub> (in s) of an impulse current applied to a stabiliser diode, as a variable.

IEC 60060-1 (1989)

|                                           |                                       |            |
|-------------------------------------------|---------------------------------------|------------|
| <b>AAE334-005 01</b><br>level minMax<br>V | <b>NR1..4</b><br>integer measure<br>V | <b>E06</b> |
|-------------------------------------------|---------------------------------------|------------|

**varistor voltage at 1 mA U<sub>var</sub>(1mA)**  
U<sub>var</sub>(1mA)

The value as specified by level (minMax) of the dc voltage (in V) across a varistor when a current of 1 mA dc is passed through it.

|                                |                                      |            |
|--------------------------------|--------------------------------------|------------|
| <b>AAE335-005 01</b><br>simple | <b>NR2..3.3</b><br>real measure<br>V | <b>E06</b> |
|--------------------------------|--------------------------------------|------------|

**reverse voltage** @V<sub>R</sub>  
stand-off voltage @V<sub>R</sub>

The direct voltage (in V) applied to a diode or optoelectronic device in reverse direction, as a variable.

IEC 60747-2 (2000)

**mounting base temperature** T<sub>mb</sub>  
T<sub>mb</sub>

The maximum temperature (in Cel) of the mounting base of a transistor, diode, trigger device, optoelectronic device or IC.

JESD 77B (2000)

|                                   |                                         |            |
|-----------------------------------|-----------------------------------------|------------|
| <b>AAE337-005 01</b><br>level max | <b>NR1..4</b><br>integer measure<br>Cel | <b>H02</b> |
|-----------------------------------|-----------------------------------------|------------|

**junction temperature** T<sub>j</sub>  
virtual junction temperature T<sub>j</sub>

The maximum junction temperature (in Cel) of a transistor, diode, trigger device, optoelectronic device or IC.

IEC 60747-1 (1983)

|                                   |                                       |            |
|-----------------------------------|---------------------------------------|------------|
| <b>AAE338-005 01</b><br>level max | <b>NR1..4</b><br>integer measure<br>V | <b>E06</b> |
|-----------------------------------|---------------------------------------|------------|

**maximum noise voltage U<sub>n</sub>**  
voltage handling capacity U<sub>n</sub>

The maximum simulated programme noise voltage of a loudspeaker (in V), of specified duration and at specified filter and mounting of loudspeaker.

**NOTE**

After the maximum voltage has been applied, no thermal or mechanical damage fault may result.

AAE028-005 = duration  
AAE342-005 = mounting of loudspeaker  
AAE343-005 = filter

|                                   |                                          |            |
|-----------------------------------|------------------------------------------|------------|
| <b>AAE339-005 02</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>Hz | <b>F03</b> |
|-----------------------------------|------------------------------------------|------------|

**upper rated frequency** f<sub>upr</sub>  
f<sub>upr</sub>

The nominal upper frequency (in Hz) of a loudspeaker.

**AAE340-005 01 NR3..3.3ES2 F03**  
level min real measure  
Hz

**effective frequency f<sub>e2</sub>f<sub>e2</sub>**  
f<sub>e2</sub>

The minimum value of the upper effective frequency (in Hz) of a loudspeaker, microphone or antenna.

**REMARKS:**

For a loudspeaker, the -10 dB frequency.

**AAE341-005 01 NR3..3.3ES2 F03**  
level max real measure  
Hz

**effective frequency f<sub>e1</sub>f<sub>e1</sub>**  
f<sub>e1</sub>

The maximum value of the lower effective frequency (in Hz) of a loudspeaker, microphone or antenna.

**REMARKS:**

For a loudspeaker, the -10 dB frequency.

**AAE342-005 01 M..3 A51**  
simple non-quantitative code

**mounting of loudspeaker @lsp mounting**

Code of the mounting arrangement of a loudspeaker.

ENC = enclosure  
HSF = half space free field  
UNM = unmounted  
BFL = baffle

**NOTE**

The performance of a loudspeaker system is determined by the properties of the loudspeaker unit itself and its acoustic loading. The acoustic loading depends upon the mounting arrangements as there are: a) a standard baffle or specified enclosure, b) in free air without a baffle or enclosure, c) in half space free-field, flush with the reflecting plane.

**AAE343-005 01 M..3 A51**  
simple non-quantitative code

**filter @filter**  
network

Code of the filter used with a loudspeaker.

L = L network  
S = series network  
W = without filter

**REMARKS:**

The L network is a capacitor in series with a coil and loudspeaker in parallel.

**AAE345-005 01 M..3 A58**  
simple non-quantitative code

**female entry female entry**  
socket-inlet  
bottom entry

Code of the entry of a connector.

ONE = one-way  
TWO = two-way (bottom entry)

**AAE347-005 01 M..17 A59**  
simple string

**CECC specification CECC spec**

CECC code of the specification in which an electric/electronic or electromechanical component is released under the CECC quality assessment system.

CECC 00100

**REMARKS:**

CECC = CENELEC Electronic Components Committee

CENELEC = European Committee for Electrotechnical Standardisation

Quality assessment:

The continuous surveillance of the manufacturer of a product to ensure that it conforms to the requirements of the specification to which it was made.

GEN = general  
SEC = sectional  
DET = detail

**AAE348-005 01** **M..3** **A58**  
simple non-quantitative code

**pinning arrangement pin arrangement**

Code of the pinning arrangement of a connector.

CIR = circular  
CON = concentric  
SQU = square  
STA = staggered

**AAE349-006 01** **M..8** **A56**  
simple non-quantitative code

**connector type connector**

Code of the type of a connector, according to its shape, application, mating part or the type of component to which it will be permanently attached.

CIRC = circular connector  
IC = connector for IC cards  
JACK = plug or jack  
MOD = modular connector  
PCB = connector for PCB  
RECT = rectangular connector  
RF = rf connector  
SOCK = socket  
TERM = terminal

**AAE350-005 01** **M..8** **A57**  
simple non-quantitative code

**contact finish contact finish**

Code of the finish material of the contacts of a connector, relay or switch.

Ag = silver  
Au = gold  
CuZn = brass  
Ni = nickel  
PCuSn = phosphor bronze  
Pd = palladium  
Sn = tin  
Zn = zinc

**AAE351-006 01** **M..8** **A57**  
simple non-quantitative code

**housing material housing mat**  
shell material

Code of the material of the housing or shell of a connector or switch.

CER = ceramic  
DAP = \*diallylphthalate  
MET = metal  
PA = \*polyamide  
PC = \*polycarbonate (makrolon)  
PLA = plastic  
PPOX = \*polyphenyleneoxide (noryl)  
PTFE = \*polytetrafluorethylene (teflon)

**AAE352-005 01** **M..8** **A58**  
simple non-quantitative code

**terminal-to-contact angle term cont angle**

Code of the angle between terminal and contact of a connector.

DEG = 45 degree  
RIGHT = 90 degree (right angle)  
STRAI = 180 degree (straight)

**AAE353-005 01** **M..3** **A58**  
simple non-quantitative code

**contact sex contact sex**

sex of contacts  
sex of guides

IEC code of the type of the contact of a connector.

F = female (socket) IEC169-1 (1987)  
H = hermaphroditic IEC169-1 (1987)  
M = male (pin) IEC169-1 (1987)

IEC 60807-1 (1991)

**AAE354-005 01** **M..8** **A58**  
simple non-quantitative code

**polarisation****polarization**

Code of the means by which polarisation of a connector is achieved.

CONTAC = contact  
JUMPER = jumper  
PIN = pin  
PLUG = plug  
SHELL = shell

**REMARKS:**

Polarisation is a shape feature on connectors to prevent incorrect mating.

**AAE355-005 01** **M..8** **A57**  
simple non-quantitative code

**contact body material** **cont body mat**

Code of the material of the body of the contacts of a connector, relay or switch.

BeCu = beryllium copper  
Cu = copper  
CuSn = bronze  
CuZn = brass  
Ni = nickel  
PCuSn = phosphor bronze

**AAE356-005 02** **M..3** **A58**  
simple non-quantitative code

**connector shape****connector shape**

Code of the shape of the shell of a connector.

CIR = circular (round)  
D = D-connector  
REC = rectangular

**AAE357-005 02** **M..3** **A59**  
simple non-quantitative code

**performance class****performance cls**

Code of the performance class of a connector.

1 = 1  
1a = 1a  
2 = 2  
3 = 3

**REMARKS:**

Performance class is the combination of mechanical endurance and climatic category.

| performance class | mechanical endurance | climatic category |
|-------------------|----------------------|-------------------|
|                   |                      | min/max/days      |
| 1                 | 500                  | 55/125/56         |
| 1a                | 500                  | 65/125/65         |
| 2                 | 400                  | 55/125/00         |
| 3                 | 50                   | 55/125/00         |

**AAE358-005 01** **NR3..3.3ES2** **E01**  
level max real measure A

**contact current max** **I<sub>cont</sub>**  
I<sub>cont</sub>

The maximum continuous rms current (in A) per contact of a connector, at specified ambient temperature.

AAE014-005 = ambient temperature

**AAE359-005 02** **NR1..4** **Q56**  
level nom integer measure 1

**number of contacts** **N<sub>cont</sub>**  
contact positions N<sub>cont</sub>

The total number of contacts of a connector.

**AAE360-005 02** **NR1..4** **Q56**  
level nom integer measure 1

**number of rows** **N<sub>row</sub>**  
N<sub>row</sub>

The number of contact rows of a connector.

**REMARKS:**

The rows used to arrange the total number of contacts in a rectangle or trapezium form.



**AAE361-005 02** **NR1..4** **Q59**  
level min integer measure  
1

**mechanical endurance** **N\_endu**  
insertions  $N_{endu}$

The minimum number of engagements and separations that the connector can withstand without electrical load.

**NOTE**

After test the connector shall fulfil requirements stated in IEC 60169-1 (1987).

IEC 60169-1 (1987)

**AAE362-005 02** **NR3..3.3ES2** **T03**  
level min real measure  
m

**connector opening** **d\_con**  
printed board thickness  $d_{con}$   
aperture

The minimum opening (in m) in an edge connector to receive the metal-clad base material of a printed board including conductive layer or layers but excluding additional plating.

IEC 60194 (1999)

**AAE363-005 01** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**contact length under housing** **I\_cont**  
 $I_{cont}$

The nominal length (in m) of that part of a contact of a connector that is intended to make contact with the mating part.

IEC 60050 (581) (1978)

**REMARKS:**

Terminating end outside the connector housing.

**AAE364-005 02** **M..3** **A55**  
simple non-quantitative code

**gate type** **gate type**

Code indicating the type of gate of a field-effect transistor.

DEP = \*depletion  
ENH = \*enhancement  
INS = insulated gate  
JUN = junction gate

**AAE366-005 01** **M..3** **A57**  
simple non-quantitative code

**channel type** **channel type**

Code indicating the material type of the channel(s) of a field-effect transistor.

N = N-channel  
P = P-channel

**AAE367-005 02** **NR3 S..3.3ES2** **E01**  
simple real measure  
A

**drain current (dc)** **@I\_D**  
 $@I_D$

The direct current (in A) flowing through the drain of a field-effect transistor, as a variable.

**AAE368-005 01** **NR3 S..3.3ES2** **E01**  
level max real measure  
A

**drain current (dc)** **I\_D**  
 $I_D$

The maximum direct drain current (in A) of a field effect transistor.

**AAE370-005 01** **NR3 S..3.3ES2** **E01**  
level minMax real measure  
A

**drain current (dc)** **I\_DSS**  
 $I_{DSS}$

The value as specified by level (minMax) of the direct drain current (in A) of a field-effect transistor at specified drain-source voltage and source short-circuited to the gate.

AAE376-005 = drain-source voltage

**AAE371-005 01** **NR3 S..3.3ES2** **E01**  
level max real measure  
A

**drain cut-off current** **I\_DSX**  
 $I_{DSX}$

The maximum guaranteed drain cut-off current (in A) of a field-effect transistor at specified drain-source voltage, gate-source voltage and source-substrate voltage.

AAE376-005 = drain-source voltage  
AAE381-005 = gate-source voltage  
AAE388-005 = source-substrate voltage

IEC 60747-8 (2000)

**AAE372-005 01 NR3 S..3.3ES2 E01**  
level minTypMax real measure  
A

**gate cut-off current I\_GSS**  
reverse gate current I<sub>GSS</sub>

The value as specified by level (minTypMax) of the reverse gate current (in A) of a field-effect transistor with the drain short-circuited to the source and at specified gate-source voltage and temperature of a temperature type.

AAE381-005 = gate-source voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAE373-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A

**source cut-off current I\_SDx**  
I<sub>SDx</sub>

The maximum guaranteed source cut-off current (in A) of a field-effect transistor at specified drain-source voltage, drain-gate voltage and drain-substrate voltage.

AAE375-005 = drain-gate voltage  
AAE376-005 = drain-source voltage  
AAE378-005 = drain-substrate voltage

IEC 60747-8 (2000)

**AAE374-005 01 NR1..4 E06**  
level min integer measure  
dB

**common-mode rejection ratio CMRR**  
CMRR

The minimum guaranteed common mode rejection ratio (in dB) of a dual field effect transistor at specified drain current, drain-gate voltage and frequency.

AAE029-005 = frequency  
AAE367-005 = drain current (dc)  
AAE375-005 = drain-gate voltage

$$\text{CMRR} = -20 \log \left| \frac{g_{os}}{g_{fs}} \right| \text{ in dB}$$

**AAE375-005 02 NR1..4 E06**  
simple integer measure  
V

**drain-gate voltage @V\_DG**  
@V<sub>DG</sub>

The direct voltage (in V) between the drain and gate of a field-effect transistor, as a variable.

**AAE376-005 01 NR1 S..4 E06**  
simple integer measure  
V

**drain-source voltage @V\_DS**  
@V<sub>DS</sub>

The direct voltage (in V) between drain and source terminals of a field-effect transistor, as a variable.

**AAE377-005 02 NR1 S..4 E06**  
level max integer measure  
V

**drain-source voltage limit V\_DSlim**  
V<sub>DSlim</sub>

The maximum limiting direct voltage (in V) between drain and source terminals of a field-effect transistor.

**AAE378-005 02 NR1 S..4 E06**  
simple integer measure  
V

**drain-substrate voltage @V\_DB**  
@V<sub>DB</sub>

The direct voltage (in V) between the substrate and drain of a field-effect transistor, as a variable.

**AAE379-005 02 NR1 S..4 E06**  
level max integer measure  
V

**drain-substrate voltage limit V\_DBlim**  
V<sub>DBlim</sub>  
V<sub>DUIlim</sub>

The maximum limiting direct voltage (in V) between drain and substrate of a field-effect transistor.

**AAE380-005 01 NR3..3.3ES2 E06**  
level max real measure  
V

**equivalent noise voltage V\_n**  
equivalent input noise voltage V<sub>n</sub>

The maximum equivalent noise voltage (in V) of a field effect transistor at specified drain current, drain-source voltage and bandwidth.

AAE367-005 = drain current (dc)  
AAE376-005 = drain-source voltage  
AAE934-005 = bandwidth

IEC 60747-1 (1983)

**AAE381-005 01 NR1 S..4 E06**  
simple integer measure  
V

**gate-source voltage** @V<sub>GS</sub>  
@V<sub>GS</sub>

The direct voltage (in V) between gate and source terminals of a field-effect transistor, as a variable.

**AAE383-005 01 NR3..3.3ES2 E06**  
level max real measure  
V

**gate-source voltage difference** |\$DV<sub>GS</sub>|  
|ΔV<sub>GS</sub>|

The maximum absolute value (in V) of the difference in direct gate-source voltages of a dual field-effect transistor at specified drain current and drain-gate voltage.

AAE367-005 = drain current (dc)  
AAE375-005 = drain-gate voltage

**AAE384-005 02 NR1 S..4 E06**  
level minTypMax integer measure  
V

**gate-source threshold voltage V<sub>GSth</sub>**  
V<sub>GSth</sub>  
V<sub>GS(T)</sub>  
V<sub>GS(T0)</sub>

The value as specified by level (minTypMax) of the direct threshold voltage (in V) between gate and source terminals of an enhancement field-effect transistor at specified drain current and drain-source voltage.

AAE367-005 = drain current (dc)  
AAE376-005 = drain-source voltage

IEC 60747-8 (2000)

**AAE386-005 01 NR1 S..4 E06**  
level minTypMax integer measure  
V

**gate-source cut-off voltage V<sub>GSoff</sub>**  
V<sub>GSoff</sub>  
V<sub>(P)GS</sub>

The value as specified by level (minTypMax) of the gate-source cut-off voltage (in V) of a depletion field-effect transistor at specified drain current, drain-source voltage and temperature of a temperature type.

AAE367-005 = drain current (dc)  
AAE376-005 = drain-source voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

IEC 60747-8 (2000)

**AAE387-005 02 NR1 S..4 E06**  
level max integer measure  
V

**source-substrate voltage limit V<sub>SBlim</sub>**  
V<sub>SBlim</sub>

The maximum limiting direct voltage (in V) between source and substrate of a field-effect transistor.

**AAE388-005 01 NR1 S..4 E06**  
simple integer measure  
V

**source-substrate voltage** @V<sub>SB</sub>  
@V<sub>SB</sub>

The direct voltage (in V) between the source and the substrate of a field-effect transistor, as a variable.

**AAE389-005 02 NR3..3.3ES2 E06**  
level max real measure  
V/K

**thermal drift gate-source voltage**  
d(\$DV<sub>GS</sub>)/dT  
|d(ΔV<sub>GS</sub>)/dT|

The maximum absolute value (in V/K) of the thermal drift of the gate-source voltage difference of a dual field-effect transistor at specified drain-gate voltage, drain current and ambient temperature.

AAE014-005 = ambient temperature  
AAE367-005 = drain current (dc)  
AAE375-005 = drain-gate voltage

**AAE390-005**    **01**    **NR3..3.3ES2**    **E09**  
                          level minTypMax    real measure  
                          F

**feedback capacitance**    **C\_rs**  
 transfer capacitance     $C_{rs}$   
                           $C_{rss}$

The value as specified by level (minTypMax) of the capacitance (in F) between the drain and the gate with the input short-circuited to ac, of a field-effect transistor at specified frequency, drain-source voltage and gate-source voltage.

AAE029-005 = frequency  
 AAE376-005 = drain-source voltage  
 AAE381-005 = gate-source voltage

IEC 60747-8 (2000)

**AAE391-005**    **02**    **NR3..3.3ES2**    **E33**  
                          level minTypMax    real measure  
                           $\Omega$

**drain-source on-state resistance**    **R\_DSon**  
                           $R_{DSon}$

The value as specified by level (minTypMax) of the dc resistance (in ohms) between the drain and source terminals of a field-effect transistor with a specified gate-source voltage applied to bias the device to the on-state, a specified drain current and temperature of a temperature type.

AAE367-005 = drain current (dc)  
 AAE381-005 = gate-source voltage  
 AAE683-005 = temperature type  
 AAE685-005 = temperature

IEC 60747-8 (2000)

**AAE393-005**    **02**    **NR3..3.3ES2**    **E33**  
                          level max    real measure  
                           $\Omega$

**drain-source on-state resistance**    **r\_ds(on)**  
                           $r_{ds(on)}$

The maximum small-signal resistance (in ohms) between the drain and source terminals of a unipolar field effect transistor with a specified gate-source voltage applied to bias the device in the on-state, and at specified drain-source voltage, source-substrate voltage and frequency.

AAE029-005 = frequency  
 AAE376-005 = drain-source voltage  
 AAE381-005 = gate-source voltage  
 AAE388-005 = source-substrate voltage

IEC 60747-8 (2000)

**AAE394-005**    **02**    **NR3..3.3ES2**    **E33**  
                          level min    real measure  
                           $\Omega$

**drain-source off-state resistance**    **R\_DSoff**  
                           $R_{DSoff}$

The minimum dc resistance (in ohms) between drain and source terminals of a field-effect transistor with a specified gate-source voltage to bias the device in the off-state, and specified drain-source voltage and source-substrate voltage.

AAE376-005 = drain-source voltage  
 AAE381-005 = gate-source voltage  
 AAE388-005 = source-substrate voltage

IEC 60747-8 (2000)

**AAE396-005**    **02**    **NR3..3.3ES2**    **E45**  
                          level minTypMax    real measure  
                          S

**transfer admittance**    **|Y\_fs|**  
                           $|Y_{fs}|$

The value as specified by level (minTypMax) of the modulus of the transfer admittance (in S) of a field effect transistor at specified frequency, drain current, gate-source voltage and drain-source voltage.

AAE029-005 = frequency  
 AAE367-005 = drain current (dc)  
 AAE376-005 = drain-source voltage  
 AAE381-005 = gate-source voltage

**AAE400-005**    **01**    **NR1..4**    **H02**  
                          simple    integer measure  
                          Cel

**heatsink temperature**    **@T\_h**  
                           $@T_h$

The temperature (in Cel) of the heatsink of a transistor, diode, trigger device, optoelectronic device or IC, as a variable.

**AAE401-005**    **01**    **X..3**    **A55**  
                          simple    non-quantitative code

**transistor technology**    **tra technology**

Code of the technology to which a transistor belongs.

BIP            = bipolar transistor  
 FET           = field-effect transistor

**AAE402-005 02 NR3..3.3ES2 E01**  
level minTypMax  
1 real measure

**dc current gain** **h<sub>FE</sub>**  
h<sub>FE</sub>

The value as specified by level (minTypMax) of the static ratio of the collector current to the base current of a bipolar transistor in common emitter configuration at specified collector current, collector-emitter voltage and junction temperature.

AAE271-005 = junction temperature  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage

IEC 60748

**AAE405-005 02 NR3..3.3ES2 E01**  
level max real measure  
A

**collector current (dc) max** **I<sub>C</sub>**  
I<sub>C</sub>

The maximum direct collector current (in A) of a bipolar transistor or optoelectronic device.

IEC 60748

**AAE406-005 01 NR3 S..3.3ES2 E01**  
simple real measure  
A

**collector current (dc)** **@I<sub>C</sub>**  
@I<sub>C</sub>

The direct collector current (in A) of a bipolar transistor or transistor part of an electronic device, as a variable.

IEC 60748

**AAE407-005 01 NR3..3.3ES2 E01**  
level max real measure  
A

**collector current peak value** **I<sub>CM</sub>**  
I<sub>CM</sub>

The maximum peak value of the collector current (in A) of a bipolar transistor during a specified duration.

AAE028-005 = duration

**AAE408-005 01 NR3 S..3.3ES2 E01**  
simple real measure  
A

**emitter current (dc)** **@I<sub>E</sub>**  
@I<sub>E</sub>

The direct emitter current (in A) of a bipolar transistor, as a variable.

IEC 60748

**AAE409-005 01 NR3 S..3.3ES2 E01**  
simple real measure  
A

**base current (dc)** **@I<sub>B</sub>**  
@I<sub>B</sub>

The direct base current (in A) of a bipolar transistor, as a variable.

**AAE410-005 03 NR1..4 E01**  
level minTypMax integer measure  
1

**small-signal current gain** **h<sub>fe</sub>**  
h<sub>fe</sub>

The value as specified by level (minTypMax) of the dynamic ratio of the collector current to the base current of a bipolar transistor in common-emitter configuration at specified collector current, collector-emitter voltage, junction temperature and frequency.

AAE029-005 = frequency  
AAE271-005 = junction temperature  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage

IEC 60748

**AAE412-005 01 NR2 S..3.3 E06**  
simple real measure  
V

**collector-emitter voltage** **@V<sub>CE</sub>**  
@V<sub>CE</sub>

The direct voltage (in V) between the collector and emitter terminals of a bipolar transistor, as a variable.

IEC 60748

**AAE413-005 02 NR2 S..3.3 E06**  
level max real measure  
V

**collector-emitter voltage  $V_{CE}$   $V_{CER}$**   
 $V_{CER}$

The maximum direct voltage (in V) between collector and emitter terminals of a bipolar transistor at specified resistance between base and emitter terminals.

AAE906-005 = base-emitter resistance

IEC 60748

**AAE414-005 02 NR3 S..3.3ES2 E06**  
level max real measure  
V

**collector-emitter voltage  $V_{CE}$   $V_{CEO}$**   
 $V_{CEO}$

The maximum voltage (in V) between collector and emitter terminals of a bipolar transistor at open base terminal.

IEC 60748

**AAE415-005 01 NR2 S..3.3 E06**  
level max real measure  
V

**collector-emitter peak voltage  $V_{CESM}$**   
 $V_{CESM}$

The maximum peak collector-emitter voltage (in V) of a bipolar transistor when the base terminal is short-circuited to the emitter terminal.

IEC 60748

**AAE416-005 01 NR2 S..3.3 E06**  
level minTypMax real measure  
V

**collector-emitter sat voltage  $V_{CEsat}$**   
 $V_{CEsat}$

The value as specified by level (minTypMax) of the collector-emitter saturation voltage (in V) of a bipolar transistor at specified collector current, base current and junction temperature.

NOTE

This is the voltage between collector and emitter terminals when both the base-emitter and base-collector junctions are forward biased.

AAE271-005 = junction temperature

AAE406-005 = collector current (dc)

AAE409-005 = base current (dc)

IEC 60748

**AAE417-005 01 NR2 S..3.3 E06**  
level max real measure  
V

**collector-base voltage  $V_{CBO}$   $V_{CBO}$**   
 $V_{CBO}$

The maximum voltage (in V) between collector and base terminals of a bipolar transistor at open emitter terminal.

IEC 60748

**AAE418-005 02 NR3..3.3ES2 E06**  
level max real measure  
V

**difference base-emitter voltage  $|V_{1BE} - V_{2BE}|$**

$|V_{1BE} - V_{2BE}|$

The absolute value of the maximum difference (in V) of the base-emitter voltages of a dual bipolar transistor at specified sum of emitter currents and equal collector-base voltage and at equal collector currents.

AAE408-005 = emitter current (dc)

AAE419-005 = collector-base voltage



**AAE419-005 01** **NR2 S..3.3** **E06**  
simple real measure  
V

**collector-base voltage** **@V\_CB**  
**@V<sub>CB</sub>**

The direct voltage (in V) between the collector and base terminals of a bipolar transistor, as a variable.

JESD 77B (2000)

**AAE420-005 01** **NR3..3.3ES2** **E09**  
level minMax real measure  
F

**collector capacitance** **C\_c**  
**C<sub>c</sub>**

The value as specified by level (minMax) of the capacitance (in F) between collector and emitter terminals of a bipolar transistor at specified emitter current, collector-base voltage and frequency.

AAE029-005 = frequency

AAE408-005 = emitter current (dc)

AAE419-005 = collector-base voltage

**AAE421-005 01** **NR3..3.3ES2** **E09**  
level minTypMax real measure  
F

**feedback capacitance** **C\_re**  
transfer capacitance **C<sub>re</sub>**

The value as specified by level (minTypMax) of the capacitance (in F) measured between collector and base terminals of a bipolar transistor in common-emitter configuration, at specified collector current, collector-emitter voltage, and frequency.

AAE029-005 = frequency

AAE406-005 = collector current (dc)

AAE412-005 = collector-emitter voltage

JESD 77B (2000)

**AAE422-005 02** **NR2..3.3** **E49**  
level nom real measure  
W

**output power** **P\_L**  
load power **P<sub>L</sub>**

The nominal rf output power (in W) of a bipolar transistor at specified collector-emitter voltage, frequency and heatsink temperature.

AAE029-005 = frequency

AAE400-005 = heatsink temperature

AAE412-005 = collector-emitter voltage

IEC 60050-713 (1998)

**AAE424-005 02** **NR2..3.3** **E49**  
level minTypMax real measure  
dB

**power gain** **G\_p**  
**G<sub>p</sub>**

The value as specified by level (minTypMax) of the ratio (in dB) of the output power to the input power of a bipolar transistor or wideband amplifier at specified supply voltage, frequency, output power and temperature of a temperature type.

AAE029-005 = frequency

AAE102-005 = supply voltage

AAE683-005 = temperature type

AAE685-005 = temperature

AAE955-005 = output power

**AAE425-005 02** **NR3..3.3ES2** **F03**  
level minTypMax real measure  
Hz

**transition frequency** **f\_T**  
**f<sub>T</sub>**

The value as specified by level (minTypMax) of the frequency (in Hz) at which the small-signal current gain has decreased to unity when the output is short-circuited at specified collector current and collector-emitter voltage.

AAE406-005 = collector current (dc)

AAE412-005 = collector-emitter voltage

IEC 60748

**AAE426-005 02 NR3..3.3ES2 F03**  
level minTypMax real measure  
Hz

**cut-off frequency  $f_{hfe}$**   
frequency at  $h_{fe}$  is -3dB  $f_{hfe}$

The value as specified by level (minTypMax) of the frequency (in Hz) of a bipolar transistor at which the small-signal current gain is 3 dB below its value at low frequencies at specified collector current and collector-emitter voltage.

AAE406-005 = collector current (dc)

AAE412-005 = collector-emitter voltage

IEC 60748

**AAE427-005 01 NR2 S..3.3 E06**  
simple real measure  
V

**base-emitter voltage  $@V_{BE}$**   
 $@V_{BE}$

The direct voltage (in V) between the base and emitter terminals of a bipolar transistor, as a variable.

JESD 77B (2000)

**AAE429-005 01 NR3..3.3ES2 E09**  
level nom real measure  
F

**varistor capacitance  $C_{var}$**   
 $C_{var}$

The nominal capacitance (in F) of a varistor at specified frequency.

AAE029-005 = frequency

**AAE430-005 01 NR2..3.3 H06**  
level max real measure  
J

**energy absorbing capacity max  $E_{abs}$**   
 $E_{abs}$

The maximum limiting energy content (in J), of a pulse current with specified virtual front time and virtual time to half-value, that can be absorbed by a varistor.

AAE125-005 = current (pulse)

AAE332-005 = virtual front time

AAE333-005 = virtual time to half-value

**AAE442-005 01 M..8 A56**  
simple non-quantitative code

**colour TV transmission colour TV trans**

Code of the type of colour television transmission applying to a delay line or IC.

MULTI = multi-standard system  
NTSC = National Television System Committee  
PAL = Phase Alternating Line  
SECAM = Sequential Colour And Memory

**AAE457-005 01 M..3 A56**  
simple non-quantitative code

**numeral system numeral system**

Code of the numeral system of a digital signal function of an IC.

BIN = binary  
DEC = decimal  
HEX = hexadecimal  
OCT = octal

ISO/IEC 2382-5 (1999)

**AAE458-005 02 NR1..4 Q62**  
level nom integer measure  
1

**number of inputs  $N_{in}$**   
 $N_{in}$

Number of inputs of a function of an IC.

**AAE459-005 01 NR1..4 J01**  
level nom integer measure  
bit

**word size  $N_{bit}$**   
word length  
 $N_{bit}$   
number of bits

The number of bits per word applying to a digital function of an IC.

ISO 2382-4 (1999)

**AAE464-005 01** **M..3** **A56**  
simple non-quantitative code

**mode of control control mode**

Code of the mode of control of a function of an IC.

E = edge-triggered  
L = level-triggered  
R = reset  
S = set

**AAE474-005 02** **NR3..3.ES2** **J01**  
level nom real measure  
1

**storage size storage size**  
storage capacity storage size  
number of words

The number of words specifying the data storage capacity of a digital memory function on an IC.

ISO 2382-12 (1988)

**REMARKS:**

The data storage capacity of a digital memory IC is sometimes referred to as -memory organisation- and (number of words) x (number of bits per word)  
Examples: 256x1 : 256x4 : 1024x8 etc.

**AAE487-005 02** **M..3** **A56**  
simple non-quantitative code

**frequency band frequency band**

IEC standard abbreviation of the name of the frequency band for the application of an electric-electronic component.

|     |                          | 3 kHz | - | 300 GHz  |
|-----|--------------------------|-------|---|----------|
| RF  | radio frequency          | 3     | - | 300 GHz  |
| VLF | very low frequency       | 3     | - | 30 kHz   |
| LF  | low frequency            | 30    | - | 300 kHz  |
| MF  | medium frequency         | 300   | - | 3000kHz  |
| HF  | high frequency           | 3     | - | 30 MHz   |
| VHF | very high frequency      | 30    | - | 300 MHz  |
| UHF | ultra high frequency     | 300   | - | 3000 MHz |
| SHF | super high frequency     | 3     | - | 30 GHz   |
| EHF | extremely high frequency | 30    | - | 300 GHz  |
| BB  | baseband:                |       |   |          |
| AF  | audio frequency approx   | 0     | - | 20 kHz   |
| VF  | video frequency approx.  | 0     | - | 20 MHz   |
| PB  | passband                 |       |   |          |
| IF  | intermediate frequency   |       |   |          |

**AAE488-005 01** **M..3** **A56**  
simple non-quantitative code

**diode configuration diode config**

Code of the mode of configuration of a breakover diode, rectifier diode, signal diode or variable capacitance diode.

CAn = n-diodes common anode  
CCn = n-diodes common cathode  
SCn = n-diodes series connected  
SEn = n-diodes separated  
SIN = single diode

**REMARKS:**

n is marked for the values 2 up to and including 9.

**AAE489-005 01** **M..3** **A55**  
simple non-quantitative code

**diode technology diode techn**

Code of the type of technology of a diode.

AVA = avalanche diode  
PIN = pin diode  
SCH = Schottky diode  
TUN = tunnel diode

**AAE490-005 03** **M..8** **A56**  
simple non-quantitative code

**modulation method modulation**

IEC standard abbreviation of the type of modulation for the application of an electric-electronic component.

AM = amplitude modulation  
ASK = amplitude shift keying  
DM = \*delta modulation  
DSB = \*double sideband  
DSBSC = \*double sideband suppressed carrier  
FM = frequency modulation  
FSK = frequency shift keying  
ISB = \*independent sideband  
MPSK = \*multiple phase shift keying  
n-FSK = \*n-condition frequency shift keying  
PAM = pulse amplitude modulation  
PCM = pulse code modulation  
PDCM = \*differential pulse code modulation  
PDM = \*pulse duration modulation  
PDSK = \*differential phase shift keying  
PFM = \*pulse frequency modulation  
PM = phase modulation  
PPM = \*pulse position modulation  
PSK = phase shift keying  
PTM = pulse time modulation  
QAM = \*quadrature amplitude modulation  
QPSK = \*quadrature phase shift keying  
SSB = \*single sideband  
VSB = \*vestigial sideband

**AAE494-005** 02 M..35 A56  
simple string

**nearest conventional type near conv type**

Type number of the nearest conventional type, with comparable electrical specification, as the surface-mounted diode or transistor under consideration.

**AAE496-005** 01 NR3..3.3ES2 E09  
level minTypMax F real measure

**diode capacitance** C<sub>d</sub>  
C<sub>d</sub>

The value as specified by level (minTypMax) of the capacitance (in F) between the terminals of a diode or optoelectronic device at specified reverse voltage and frequency.

AAE029-005 = frequency

AAE335-005 = reverse voltage

IEC 60747-3 (1985)

**AAE497-005** 01 NR3..3.3ES2 E09  
simple real measure F

**diode capacitance** @C<sub>d</sub>  
@C<sub>d</sub>

The capacitance (in F) of a variable capacitance diode, as a variable.

**NOTE**

The specified diode capacitance has to be adjusted with the reverse voltage

IEC 60747-3 (1985)

**AAE499-005** 01 NR2..3.3 E06  
simple real measure V

**forward voltage** @V<sub>F</sub>  
on-state voltage @V<sub>F</sub>

The forward voltage (in V) across a diode or optoelectronic device, as a variable.

IEC 60747-2 (2000)

**AAE500-005** 01 NR3..3.3ES2 E01  
simple real measure A

**working current** @I<sub>Z</sub>  
@I<sub>Z</sub>

The direct working current (in A) applied continuously to a voltage reference diode or voltage regulator diode, as a variable.

**AAE502-005** 02 NR2..3.3 E09  
level minTypMax 1 real measure

**capacitance ratio** C<sub>d1</sub>/C<sub>d2</sub>  
C<sub>d1</sub>/C<sub>d2</sub>

The value as specified by level (minTypMax) of the capacitance ratio of a tuning variable capacitance diode, within a reverse voltage range, specified by the reverse voltages (V<sub>1</sub> and V<sub>2</sub>), and at specified frequency.

AAE029-005 = frequency

AAE961-005 = voltage V<sub>1</sub>

AAE962-005 = voltage V<sub>2</sub>

C<sub>d1</sub> at (V<sub>R</sub> = V<sub>1</sub>)

C<sub>d2</sub> at (V<sub>R</sub> = V<sub>2</sub>)

**AAE503-005** 01 M..3 A56  
simple non-quantitative code

**EHT stack application EHT stack appl**

Number of phases of the application mode of an EHT rectifier diode stack.

1 = single-phase

2 = two-phase

3 = three-phase

**AAE505-005** 01 M..3 A56  
simple non-quantitative code

**rectifier diode application rec dio appl**

Code of the application of a rectifier diode.

EFF = efficiency diode

EHT = extra-high tension rectifier diode

**AAE506-005 01** **M..8** **A56**  
simple non-quantitative code

**switching function** **switch function**

Code of the switching function of the contact assembly of a relay or switch.

**NOTE**

Not all values apply to switches.

B = B break (on-off)  
BB = G break-break  
BBM = H break-break-make  
BM = C break-make (change-over)  
BMB = E break-make-break  
BMM = L break-make-make  
BNB = M two-way break normally closed  
DB = Y double break  
DBDM = Z double break double make  
DBDM-T = W DB double make (terminal on armature)  
DB-T = V double break (terminal on armature)  
DM = X double make  
DM-T = U double make (terminal on armature)  
M = A make (off-on)  
MB = D make-break  
MBM = I make-break-make  
MM = F make-make  
MMB = J make-make-break  
MNM = K two-way make normally open

**AAE508-005 01** **M..3** **A56**  
simple non-quantitative code

**sealing** **sealing**

IEC standard code of the sealing of a relay.

RT0 = non-sealed contacts  
RTI = sealed contacts  
RTII = sealed relays

**AAE509-005 03** **M..3** **A56**  
simple non-quantitative code

**U/I category** **U/I category**

IEC standard code of the category of contact voltage and contact current of a relay.

**NOTE**

A contact may have the characteristics of more than one category.

0 = category 0 contacts (0-30 mV; 0-10 mA)  
1 = category 1 contacts (30 mV-60 V; 10 -100 mA)  
2 = category 2 contacts (60-250 V; 100 mA-1 A)  
3 = category 3 contacts (250-600 V; 1 -100 A)

**AAE510-005 02** **X..3** **A56**  
simple non-quantitative code

**chargeability type** **chargeability**

Code of the chargeability type of a battery.

PR1 = primary battery (single charge)  
SEC = secondary battery (rechargeable)

**AAE511-007 02** **X..8** **A56**  
simple non-quantitative code

**impedance type** **impedance type**

Code of the impedance type of an antenna.

CAP = capacitive (whip)  
IND = inductive (ferroceptor)  
RES = resistive (tuned dipole)

**AAE512-005 02** **NR3..3.3ES2** **E06**  
level max real measure V

**contact voltage (ac)** **U<sub>cont(ac)</sub>**  
rated operational voltage (ac) U<sub>cont(ac)</sub>

The maximum operating rms switching voltage (in V) of a switch or relay at resistive load.

**NOTE**

The rated voltage is the voltage between the contact members before closing or after opening.

IEC 60127-1 (1988)

**AAE513-005 02 NR3..3.3ES2 E06**  
level max real measure  
V

**limiting contact voltage  $U_{\text{cont(lim)}}$**   
insulation voltage  $U_{\text{cont(lim)}}$

The maximum dc voltage (in V) of a switch or relay across open contacts.

IEC 60947-1 (2004)

**AAE515-005 03 NR1..4 E01**  
level max integer measure  
A

**contact current (ac)  $I_{\text{cont(ac)}}$**   
 $I_{\text{cont(ac)}}$

The maximum rms switching current (in A) of a switch or relay at resistive load.

IEC 60947-1 (2004)

**AAE517-005 01 NR3..3.3ES2 E22**  
level miNoMax real measure  
H

**inductance L**  
L

The value as specified by level (miNoMax) of the inductance (in H) of an inductive antenna, inductor, motor or transformer at specified frequency.

AAE029-005 = frequency

REMARKS:  
For antennas,  $f = 10 \text{ kHz}$ .

**AAE518-005 03 NR3..3.3ES2 E46**  
level miNoMax real measure  
1

**quality factor Q**  
Q

The value as specified by level (miNoMax) of the quality factor of an inductive antenna or inductor at specified frequency.

AAE029-005 = frequency

**AAE519-005 01 NR3 S..3.3ES2 E06**  
level nom real measure  
V

**nominal voltage V**  
V

The nominal voltage (in V) of a lamp or fuse.

REMARKS:

IEC 60432-1 (1999) :

If, for special reasons, lamps are marked with dual voltage, the rated voltage shall be taken as the mean of the voltage range.

**AAE521-005 03 NR3..3.3ES2 E01**  
level nom real measure  
A

**nominal current  $I_{\text{nom}}$**   
 $I_{\text{nom}}$

The nominal current (in A) of a lamp at specified frequency and at the nominal voltage.

AAE029-005 = frequency  
IEC 60598-1 (2003)

**AAE522-005 02 M..3 A58**  
simple non-quantitative code

**mounting-cap code cap**

Code of the mounting cap of a lamp.

BAY = bayonet  
LEA = leads  
PIN = pin  
SCR = screw

**AAE523-005 01 NR3..3.3ES2 H06**  
level nom real measure  
J

**Joule-integral  $(I^2)^t$**   
 $I^2 t$

The nominal value of the integral of the square of the current over the operating time interval (in J) of a fuse.

NOTES

1 The operating time is the sum of the pre-arcing time and the arcing time.

2 When considered from point of view of the circuit protected by a fuse, the value of the Joule-integral over the operating time of the fuse is referred to a specific energy, i.e. the energy released as heat in  $1 \Omega$  of circuit resistance.

IEC 60050-441, amendment 1 (2000)



|                   |           |                       |            |                   |               |                 |            |
|-------------------|-----------|-----------------------|------------|-------------------|---------------|-----------------|------------|
| <b>AAE524-005</b> | <b>02</b> | <b>M..3</b>           | <b>A56</b> | <b>AAE529-005</b> | <b>03</b>     | <b>NR2..3.3</b> | <b>E06</b> |
|                   | simple    | non-quantitative code |            |                   | level miNoMax | real measure    |            |
|                   |           |                       |            |                   | V             |                 |            |

**speed**

**speed**

IEC standard code denoting the relative pre-arcing time/current characteristic of a fuse.

F = quick acting  
FF = very quick acting  
M = medium  
T = time-lag  
TT = long time-lag

IEC 60127-1 (1988)

**open-circuit voltage** **V<sub>open</sub>**  
V<sub>open</sub>

The value as specified by level (miNoMax) of the open-circuit voltage (in V) of a battery.

|                   |           |                 |            |
|-------------------|-----------|-----------------|------------|
| <b>AAE530-005</b> | <b>02</b> | <b>NR2..3.3</b> | <b>E02</b> |
|                   | level nom | real measure    |            |
|                   |           | Ah              |            |

**nominal capacity** **Ah**  
Ah

The nominal capacity (in Ah) of a battery.

|                   |           |                    |            |
|-------------------|-----------|--------------------|------------|
| <b>AAE525-005</b> | <b>02</b> | <b>NR3..3.3ES2</b> | <b>E01</b> |
|                   | level max | real measure       |            |
|                   |           | A                  |            |

**rated current** **I<sub>n</sub>**  
I<sub>n</sub>

The maximum continuous dc or ac rms current (in A) of a fuse at specified ambient temperature.

AAE014-005 = ambient temperature

IEC 62271-100 (2001)

|                   |               |                    |            |
|-------------------|---------------|--------------------|------------|
| <b>AAE527-005</b> | <b>01</b>     | <b>NR3..3.3ES2</b> | <b>F03</b> |
|                   | level miNoMax | real measure       |            |
|                   |               | Hz                 |            |

**centre frequency** **f<sub>c</sub>**  
f<sub>c</sub>

The value as specified by level (miNoMax) of the centre frequency (in Hz) of a band pass or band stop filter.

|                   |           |                   |            |
|-------------------|-----------|-------------------|------------|
| <b>AAE528-005</b> | <b>02</b> | <b>NR2 S..3.3</b> | <b>F09</b> |
|                   | simple    | real measure      |            |
|                   |           | dB                |            |

**response level** **@L<sub>resp</sub>**  
@L<sub>resp</sub>

The value (in dB) representing the variation of the level on a point of the response curve of a quantity of a filter or delay line compared with its maximum level, as a variable.

IEC 60050(806) (1996) derived

**AAE531-005 01** **M..3** **A55**  
simple non-quantitative code

**primary electrochemical system** **pri elchem sys**

IEC standard code of the electrochemical system of a primary battery.

A = oxygen – zinc -ammonium/zinc chloride  
B = carbon monofluoride -lithium-ammonium/zinc chlor.  
C = manganese dioxide – lithium-organic electrolyte  
L = manganese dioxide – zinc -alkali metal hydroxide  
M = mercuric oxide – zinc -alkali metal hydroxide  
N = mercuric oxide + MnO<sub>2</sub>- zinc -alkali metal hydroxide  
P = oxygen – zinc -alkali metal hydroxide  
S = silver oxide – zinc -alkali metal hydroxide  
T = silver oxide divalent- zinc -alkali metal hydroxide  
X = manganese dioxide – zinc -ammonium/zinc chloride

IEC 60086-1 (2000)

**REMARKS:**

| Code | anode                             | cathode | electrolyte            |
|------|-----------------------------------|---------|------------------------|
| X    | manganese dioxide                 | zinc    | ammonium/zinc chloride |
| A    | oxygen                            | zinc    | ammonium/zinc chloride |
| B    | carbon monofluoride               | lithium | ammonium/zinc chloride |
| C    | manganese dioxide                 | lithium | organic electrolyte    |
| L    | manganese dioxide                 | zinc    | alkali metal hydroxide |
| M    | mercuric oxide                    | zinc    | alkali metal hydroxide |
| N    | mercuric oxide + MnO <sub>2</sub> | zinc    | alkali metal hydroxide |
| P    | oxygen                            | zinc    | alkali metal hydroxide |
| S    | silver oxide                      | zinc    | alkali metal hydroxide |
| T    | silver oxide divalent             | zinc    | alkali metal hydroxide |

**AAE532-005 02** **M..8** **A55**  
simple non-quantitative code

**secondary electrochemical system** **sec elchem sys**

Code of the electrochemical system of a secondary battery.

AgCd = silver -cadmium -alkaline  
AgZn = silver -zinc -alkaline  
NiCd = nickel -cadmium -alkaline  
NiFe = nickel -iron -alkaline  
NiZn = nickel -zinc -alkaline  
Pb = lead -acid -sulphuric acid

**REMARKS:**

| Code | anode  | cathode | electrolyte    |
|------|--------|---------|----------------|
| NiCd | nickel | cadmium | alkaline       |
| AgZn | silver | zinc    | alkaline       |
| Pb   | lead   | acid    | sulphuric acid |
| NiFe | nickel | iron    | alkaline       |
| AgCd | silver | cadmium | alkaline       |
| NiZn | nickel | zinc    | alkaline       |

**AAE533-005 02** **NR3..3.3ES2** **E44**  
level nom real measure  $\Omega$

**input impedance**

$|Z_{in}|$   
 $|Z_{in}|$

The nominal value of the modulus of the input impedance (in ohms) of a filter or microphone at specified frequency.

AAE029-005 = frequency

IEC 60050(131) (2002)

**AAE534-005 01** **NR3..3.3ES2** **F03**  
level minMax real measure  
Hz

**bandwidth**

**B**  
B

The value as specified by level (minMax) of the bandwidth (in Hz) of a filter or delay line at specified response level.

AAE528-005 = response level

IEC 60050(702) (1992)

**AAE540-005 01** **NR3..3.3ES2** **E01**  
level max real measure  
A

**current rms** **I<sub>rms</sub>**  
I<sub>rms</sub>

The maximum rms current (in A) of an electric-electronic or electromechanical component at specified ambient temperature.

AAE014-005 = ambient temperature

**AAE541-005 01** **NR3..3.3ES2** **F03**  
level nom real measure  
Hz

**frequency** **f**  
f

The nominal frequency (in Hz) of a delay line.

**AAE542-005 01** **M..3** **A56**  
simple non-quantitative code

**delay line application** **del appl**

Code of the recommended application of a delay line.

CTV = colour television

VCR = video cassette recorder

VLP = video long play

**AAE543-005 02** **NR3..3.3ES2** **T07**  
level minMax real measure  
s

**delay time** **\$t<sub>T</sub>**  
T

The value as specified by level (minMax) of the delay time (in s) of a filter or delay line at specified frequency.

AAE029-005 = frequency

IEC 60050(351) (1998)

**AAE544-005 02** **NR3..3.3ES2** **T07**  
level nom real measure  
s

**phase delay time** **t<sub>del</sub>**  
t<sub>del</sub>

The nominal phase delay time (in s) of a delay line.

IEC 60050(55) (1970)

NOTE

The phase delay time is the ratio of the total phase delay through the network, in cycles, to the frequency in Hz.

**AAE545-006 02** **X..8** **A56**  
simple non-quantitative code

**optoelectronic device function** **opt function**

Code of the function to which an optoelectronic device belongs.

IMAGE = Image pickup devices

PHC = photocoupler

PHE = photoemitter

PHS = photosensor

IEC 60747-5 (1992)

**AAE546-005 03** **NR3..3.3ES2** **E01**  
level max real measure  
A

**forward current limit** **I<sub>Flim</sub>**  
I<sub>Flim</sub>

The maximum limiting direct current (in A) flowing through a diode, or diode part of an optoelectronic device, in the forward direction.

IEC 60747-2 (2000)

**AAE547-005 01** **NR2 S..3.3** **E06**  
simple real measure  
V

**supply voltage** **@V<sub>B</sub>**  
@V<sub>B</sub>  
@V<sub>DD</sub>  
@V<sub>CC</sub>

The dc supply voltage (in V) applied to an optoelectronic device via an external circuit, as a variable.

**AAE548-005 02 NR2..3.3 E01**  
level minTypMax real measure  
1

**current transfer ratio CTR**  
CTR  
 $I_C/I_F$

The value as specified by level (minTypMax) of the dc transfer ratio of the collector current and the diode forward current in a photocoupler at specified diode forward current, collector-emitter voltage and junction temperature.

AAE271-005 = junction temperature  
AAE274-005 = forward current  
AAE412-005 = collector-emitter voltage

JESD 77B (2000)

**AAE553-005 03 NR3..3.3ES2 T07**  
level nom real measure  
s

**turn-off time  $t_{off}$**   
 $t_{off}$

The nominal time (in s) elapsing between the end of the input pulse (90 % of its maximum value) and the moment when the corresponding output signal of a photocoupler falls to 10 % of its maximum value, at specified forward current, collector current, supply voltage, load resistance and junction temperature.

AAE212-005 = load resistance  
AAE271-005 = junction temperature  
AAE274-005 = forward current  
AAE406-005 = collector current (dc)  
AAE547-005 = supply voltage

**AAE550-005 02 NR3..3.3ES2 E06**  
level min real measure  
V

**isolation voltage min  $V_{IORM}$**   
 $V_{IORM}$

The minimum guaranteed dc test voltage (in V) across the shorted diode leads and the shorted transistor leads that a photocoupler must withstand for a specified duration.

AAE028-005 = duration

IEC 60747-5 (1992)

**AAE554-005 02 NR3..3.3ES2 T07**  
level nom real measure  
s

**turn-on time  $t_{on}$**   
 $t_{on}$

The nominal time (in s) elapsing between the start of the input pulse (10 % of its maximum value) and the moment when the corresponding output signal of a photocoupler is at least 90 % of its maximum value, at specified forward current, collector current, supply voltage load resistance and junction temperature.

AAE212-005 = load resistance  
AAE271-005 = junction temperature  
AAE274-005 = forward current  
AAE406-005 = collector current (dc)  
AAE547-005 = supply voltage

**AAE551-005 02 NR3 S..3.3ES2 E06**  
level max real measure  
V

**collector-emitter sat voltage  $V_{CEsat}$**   
 $V_{CEsat}$

The maximum guaranteed collector-emitter saturation voltage (in V) of a photocoupler at specified forward current, collector current and junction temperature.

AAE271-005 = junction temperature  
AAE274-005 = forward current  
AAE406-005 = collector current (dc)

**AAE555-005 01 X..3 A56**  
simple non-quantitative code

**photoemitter function PHE function**

Code of the function type to which a photoemitter belongs.

IRD = infrared emitting diode  
LAS = laser  
LED = LED

IEC 60747-5 (1992)

**AAE556-005 02 NR3..3.3ES2 L03**  
level nom real measure  
m

**wavelength at peak emission \$I<sub>peak</sub>**  
peak-emission wavelength  $\lambda_{peak}$

The nominal wavelength (in m) at which the spectral radiant intensity is maximum at a specified diode forward current and ambient temperature.

AAE014-005 = ambient temperature

AAE274-005 = forward current

IEC 60747-5 (1992)

**AAE557-005 02 NR3..3.3ES2 L03**  
level nom real measure  
m

**spectral bandwidth \$D\$I**  
 $\Delta\lambda$

The nominal wavelength interval (in m) at which the responsivity of a photosensor or intensity of a photo-emitter is not less than half of its maximum value at specified ambient temperature.

AAE014-005 = ambient temperature

REMARKS:

Intensity applies to photoemitters; responsivity, to photosensitive devices.

**AAE558-005 01 NR1..4 T01**  
level nom integer measure  
deg

**beamwidth between 50 % values \$q<sub>1/2</sub>**  
half-value beam angle  $\theta_{1/2}$   
 $\alpha_{50\%}$

The nominal angle of the beamwidth (in deg) between the half value directions of the intensity of a photo-emitter or responsivity of a photosensor.

JESD 77B (2000)

REMARKS:

Intensity applies to photoemitters; responsivity, to photosensors.

**AAE560-005 02 M..35 A91**  
simple non-quantitative code

**package colour**  
envelope colour

**package colour**

Name of the colour of a LED or IRED package.

blue-diff = blue-diffused  
colourless = colourless-clear  
green-clear = green-clear  
green-diff = green-diffused  
red-clear = red-clear  
red-diff = red-diffused  
yellow-clear = yellow-clear  
yellow-diff = yellow-diffused

REMARKS:

For the materials used and the resulting colours in the emitting condition, see AAE563-005 and AAE564-005.

**AAE561-005 02 NR3..3.3ES2 L10**  
level nom real measure  
W

**radiant output power \$f<sub>e</sub>**  
radiant flux  $\Phi_e$   
 $P_{out}$

The nominal radiant output power (in W) of a laser photoemitter at specified wavelength and case temperature.

AAE260-005 = case temperature

AAE569-005 = wavelength at peak value

IEC 60306-1 (1969)

**AAE562-005 01 M..17 A56**  
simple string

**luminous intensity class I<sub>v</sub>(cl)**  
 $I_{v(cl)}$

Code of a luminous-intensity class of a LED.

|                                                                 |                                       |            |                                                                                                                                                                  |                                                                                                                 |            |
|-----------------------------------------------------------------|---------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------|
| <b>AAE563-005 01</b><br>simple                                  | <b>M..17</b><br>non-quantitative code | <b>A57</b> | <b>AAE566-005 03</b><br>simple                                                                                                                                   | <b>X..3</b><br>non-quantitative code                                                                            | <b>A56</b> |
| <b>LED crystal material</b>                                     | <b>LED xtal mat</b>                   |            | <b>radiation type</b>                                                                                                                                            | <b>radiation type</b>                                                                                           |            |
| The abbreviated name of the crystal material of a photoemitter. |                                       |            | Code of the type of optical radiation to which a photosensor responds.                                                                                           |                                                                                                                 |            |
| GaAlAs                                                          | = GaAlAs                              |            | IR                                                                                                                                                               | = infrared radiation                                                                                            |            |
| GaAs                                                            | = GaAs                                |            | UV                                                                                                                                                               | = ultraviolet radiation                                                                                         |            |
| GaAsP                                                           | = GaAsP                               |            | VIS                                                                                                                                                              | = visible radiation                                                                                             |            |
| GaAsP/GaP                                                       | = GaAsP/GaP                           |            | IEC 60050(845) (1987)                                                                                                                                            |                                                                                                                 |            |
| GaP                                                             | = GaP                                 |            |                                                                                                                                                                  |                                                                                                                 |            |
| GaP(ZnO)                                                        | = GaP(ZnO)                            |            |                                                                                                                                                                  |                                                                                                                 |            |
| GaPAs                                                           | = GaPAs                               |            |                                                                                                                                                                  |                                                                                                                 |            |
| REMARKS:<br>For the resulting colours, see AAE564-005.          |                                       |            | <b>AAE567-005 01</b><br>level min                                                                                                                                | <b>NR3..3.3ES2</b><br>real measure<br>A/W                                                                       | <b>E01</b> |
| <b>AAE564-005 01</b><br>simple                                  | <b>M..17</b><br>non-quantitative code | <b>A91</b> | <b>spectral sensitivity</b>                                                                                                                                      | <b>s_ \$I</b><br>\$I<br>S <sub>R</sub>                                                                          |            |
| <b>LED light colour</b><br>light colour                         | <b>light colour</b>                   |            | The minimum ratio of the photocurrent to the incident radiant power (in A/W), of a photosensor at specified wavelength, reverse voltage and ambient temperature. |                                                                                                                 |            |
| Code of the colour of the light emitted by a LED or IRED.       |                                       |            | AAE014-005 = ambient temperature<br>AAE335-005 = reverse voltage<br>AAE569-005 = wavelength at peak value                                                        |                                                                                                                 |            |
| green                                                           | = green                               |            | <b>AAE568-005 02</b><br>level nom                                                                                                                                | <b>NR3..3.3ES2</b><br>real measure<br>m                                                                         | <b>L03</b> |
| hyper-red                                                       | = hyper-red                           |            | <b>wavelength at peak response</b> <b>\$I_peak</b><br>peak-response wavelength $\lambda_{peak}$                                                                  |                                                                                                                 |            |
| infrared                                                        | = infrared                            |            | The nominal wavelength (in m) at which the spectral luminous sensitivity of a photosensor is maximum at specified reverse voltage and ambient temperature.       |                                                                                                                 |            |
| orange                                                          | = orange                              |            | AAE014-005 = ambient temperature<br>AAE335-005 = reverse voltage                                                                                                 |                                                                                                                 |            |
| standard-red                                                    | = standard-red                        |            | <b>AAE565-005 02</b><br>level min                                                                                                                                | <b>NR3..3.3ES2</b><br>real measure<br>cd                                                                        | <b>L29</b> |
| super-red                                                       | = super-red                           |            | <b>luminous intensity</b>                                                                                                                                        | <b>I_v</b><br>I <sub>v</sub>                                                                                    |            |
| ultra-red                                                       | = ultra-red                           |            | The minimum luminous intensity of a LED (in cd) at a specified forward current and ambient temperature.                                                          |                                                                                                                 |            |
| yellow                                                          | = yellow                              |            | AAE014-005 = ambient temperature<br>AAE274-005 = forward current                                                                                                 |                                                                                                                 |            |
| REMARKS:<br>For the relevant emitting material, see AAE563-005. |                                       |            | <b>AAE569-005 02</b><br>simple                                                                                                                                   | <b>NR3..3.3ES2</b><br>real measure<br>m                                                                         | <b>L03</b> |
| IEC 60306-1 (1969)                                              |                                       |            | <b>wavelength at peak value</b> <b>@\$I_p</b><br>peak-wavelength $@\lambda_p$                                                                                    | The wavelength (in m) of the intensity of a laser photoemitter or responsivity of a photosensor, as a variable. |            |



|                                                                                                                                                                                                                                                                                                                                 |                                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|
| <b>AAE570-005 02</b><br>simple                                                                                                                                                                                                                                                                                                  | <b>NR3..3.3ES2</b><br>real measure<br>$W/m^2$          | <b>L16</b> | <b>AAE573-005 01</b><br>level typ                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>NR3..3.3ES2</b><br>real measure<br>m | <b>L03</b> |
| <b>irradiance</b><br>irradiance E                                                                                                                                                                                                                                                                                               | <b>@E_e</b><br>@E_e                                    |            | <b>spectral response lower limit \$I_{min}</b><br>$\lambda_{min}$ :                                                                                                                                                                                                                                                                                                                                                                                               |                                         |            |
| Irradiance applied to a photosensor (in $W/m^2$ ), as a variable.<br><br>ISO 31-6 (1992)                                                                                                                                                                                                                                        |                                                        |            | The typical lower limit of the wavelength (in m) above which an infrared radiation photosensor gives a response of at least 90 % of the maximum output, at a specified supply voltage and ambient temperature.                                                                                                                                                                                                                                                    |                                         |            |
| <b>AAE571-005 01</b><br>level nom                                                                                                                                                                                                                                                                                               | <b>NR3..3.3ES2</b><br>real measure<br>V/W              | <b>E06</b> | AAE014-005 = ambient temperature<br>AAE547-005 = supply voltage<br><br>REMARKS:<br>For the lower spectral response, i.e. for the total range, see also AAE574-005.                                                                                                                                                                                                                                                                                                |                                         |            |
| <b>responsivity</b><br>voltage responsivity                                                                                                                                                                                                                                                                                     | <b>responsivity</b><br>responsivity                    |            | <b>AAE574-005 01</b><br>level typ                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>NR3..3.3ES2</b><br>real measure<br>m | <b>L03</b> |
| The nominal ratio of the rms signal to the value of the incident, chopped, radiant power (in V/W) of an infrared radiation photosensor at specified wavelength, chopping frequency and ambient temperature.<br><br>AAE014-005 = ambient temperature<br>AAE569-005 = wavelength at peak value<br>AAE935-005 = chopping frequency |                                                        |            | <b>spectral response upper limit \$I_{max}</b><br>$\lambda_{max}$<br><br>The typical upper limit of the wavelength (in m) below which an infrared radiation photosensor gives a response of at least 90 % of the maximum output, at a specified supply voltage and ambient temperature.<br><br>AAE014-005 = ambient temperature<br>AAE547-005 = supply voltage<br><br>REMARKS:<br>For the lower spectral response, i.e. for the total range, see also AAE573-005. |                                         |            |
| <b>AAE572-005 02</b><br>level nom                                                                                                                                                                                                                                                                                               | <b>NR3 S..3.3ES2</b><br>real measure<br>$W/(Hz^{1/2})$ | <b>L10</b> | <b>AAE575-005 02</b><br>level nom                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>NR3..3.3ES2</b><br>real measure<br>m | <b>T03</b> |
| <b>equivalent noise irradiation</b><br>noise equivalent power                                                                                                                                                                                                                                                                   | <b>NEP</b><br>NEP                                      |            | <b>element separation</b><br>element gap                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>s_gap</b><br>$s_{gap}$               |            |
| The nominal equivalent noise power (NEP) of an infrared radiation photosensor (in $W/(Hz^{1/2})$ ), at specified wavelength, chopping frequency and bandwidth.<br><br>AAE569-005 = wavelength at peak value<br>AAE934-005 = bandwidth<br>AAE935-005 = chopping frequency<br><br>IEC 60050(531) (1974)                           |                                                        |            | The nominal distance (in m) between the sensitive elements of an infrared radiation photosensor.                                                                                                                                                                                                                                                                                                                                                                  |                                         |            |
|                                                                                                                                                                                                                                                                                                                                 |                                                        |            | <b>AAE576-005 01</b><br>level nom                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>NR3..3.3ES2</b><br>real measure<br>m | <b>T03</b> |
|                                                                                                                                                                                                                                                                                                                                 |                                                        |            | <b>element length</b>                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>l_elem</b><br>$l_{elem}$             |            |
|                                                                                                                                                                                                                                                                                                                                 |                                                        |            | The nominal length (in m) of the sensitive element(s) of an infrared radiation photosensor.                                                                                                                                                                                                                                                                                                                                                                       |                                         |            |

**AAE577-005 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**element breadth** **b\_elem**  
b<sub>elem</sub>

The nominal breadth (in m) of the sensitive element(s) of an infrared radiation photosensor.

**AAE578-005 01 NR2 S..3.3 E06**  
level minMax real measure  
V

**grid 1 voltage for cut-off** **V\_g1(co)**  
control grid voltage V<sub>g1(co)</sub>

The value as specified by level (minMax) of the direct voltage (in V), on grid 1 with respect to the cathode, for visual extinction of the focused raster of a monochrome display tube at nominal grid 2 voltage.

IEC 60050 (531) (1974)

REMARKS:  
Applies to grid-driven display tubes.

**AAE579-005 01 NR2..3.3 E06**  
level nom real measure  
V

**heater voltage** **V\_f**  
V<sub>f</sub>

The nominal rms ac or dc voltage (in V) across the heater terminals of an electron tube.

IEC 60050 (531) (1974)

**AAE580-005 01 NR3..3.3ES2 E01**  
level nom real measure  
A

**heater current** **I\_f**  
I<sub>f</sub>

The nominal rms ac or dc current (in A) flowing through the heater of an electron tube.

IEC 60050 (531) (1974)

**AAE581-005 01 NR2..3.3 T03**  
level max real measure  
m

**overall length** **I\_o**  
I<sub>o</sub>

The maximum overall length (in m) of a product.

**AAE584-005 01 NR2 S..3.3 E06**  
level minMax real measure  
V

**grid 2 voltage for cut-off** **V\_g2(co)**  
V<sub>g2(co)</sub>

The value as specified by level (minMax) of the direct voltage (in V) on grid 2 with respect to grid 1 for visual extinction of the focused spot of a colour display tube at maximum cathode voltage.

REMARKS:  
Adjustment procedure:  
With all cathodes at maximum voltage, V<sub>g2</sub> is increased to a value at which one of the colours becomes just visible. Then the cathode voltages of the remaining guns are decreased until the other colours also become visible.

**AAE585-005 01 NR3..3.3ES2 E06**  
level nom real measure  
%

**focusing voltage** **V\_foc**  
V<sub>foc</sub>

The nominal direct voltage (in %) relative to the anode voltage, on grid 3 with respect to grid 1, for focusing of a colour display tube.

**AAE586-005 01 NR3..3.3ES2 E06**  
level minMax real measure  
V

**focusing voltage** **V\_foc**  
V<sub>foc</sub>

The value as specified by level (minMax) of the direct voltage (in V), on grid 4 with respect to grid 1, for focusing of a monochrome display tube.

**AAE588-005 01 NR1..4 T01**  
level nom integer measure  
deg

**deflection angle** **\$a\_defl**  
α<sub>defl</sub>

The nominal angle of deflection (in deg) on the diagonal of the useful screen used to identify a display tube.

**AAE589-005 01 NR2..3.3 T03**  
level nom real measure  
m

**neck diameter** **d<sub>neck</sub>**  
d<sub>neck</sub>

The nominal outer diameter (in m) of the neck of a display tube.

**AAE593-005 01 NR3..3.3ES2 T03**  
level min real measure  
m

**useful screen horizontal** **b<sub>scr</sub>**  
b<sub>scr</sub>

The minimum projected width (in m) of the useful screen measured along the horizontal axis of a display tube.

**AAE590-005 01 NR3..3.3ES2 E06**  
level miNoMax real measure  
V

**anode voltage** **V<sub>a</sub>**  
final accelerator voltage V<sub>a</sub>

The value as specified by level (miNoMax) of the direct voltage (in V) on the anode of a display tube.

**REMARKS:**

All voltages relative to grid 1 (cathode drive) or to cathode (grid drive).

**AAE594-005 01 NR3..3.3ES2 T03**  
level min real measure  
m

**useful screen vertical** **h<sub>scr</sub>**  
h<sub>scr</sub>

The minimum projected height (in m) of the useful screen measured along the vertical axis of a display tube.

**AAE591-005 01 NR2 S..3.3 E06**  
level minMax real measure  
V

**cathode voltage for cut-off** **V<sub>k(co)</sub>**  
cathode voltage V<sub>k(co)</sub>

The value as specified by level (minMax) of the direct voltage (in V), on the cathodes with respect to grid 1, for visual extinction of the focused spot of a colour display tube.

**REMARKS:**

See AAE584-005 for the adjustment procedure.

**AAE595-005 01 NR1..4 T03**  
level nom integer measure  
cm

**tube size (cm)** **d<sub>gls(c)</sub>**  
d<sub>gls(c)</sub>

The nominal overall outer diagonal (in cm) of the glass envelope of a display tube, used as product identification.

**REMARKS:**

In the Pro Electron type designation code for display tubes other than TV picture and monitor tubes, the face diagonal (in cm) corresponds with the first number.  
For TV picture tubes and monitor tubes see AAE592-005.

**AAE592-005 01 NR1..4 T03**  
level nom integer measure  
cm

**screen diagonal** **d<sub>scr</sub>**  
d<sub>scr</sub>

The nominal projected length of the useful screen diagonal (in cm) of a display tube, used as product identification.

**REMARKS:**

In the Pro Electron type designation code, for TV picture tubes and monitor tubes, the screen diagonal corresponds with the second (number) symbol, consisting of a two or three-digit number.  
For other display tubes see AAE595-005.

**AAE596-005 02 NR2..3.3 L13**  
level nom real measure  
%

**glass transmission** **glass trans**  
light transmission glass trans

The nominal quantity of visible light (in %) relative to the quantity of generated light, transmitted through the screen of a display tube.

**REMARKS:**

Measured at screen centre.

**AAE598-005 01**      **M..8**      **A58**  
                                  simple      non-quantitative code

**base type****base type**

EIA code of the base type of a display tube.

B10-277 = B10-277  
 B12-246 = B12-246  
 B12-262 = B12-262  
 B7-208 = B7-208  
 B8-228 = B8-228  
 B8-274 = B8-274  
 B8-288 = B8-288  
 B8H = (neo-eightar/IEC67)  
 E7-91 = E7-91

**AAE603-005 01**      **NR2 S..3.3**      **E06**  
                                  level minMax      real measure  
                                  V

**cathode voltage for cut-off**      **V<sub>k(co)</sub>**  
                                  V<sub>k(co)</sub>

The value as specified by level (minMax) of the direct voltage (in V), on the cathode with respect to grid 1, for visual extinction of the focused raster of a monochrome display tube at minimum grid 2 voltage.

**REMARKS:**

Applies to cathode-driven display tubes.

**AAE605-005 01**      **M..3**      **A91**  
                                  simple      string

**phosphor code****phosphor code**

Pro Electron code of the phosphor type(s) of a display tube. REMARK: For codes see table D in naming document.

**REMARKS:**

1. In the Pro Electron type designation code, the phosphor code corresponds with the fifth (letter) symbol, consisting of a single letter or a two-letter combination.

2. The table gives fluorescent and phosphorescent colours, CIE colour coordinates, persistence and comparable EIA designation.

3. The FIRST LETTER denotes the colour of the fluorescence (or phosphorescence in the case of very long persistence screens) according to the regions of the Kelly Chart: the fluorescent colour is that seen during continuous or pulsating excitation (e.g. raster display) and the phosphorescent colour is that seen after excitation has ceased.

The SECOND LETTER denotes other specific differences in screen properties.

4. For colour TV picture tubes, the phosphor is defined by the letter X or the letters XX.

For colour monitor tubes, the phosphor (usually tri-colour) may be defined by the letter(s) X, XX or some other two-letter combination, excluding the letters I and O.

For monochrome TV picture tubes, the phosphor is defined by the letters WW.

For monochrome monitors, the phosphor may be defined by the letters WW or some other two-letter combination, excluding the letters I and O.

**AAE606-005 01**      **M..3**      **A56**  
                                  simple      non-quantitative code

**application code****appl code**

Pro Electron/EIA code indicating the primary application of a display tube.

A = TV picture tube  
 D = oscilloscope tube, single trace  
 E = oscilloscope tube, double trace  
 F = radar display tube  
 L = storage display tube  
 M = monitor tube  
 P = projection tube  
 Q = flying spot scanner  
 R = recording tube with fibre optic output

Pro Electron (1988)

**REMARKS:**

In the Pro Electron type designation code, the application code corresponds with the first (letter) symbol and shall consist of a single letter.

**AAE607-005 01 NR3..3.3ES2 E22**  
level nom real measure  
H

**line coil inductance** **L<sub>H</sub>**  
L<sub>H</sub>

The nominal inductance (in H) of the line deflection coils of a deflection unit, connected in parallel.

**REMARKS:**

The inductance may include a series-connected loss coil.

**AAE608-005 01 NR3..3.3ES2 E22**  
level nom real measure  
H

**field coil inductance** **L<sub>V</sub>**  
L<sub>V</sub>

The nominal inductance (in H) of the field deflection coils of a deflection unit, connected in series.

**REMARKS:**

If connected in parallel the inductance is 4 times lower.

**AAE609-005 01 NR3..3.3ES2 E33**  
level nom real measure  
Ω

**line coil resistance** **R<sub>H</sub>**  
R<sub>H</sub>

The nominal dc resistance (in ohms) of the line deflection coils of a deflection unit, connected in parallel.

**REMARKS:**

The resistance may include the resistance of a series connected loss coil.

**AAE610-005 01 NR3..3.3ES2 E33**  
level nom real measure  
Ω

**field coil resistance** **R<sub>V</sub>**  
R<sub>V</sub>

The nominal dc resistance (in ohms) of the field deflection coils of a deflection unit, connected in series.

**REMARKS:**

If connected in parallel the resistance is 4 times lower.

**AAE611-005 02 NR3..3.3ES2 E01**  
level nom real measure  
A

**line deflection current** **I<sub>H</sub>**  
I<sub>H</sub>

The nominal peak-to-peak current (in A) to deflect the spot on the screen of a display tube assembly from edge to edge horizontally, at nominal anode voltage.

**AAE612-005 02 NR3..3.3ES2 E01**  
level nom real measure  
A

**field deflection current** **I<sub>V</sub>**  
I<sub>V</sub>

The nominal peak-to-peak current (in A) to deflect the spot on the screen of a display tube assembly from edge to edge vertically, at nominal anode voltage.

**AAE616-005 02 NR1..4 H01**  
level miNoMax integer measure  
K

**thermal sensitivity index** **B<sub>25/75</sub>**  
B<sub>25/75</sub> value B<sub>25/75</sub>

The value as specified by level (miNoMax) of the mean temperature sensitivity index (in K) of an NTC thermistor between 25 and 75 Cel.

IEC 60539 (2002)

**AAE617-005 01 NR3..3.3ES2 E33**  
level min real measure  
Ω/s

**LDR recovery rate** **recovery rate**  
recovery rate

The minimum recovery rate of the resistance of a light dependent resistor (in Ω/s) from light to dark, after a specified duration, initial illuminance level and colour temperature.

AAE028-005 = duration  
AAE623-005 = colour temperature  
AAE624-005 = illuminance

|                                                                                                                                                                           |                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------|
| <b>AAE618-005 01</b><br>simple                                                                                                                                            | <b>M..8</b><br>non-quantitative code                    | <b>A56</b> | <b>AAE621-005 01</b><br>level max                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>NR2..3.3</b><br>real measure<br>dB      | <b>E06</b> |
| <b>PTC application</b>                                                                                                                                                    | <b>PTC application</b>                                  |            | <b>resistor noise index</b><br>current-noise index                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>F<sub>res</sub></b><br>F <sub>res</sub> |            |
| Code of a PTC thermistor identifying its application.                                                                                                                     |                                                         |            | The maximum current-noise index in one frequency decade (in dB), relative to the applied dc voltage, of a fixed linear resistor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            |            |
| DEGA = degaussing colour TV tubes (dual PTC)<br>HEAT = heating element<br>MOTOR = motor starting<br>PROT = overload protection<br>SENS = temperature sensing              |                                                         |            | IEC 60195 (1965)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            |            |
| <b>AAE619-005 01</b><br>level min                                                                                                                                         | <b>NR2..3.3</b><br>real measure<br>A                    | <b>E01</b> | <b>REMARKS:</b><br>The current-noise index 'microvolts per volt in a decade' expressed in dB is the term used to express the 'noisiness' of individual resistors.<br>The ideal rectangular pass band associated with the current-noise index is one frequency decade, geometrically centred at 1000 Hz (c/s).<br>The index is defined as follows:<br>Current-noise index = 20 log <sub>10</sub> (V <sub>rms</sub> )/V <sub>T</sub> dB (in a frequency decade).<br>Where V <sub>rms</sub> is the number of microvolts of open circuit rms current-noise voltage in a frequency decade and V <sub>T</sub> is the number of dc volts applied to the resistor under test.<br>Since the current-noise power spectrum approximates to a 1/f frequency characteristic, the index provides an estimate of current-noise in any frequency decade. |                                            |            |
| <b>PTC peak inrush current</b>                                                                                                                                            | <b>I<sub>peak</sub>(inr)</b><br>I <sub>peak</sub> (inr) |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |            |
| The minimum peak alternating inrush current (in A) of a degaussing PTC thermistor at specified ac voltage and ambient temperature.                                        |                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |            |
| AAE014-005 = ambient temperature<br>AAE150-005 = voltage (ac)                                                                                                             |                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |            |
| <b>AAE620-005 01</b><br>level max                                                                                                                                         | <b>NR2..3.3</b><br>real measure<br>A                    | <b>E01</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |            |
| <b>PTC peak current</b>                                                                                                                                                   | <b>I<sub>peak</sub></b><br>I <sub>peak</sub>            |            | <b>AAE622-006 02</b><br>simple                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>M..3</b><br>non-quantitative code       | <b>A59</b> |
| The maximum peak alternating current (in A) of a degaussing PTC thermistor, at specified ac voltage, ambient temperature, and duration after switch-on of the ac voltage. |                                                         |            | <b>pulse shape</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>@pulse shape</b>                        |            |
| AAE014-005 = ambient temperature<br>AAE028-005 = duration<br>AAE150-005 = voltage (ac)                                                                                    |                                                         |            | Code of the shape of a pulse applied to an electric, electronic or electromechanical component as a variable.<br><br>REC = rectangular pulse<br>SQW = square-wave pulse<br>EXP = exponential or 'full lightning' impulse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            |            |
|                                                                                                                                                                           |                                                         |            | <b>REMARKS:</b><br>References: full lightning impulse IEC 60060-1 (1989)<br>rectangular pulse IEC 60050(702) (1992)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |            |
| <b>AAE623-005 01</b><br>simple                                                                                                                                            | <b>NR1..4</b><br>integer measure<br>K                   | <b>H01</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |            |
| <b>colour temperature</b>                                                                                                                                                 | <b>@T<sub>col</sub></b><br>@T <sub>col</sub>            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |            |
|                                                                                                                                                                           |                                                         |            | The colour temperature of light (in K) applied to a light dependent resistor, as a variable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |            |



|                                                                                                                                                                                                                                                 |                                                  |            |                                                                                                                                                                                                                                    |                                         |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|
| <b>AAE624-005 02</b><br>simple                                                                                                                                                                                                                  | <b>NR1..4</b><br>integer measure<br>lx           | <b>L34</b> | <b>AAE633-005 01</b><br>level max                                                                                                                                                                                                  | <b>NR3..3.3ES2</b><br>real measure<br>m | <b>T03</b> |
| <b>illuminance</b>                                                                                                                                                                                                                              | <b>@E</b><br><b>@E</b>                           |            | <b>lacquered length</b>                                                                                                                                                                                                            | <b>I_lacq</b><br>L <sub>lacq</sub>      |            |
| The illuminance of light (in lx) applied to a light dependent resistor, as a variable.                                                                                                                                                          |                                                  |            | The maximum length (in m) of the body of an electric/ electronic or electromechanical component with axial leads, including the lacquered part of the leads.                                                                       |                                         |            |
| <b>AAE625-005 01</b><br>level max                                                                                                                                                                                                               | <b>NR3..3.3ES2</b><br>real measure<br>A          | <b>E01</b> | <b>AAE634-005 01</b><br>simple                                                                                                                                                                                                     | <b>M..8A57</b><br>non-quantitative code |            |
| <b>thermistor current</b>                                                                                                                                                                                                                       | <b>I_TDR</b><br>I <sub>TDR</sub>                 |            | <b>terminal material</b>                                                                                                                                                                                                           | <b>terminal mat</b>                     |            |
| The maximum dc current (in A) through a thermistor at specified dc voltage and ambient temperature.                                                                                                                                             |                                                  |            | Code of the terminal material of an electric-electronic or electromechanical component.                                                                                                                                            |                                         |            |
| AAE013-005 = voltage (dc)<br>AAE014-005 = ambient temperature                                                                                                                                                                                   |                                                  |            | AgPd = silver-palladium<br>NiSn = nickel-tin                                                                                                                                                                                       |                                         |            |
| <b>AAE626-005 01</b><br>level miNoMax                                                                                                                                                                                                           | <b>NR3..3.3ES2</b><br>real measure<br>Ω          | <b>E33</b> | <b>AAE635-001 01</b><br>simple                                                                                                                                                                                                     | <b>M..17</b><br>string                  | <b>A58</b> |
| <b>PTC switching resistance</b>                                                                                                                                                                                                                 | <b>R_sw</b><br>R <sub>sw</sub><br>R <sub>b</sub> |            | <b>resistor package code</b><br>envelope code                                                                                                                                                                                      | <b>res package</b>                      |            |
| The value as specified by level (miNoMax) of the zero-power resistance (in ohms) of a PTC thermistor corresponding with the switching temperature.                                                                                              |                                                  |            | Code of the package or envelope type of a resistor.                                                                                                                                                                                |                                         |            |
| IEC 60738-1 (1998)                                                                                                                                                                                                                              |                                                  |            | <b>AAE637-005 01</b><br>simple                                                                                                                                                                                                     | <b>M..17</b><br>string                  | <b>A58</b> |
| REMARKS:<br>The value of zero-power resistance corresponding to the switching temperature.                                                                                                                                                      |                                                  |            | <b>transistor package code</b><br>envelope code                                                                                                                                                                                    |                                         |            |
| NOTE<br>The switching resistance is expressed with reference to the minimum resistance (R <sub>min</sub> ) by a specified multiplying factor. It may also be expressed as an absolute value of resistance and independent of R <sub>min</sub> . |                                                  |            | Code of the envelope type of a transistor.                                                                                                                                                                                         |                                         |            |
| <b>AAE629-005 01</b><br>level max                                                                                                                                                                                                               | <b>NR3..3.3ES2</b><br>real measure<br>A          | <b>E01</b> | <b>AAE638-005 02</b><br>simple                                                                                                                                                                                                     | <b>M..3</b><br>non-quantitative code    | <b>A55</b> |
| <b>PTC residual current</b>                                                                                                                                                                                                                     | <b>I_res</b><br>I <sub>res</sub>                 |            | <b>transistor polarity</b>                                                                                                                                                                                                         | <b>polarity</b>                         |            |
| The maximum residual current (in A) of a PTC thermistor at specified ac voltage and ambient temperature.                                                                                                                                        |                                                  |            | The abbreviated name of the type of semiconductor material forming the junctions of a bipolar transistor.                                                                                                                          |                                         |            |
| AAE014-005 = ambient temperature<br>AAE150-005 = voltage (ac)                                                                                                                                                                                   |                                                  |            | NPN = negative-positive-negative<br>PNP = positive-negative-positive                                                                                                                                                               |                                         |            |
|                                                                                                                                                                                                                                                 |                                                  |            | REMARKS:<br>N-type: Extrinsic semiconductor in which the conduction electron density exceeds the mobile hole density.<br>P-type: Extrinsic semiconductor in which the mobile hole density exceeds the conduction electron density. |                                         |            |

**AAE640-005 02 NR2..3.3 E01**  
level minMax real measure  
1

**collector current ratio  $I_{1C}/I_{2C}$**   
 $I_{1C}/I_{2C}$

The value as specified by level (minMax) of the ratio of the collector currents of a dual bipolar transistor at specified equal collector-base voltages, equal base-emitter voltages and at specified sum of emitter currents.

AAE408-005 = emitter current (dc)  
AAE419-005 = collector-base voltage  
AAE427-005 = base-emitter voltage

**AAE641-005 02 NR2..3.3 E01**  
level max real measure  
A

**collector saturation current  $I_{Csat}$**   
 $I_{Csat}$

The maximum collector current (in A) at which the collector-emitter and base-emitter saturation voltages of a switching bipolar transistor are given at specified dc saturation current gain and ambient temperature.

#### NOTE

At  $I_{Csat}$  the switching properties should also be characterised in a resistive circuit ( $t_d$ ,  $t_r$ ,  $t_s$  and  $t_f$ ) using the same value for  $+I_B$  and  $-I_B$  as the base current used for  $V_{Cesat}$  and  $V_{Besat}$ .

AAE014-005 = ambient temperature  
AAE952-005 = dc current gain sat

**AAE642-005 01 NR3..3.3ES2 E01**  
level nom real measure  
A/K

**differential current change  $\$DI/\$DT$**   
 $|\Delta I/\Delta T|$

The absolute value of the differential current change with temperature (in A/K) of a dual bipolar transistor at specified sum of emitter currents and equal collector-base voltage, within a temperature range, between specified temperatures ( $T_1$  and  $T_2$ ).

AAE408-005 = emitter current (dc)  
AAE419-005 = collector-base voltage  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

**AAE644-005 01 NR3..3.3ES2 E06**  
level max real measure  
V/K

**differential voltage change  $\$DV/\$DT$**   
 $|\Delta V/\Delta T|$

The absolute value of the maximum differential voltage change with temperature (in V/K) of a dual bipolar transistor at specified sum of emitter currents and equal collector-base voltage, within a temperature range, specified by the temperatures ( $T_1$  and  $T_2$ ).

AAE408-005 = emitter current (dc)  
AAE419-005 = collector-base voltage  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

**AAE647-005 02 NR2..3.3 E49**  
level max real measure  
dB

**average noise figure  $F_{AV}$**   
average noise factor  
noise figure

The maximum average noise figure (in dB) of a bipolar transistor at specified collector current, collector-emitter voltage, source impedance and bandwidth.

AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage  
AAE934-005 = bandwidth  
AAE936-005 = source impedance

IEC 60747-1 (1983)

#### REMARKS:

Average noise figure:

Ratio of 1) the total output noise power within an output frequency band when the noise temperature of all input terminations is at the reference noise temperature  $T_0$  at all frequencies that contribute to the output noise, to 2) that part of Item 1) caused by the noise of the signal-input termination within the signal-input frequency band.

**AAE648-005 02 NR2..3.3 E49**  
level minTypMax dB real measure

**spot noise figure**  
spot noise factor  
noise figure

**F**  
F

The value as specified by level (minTypMax) of the spot noise figure (in dB) of a bipolar transistor at specified collector current, collector-emitter voltage, source impedance and frequency.

AAE029-005 = frequency  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage  
AAE936-005 = source impedance

IEC 60747-1 (1983)

**REMARKS:**

Spot noise figure:

Ratio of 1) the total output noise power per unit bandwidth (spectral density) at a single output frequency when the noise temperature of all input terminations is at the reference noise temperature  $T_{no}$  at all frequencies that contribute to the output noise, to 2) that part of item 1) caused by the noise of the signal-input termination at the signal-input frequency.

**AAE657-005 02 NR2..3.3 E49**  
level minTypMax dB real measure

**spot noise figure**  
spot noise factor  
noise figure

**F**  
f

The value as specified by level (minTypMax) of the spot noise figure (in dB) of a field-effect transistor at specified drain current, drain-source voltage, gate-source voltage, source impedance and frequency.

AAE029-005 = frequency  
AAE367-005 = drain current (dc)  
AAE376-005 = drain-source voltage  
AAE381-005 = gate-source voltage  
AAE936-005 = source impedance

IEC 60747-1 (1983)

**REMARKS:**

Spot noise figure:

Ratio of 1) the total output noise power per unit bandwidth (spectral density) at a single output frequency when the noise temperature of all input terminations is at the reference noise temperature  $T_{no}$  at all frequencies that contribute to the output noise, to 2) that part of item 1) caused by the noise of the signal-input termination at the signal-input frequency.

**AAE655-005 01 NR3..3.3ES2 E09**  
level max F real measure

**input capacitance at gate** **C<sub>ig</sub>**  
C<sub>ig</sub>

The maximum input capacitance (in F) at the gate of an N-channel field-effect transistor at specified drain current, drain-source voltage, gate-source voltage and frequency.

AAE029-005 = frequency  
AAE367-005 = drain current (dc)  
AAE376-005 = drain-source voltage  
AAE381-005 = gate-source voltage

IEC 60747-8 (2000)

**AAE682-006 02 M..17 A91**  
level simple non-quantitative code

**level** **@level**

Abbreviated name of the value level of a physical quantity, distinguishing it from other possible or allowed values of the same quantity.

miNoMax = minimum/nominal/maximum  
minTyp = minimum/typical  
minTypMax = minimum/typical/maximum  
typMax = typical/maximum  
minMax = minimum/maximum

**AAE656-005 02 NR3..3.3ES2 E45**  
level minTypMax S real measure

**transfer conductance** **g<sub>fs</sub>**  
g<sub>fs</sub>

The value as specified by level (minTypMax) of the nominal value of the real part of the transfer admittance (in S) of a forward biased field-effect transistor at specified drain current and drain-source voltage.

AAE367-005 = drain current (dc)  
AAE376-005 = drain-source voltage

**AAE683-005 02** **M..8A56**  
simple non-quantitative code

**temperature type @T type**

IEC code of the type of temperature indicating the specific part of a component, or its environment, to which it applies.

T<sub>mb</sub> = mounting base temperature  
T<sub>j</sub> = junction temperature  
T<sub>tp</sub> = tie-point temperature  
T<sub>amb</sub> = ambient temperature  
T<sub>case</sub> = case (envelope) temperature  
T<sub>h</sub> = heatsink temperature

**REMARKS:**

This data element to be used in combination with AAE685-005.

**AAE684-005 01** **NR3 S..3.3ES2** **E01**  
simple real measure  
A

**rate of rise of on-state curr @dI<sub>T</sub>/dt**  
@dI<sub>T</sub>/dt

The rate of rise of the on-state current (in A/s) in a thyristor, as a variable.

**AAE685-005 01** **NR1 S..4** **H02**  
simple integer measure  
Cel

**temperature @T**  
@T

The temperature (in Cel) of a component, or its environment, as a variable.

**REMARKS:**

This data element to be used in combination with AAE683-005.

**AAE686-005 03** **M..8** **A55**  
simple non-quantitative code

**IC technology**

**IC technology**

Code indicating the semiconductor technology of an IC.

ACL = \*\*advanced CMOS logic  
ALS = \*\*\*advanced low power Schottky TTL  
ASTTL = \*\*\*advanced Schottky TTL  
BICMOS = bipolar & CMOS combined  
BIP = bipolar  
CMOS = \*complementary MOS  
ECL = \*emitter coupled logic  
FAST = \*\*\*Fast TTL  
HCMOS = \*\*high speed CMOS  
I2L = \*integrated injection logic  
LSTTL = \*\*\*low power Schottky TTL  
MIXMOS = NMOS & CMOS combined  
MOS = metal oxide semiconductor  
NMOS = \*N-type MOS  
PMOS = \*P-type MOS  
STD<sub>T</sub>TTL = \*\*standard TTL  
STTL = \*\*Schottky TTL  
TTL = \*transistor transistor logic

**AAE687-005 01** **M..8A59**  
simple non-quantitative code

**quality approval authority QA authority**  
quality assurance  
quality certification

The abbreviated name of the authority for quality certification of products.

AQAP = Allied Quality Assurance Procedure  
CECC = Cenelec Electronic Components Committee  
IECQ = IEC Quality Assessment System  
MIL = Military Standard (USA)

**AAE688-005 02** **NR2..3.3** **H12**  
level max real measure  
K/W

**thermal resistance R<sub>th</sub>**  
R<sub>th</sub>

The maximum operating thermal resistance (in K/W), of an electric-electronic or electromechanical component, of a specified thermal resistance type.

AAE689-005 = thermal resistance type

ISO 31-4 (1992)

**AAE689-005 01 M..17 A56**  
simple non-quantitative code

**thermal resistance type @R<sub>th</sub>(type)**  
@R<sub>th</sub>(type)

Code specifying the thermal resistance type of an electric/electronic component.

R<sub>th</sub>(h-a) = R<sub>th</sub> from heatsink to ambient free air  
R<sub>th</sub>(j-a) = R<sub>th</sub> from junction to ambient free air  
R<sub>th</sub>(j-c) = R<sub>th</sub> from junction to case  
R<sub>th</sub>(j-h) = R<sub>th</sub> from junction to heatsink  
R<sub>th</sub>(j-mb) = R<sub>th</sub> from junction to mounting base  
R<sub>th</sub>(j-t) = R<sub>th</sub> from junction to tie-point  
R<sub>th</sub>(mb-h) = R<sub>th</sub> from mounting base to heatsink

**REMARKS:**

This data element is to be used in combination with AAE688.

**AAE690-005 01 NR2 S..3.3 E06**  
level minTypMax V real measure

**supply voltage**  
dc supply voltage **V<sub>sup</sub>**  
V<sub>sup</sub>

The value as specified by level (minTypMax) of the direct supply voltage, applied to an IC.

**REMARKS:**

Commonly known supply voltage symbols:  
V<sub>CC</sub> for TTL, NMOS and HCMOS circuits  
V<sub>DD</sub> for CMOS circuits  
V<sub>P</sub> for analogue circuits  
V<sub>EE</sub> for ECL circuits

**AAE691-005 01 NR3 S..3.3ES2 E01**  
level minTypMax A real measure

**supply current**  
dc supply current **I<sub>sup</sub>**  
I<sub>sup</sub>

The value as specified by level (minTypMax) of the direct supply current of an IC.

**REMARKS:**

Commonly known supply current symbols:  
I<sub>CC</sub> for TTL, NMOS and HCMOS circuits  
I<sub>DD</sub> for CMOS circuits  
I<sub>GND</sub> for the quiescent power supply current (ground current) of CMOS and HCMOS circuits.  
I<sub>P</sub> for analogue circuits

**AAE692-005 02 NR3 S..3.3ES2 E01**  
level max real measure  
A

**standby current disabled I<sub>stbD</sub>**  
I<sub>stbD</sub>  
I<sub>CCstbD</sub>

The maximum standby supply current (in A) of a combinatorial, sequential or interface function of an IC with the output disabled.

**AAE693-005 02 NR3 S..3.3ES2 E01**  
level max real measure  
A

**standby current enabled I<sub>stbE</sub>**  
I<sub>stbE</sub>  
I<sub>CCstbE</sub>

The maximum standby supply current (in A) of a digital combinatorial, sequential or interface IC with the output enabled.

**AAE696-005 01 X..3 A56**  
simple non-quantitative code  
**tube type**  
tube type

Code of the category to which an electron tube belongs.

CRT = display tubes (cathode-ray tube)  
GAS = gas filled tubes  
PHO = photosensitive tubes  
SCC = space charge controlled tubes  
SCW = space charge wave tubes

**AAE697-005 01 NR3..3.3ES2 E01**  
level minTypMax A real measure

**current consumption I<sub>tot</sub>**  
I<sub>tot</sub>

The value as specified by level (minTypMax) of the direct supply current (in A) applied to an amplifier at specified supply voltage and temperature of a temperature type.

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAE698-005 01 NR2..3.3 E06**  
level minTypMax real measure  
dB(mV)

**output voltage** **V\_o**  
V<sub>o</sub>

The value as specified by level (minTypMax) of the output voltage (in dBmV) of a wideband amplifier at specified supply voltage, intermodulation distortion and temperature of a temperature type.

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE709-005 = intermod distortion d\_im

**REMARKS:**

Intermodulation distortion measured according to the three-tone method:

$$\begin{array}{ll} V_p = V_o & f_p = 287.25 \text{ MHz} \\ V_q = V_{o-6} \text{ dB} & f_q = 294.25 \text{ MHz} \\ | V_r = V_{o-6} \text{ dB} | & f_r = 296.25 \text{ MHz} \end{array}$$

measuring frequency is  $f_{(p+q-r)} = 285.25 \text{ MHz}$   
60 dB(mV) means 60 dB above 1 mV, is 1 V.

**AAE699-005 02 NR2 S..3.3 E06**  
level minTypMax real measure  
dB

**composite triple beat** **CTB**  
CTB

The value as specified by level (minTypMax) of the quotient (in dB) of a wideband amplifier of: 1) the sum of frequency components measured at a specified TV channel arising from superposition of any three frequency components when a specified number of adjacent channels have an input signal resulting in an equal output voltage, to 2) the wanted output signal level at specified supply voltage temperature of a temperature type.

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAE700-005 02 NR2 S..3.3 E06**  
level minTypMax real measure  
dB

**2nd-order beat** **d\_2**  
d<sub>2</sub>

The value as specified by level (minTypMax) of the quotient (in dB) of a wideband amplifier of: 1) the amplitude of the frequency component arising by the superposition of two input signals with specified amplitude and frequency (or channel) measured at a specified frequency (or channel), and 2) the amplitude of one of two original frequencies at specified supply voltage, temperature and temperature type.

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**REMARKS:**

Measuring method:

$$\begin{array}{ll} V_p = V_o & f_p = f_1 \text{ (channel p)} \\ V_q = V_o & f_q = f_2 \text{ (channel q)} \end{array}$$

2nd-order beat measured at  $(f_1 + f_2)$

**AAE701-005 01 NR1 S..4 E06**  
level minTypMax integer measure  
dB

**input return losses** **S\_11**  
S<sub>11</sub>

The value as specified by level (minTypMax) of the complex ratio (in dB) of: 1) a sinusoidal incident current, to 2) the corresponding reflected current at the input of a wideband amplifier at specified supply voltage, input impedance, temperature of a temperature type and a frequency range between specified frequencies ( $f_1$  and  $f_2$ ).

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE936-005 = source impedance  
AAE963-005 = frequency f\_1  
AAE964-005 = frequency f\_2



**AAE702-005 01 NR1 S..4 E06**  
level minTypMax integer measure  
dB

**output return losses S\_22**  
S<sub>22</sub>

The value as specified by level (minTypMax) of the complex ratio (in dB) of: 1) a sinusoidal incident current, to 2) the corresponding reflected current at the output of a wideband amplifier at specified supply voltage, output impedance, temperature of a temperature type and a frequency range between specified frequencies ( $f_1$  and  $f_2$ ).

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE938-005 = load impedance  
AAE963-005 = frequency  $f_1$   
AAE964-005 = frequency  $f_2$

**AAE703-005 01 NR1 S..4 E06**  
level minTypMax integer measure  
dB

**cross modulation Xmod**  
Xmod

The value as specified by level (minTypMax) of the cross modulation (in dB) measured at the output of a wideband amplifier when a specified number of carrier frequencies, with each an equal output voltage, is applied to the input of the module at specified supply voltage, temperature of a temperature type.

#### NOTES

1 All carrier frequencies are switched on/off with a duty cycle of 50% and a repetition frequency of: 15,750 kHz for 60 Hz mains frequencies and 15,625 kHz for 50 Hz mains frequencies.

2 100% is specified as 0 dB  
1% is specified as -40 dB

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAE704-005 02 NR2..3.3 E49**  
simple real measure  
W

**sync output power @P\_o(syn)**  
@P<sub>o(syn)</sub>

The operating sync output power (in W) of a bipolar rf power transistor or wideband amplifier, measured according to the three-tone test method, as a variable.

#### REMARKS:

Three-tone test method:

vision frequency  $f_v$  level = -8 dB  
sound carrier frequency  $f_v + 5.5$  MHz level = -7 dB  
sideband signal  $f_v - 1.1$  MHz level = -16 dB  
zero level 0 dB corresponds to peak sync level.

**AAE705-005 02 NR2 S..3.3 E49**  
level minTypMax real measure  
dB

**slope cable equivalent SL**  
SL

The value as specified by level (minTypMax) of the difference in power gain (in dB) of a wideband amplifier measured at specified frequencies ( $f_1$  and  $f_2$ ) of a frequency range, with an optimised cable equivalent impedance, at specified supply voltage and temperature of a temperature range.

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE963-005 = frequency  $f_1$   
AAE964-005 = frequency  $f_2$

**AAE706-005 03 NR2..3.3 E49**  
level minTypMax real measure  
dB

**conformity of frequency response FL**  
flatness of frequency response FL  
flatness

The value as specified by level (minTypMax) of the gain difference (in dB) of a wideband amplifier of the measured power gain and the theoretical calculated power gain with an optimised cable equivalent impedance at specified supply voltage, temperature of a temperature type and a frequency range between specified frequencies ( $f_1$  and  $f_2$ ).

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE963-005 = frequency  $f_1$   
AAE964-005 = frequency  $f_2$

**AAE707-005 02 NR2..3.3 E49**  
level minTypMax real measure  
W

**peak envelope power PEP PEP**  
PEP

The value as specified by level (minTypMax) of the peak envelope power (in W) of a bipolar transistor in SSB mode of operation, measured according to the two-signal method, at specified collector-emitter voltage, collector current, frequency and temperature of a temperature type.

AAE029-005 = frequency  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAE708-005 02 NR2..3.3 E49**  
simple real measure  
W

**peak envelope power @PEP**  
@PEP

The value of the peak envelope power (in W) of a bipolar transistor or wideband amplifier in SSB mode of operation, measured according to the two-signal method, as a variable.

**AAE709-005 01 NR1 S..4 E06**  
simple integer measure  
dB

**intermod distortion d\_im @d\_im**  
@d\_im

The intermodulation distortion (in dB) of a bipolar rf power transistor or wideband amplifier measured according to the three-tone test method, as a variable.

#### REMARKS:

|                         |                         |                |
|-------------------------|-------------------------|----------------|
| vision frequency        | $f_v$                   | level = -8 dB  |
| sound carrier frequency | $f_v + 5.5 \text{ MHz}$ | level = -7 dB  |
| sideband signal         | $f_v - 1.1 \text{ MHz}$ | level = -16 dB |

zero level 0 dB corresponds to peak sync level.

**AAE710-005 01 NR1 S..4 E06**  
simple integer measure  
dB

**intermod distortion d\_3 @d\_3**  
@d\_3

The intermodulation distortion (in dB) of a bipolar rf power transistor, measured according to the two-tone test method, as a variable.

#### REMARKS:

Two-tone test method:

$f_1 = 28.000 \text{ MHz}$   $V_1 = V_o - 6 \text{ dB}$   
 $f_2 = 28.001 \text{ MHz}$   $V_2 = V_o - 6 \text{ dB}$   
 measured harmonic component is  
 $(f_2 + 1 \text{ kHz}) - (f_1 - 1 \text{ kHz}) = 3 \text{ kHz}$

**AAE711-005 01 NR2..3.3 E06**  
level minTypMax real measure  
dB

**intermodulation distortion d\_im d\_im**  
d\_im

The value as specified by level (minTypMax) of the intermodulation distortion (in dB) of an rf bipolar power transistor measured according to the three-tone test method at specified sync output power, vision frequency, collector-emitter voltage, collector current and temperature of a temperature type

AAE029-005 = frequency  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE704-005 = sync output power

#### REMARKS:

|                         |                         |                |
|-------------------------|-------------------------|----------------|
| vision frequency        | $f_v$                   | level = -8 dB  |
| sound carrier frequency | $f_v + 5.5 \text{ MHz}$ | level = -7 dB  |
| sideband signal         | $f_v - 1.1 \text{ MHz}$ | level = -16 dB |

zero level 0 dB corresponds to peak sync level.

**AAE712-005 01 NR2 S..3.3 E06**  
level minTypMax dB real measure

**intermodulation distortion d\_3 d\_3**  
d<sub>3</sub>

The value as specified by level (minTypMax) of the third order intermodulation distortion (in dB) of a bipolar rf power transistor measured according to the two-tone test method at specified peak envelope power, frequency, collector-emitter voltage, collector current and temperature of a temperature type

AAE029-005 = frequency  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE708-005 = peak envelope power

**REMARKS:**

Two-tone test method: f<sub>1</sub> = 28.000 MHz, V<sub>1</sub> = V<sub>o</sub> – 6dB f<sub>2</sub> = 28.001 MHz, V<sub>2</sub> = V<sub>o</sub> – 6dB measured harmonic component is: (f<sub>2</sub> + 1 kHz) – (f<sub>1</sub> – 1 kHz) = 3 kHz

**AAE713-005 02 NR2..3.3 E49**  
level minTypMax dB real measure

**unilateral power gain G\_UM**  
G<sub>UM</sub>

The value as specified by level (minTypMax) of the power gain (in dB) of a bipolar transistor, considered as a four-terminal network, conjugately matched at its output terminals, assuming the s<sub>re</sub> (reverse transmission coefficient at common emitter configuration) is zero at specified collector-emitter voltage, collector current, frequency and temperature of a temperature type

AAE029-005 = frequency  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

$$G_{UM} = 10 \log \frac{S_{ie}^2}{(1 - S_{ie}^2)(1 - S_{oe}^2)}$$

**AAE714-005 03 NR2..3.3 E49**  
level minTypMax W real measure

**synchronous output power P\_o(syn)**  
P<sub>o(syn)</sub>

The value as specified by level (minTypMax) of the synchronous output power (in W) of a bipolar rf power transistor measured according to the three-tone test method at specified intermodulation distortion, frequency, collector-emitter voltage, collector current and temperature of a temperature type.

AAE029-005 = frequency  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE709-005 = intermod distortion d<sub>im</sub>

**REMARKS:**

Three-tone test method:  
vision frequency f<sub>v</sub> level = -8 dB  
sound carrier frequency f<sub>v</sub> + 5.5 MHz level = -7 dB  
sideband signal f<sub>v</sub> – 1.1 MHz level = -16 dB  
zero level 0 dB corresponds to peak sync level.

**AAE715-005 02 NR1..4 E49**  
level minTypMax integer measure %

**efficiency \$h**  
η

The value as specified by level (minTypMax) of the ratio (in %) of the caloric power in the load of a bipolar power transistor to the total power supplied to the transistor at specified application, frequency, load power, collector current, collector-emitter voltage, and temperature of a temperature type.

AAE029-005 = frequency  
AAE406-005 = collector current (dc)  
AAE412-005 = collector-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**REMARKS:**

For CW operation the caloric power is equal to P<sub>L</sub>.  
For SSB operation the caloric power is equal to PEP/2.  
The total power supplied to the transistor is V<sub>C</sub> x I<sub>C</sub>.

**AAE716-005 02 NR1 S..4 E06**  
level minTypMax integer measure  
V/V

**difference in penetration factor**  
**\$Dg\\_os/g\\_fs**  
 $\Delta g_{os}/g_{fs}$

The value as specified by level (minTypMax) of the ratio (in V/V) of the change of gate-source voltage difference to the change of drain-gate voltage of a dual field-effect transistor at specified constant drain current, drain-gate voltage and temperature of temperature type.

AAE367-005 = drain current (dc)  
AAE375-005 = drain-gate voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

$$\left| \Delta \frac{g_{os}}{g_{fs}} \right| = \frac{d \Delta V_{GS}}{d V_{DG}}$$

**AAE717-005 03 NR1 S..4 E44**  
level minTypMax integer measure  
 $\Omega$

**difference in transfer impedance** **[\$D1/g\\_fs]**  
 $|\Delta 1/g_{fs}|$

The value as specified by level (minTypMax) of the ratio (in ohms) of the change of gate-source voltage difference to the change of drain current of a dual field-effect transistor at specified constant drain current, drain-gate voltage and temperature of a temperature type.

AAE367-005 = drain current (dc)  
AAE375-005 = drain-gate voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

$$\left| \Delta \frac{1}{g_{fs}} \right| = \frac{d \Delta V_{GS}}{d I_D}$$

**AAE718-005 01 NR2 S..3.3 E06**  
level minTypMax real measure  
V

**HIGH-state input voltage** **V\_IH**  
input voltage HIGH  $V_{IH}$   
HIGH-level input voltage

The value as specified by level (minTypMax) of the HIGH-state dc input voltage (in V), applied to a digital function of an IC at specified supply voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

**AAE719-005 01 NR2 S..3.3 E06**  
level minTypMax real measure  
V

**LOW-state input voltage** **V\_IL**  
input voltage LOW  $V_{IL}$   
LOW-level input voltage

The value as specified by level (minTypMax) of the LOW-state dc input voltage (in V), applied to a digital function of an IC at specified supply voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage  
AAE958-005 = temperature  $T_1$   
AAE959-005 = temperature  $T_2$

IEC 60748-2 (1997)

**AAE720-005 02 NR3..3.3ES2 T07**  
level max real measure  
s

**access time** **t\_ACC**  
address to output delay  $t_{ACC}$   
access time from RAS  $t_{RAC}$

The maximum access time interval (in s), from address to output, of a memory function of an IC.

#### NOTE

In the case of a dynamic RAM, it is the time interval ( $t_{RAC}$ ) between row address strobe and output.

ISO 2382-12 (1988)

|                      |                    |            |                      |                      |            |
|----------------------|--------------------|------------|----------------------|----------------------|------------|
| <b>AAE721-005 02</b> | <b>NR3..3.3ES2</b> | <b>T07</b> | <b>AAE726-005 01</b> | <b>NR1 S..4</b>      | <b>E06</b> |
| level max            | real measure<br>s  |            | level min            | integer measure<br>V |            |

**access time from CAS** **t<sub>CAC</sub>**  
t<sub>CAC</sub>

The maximum time interval (in s) between the application of the CAS (Column Address Strobe) input pulse, other necessary inputs being already present, and the availability of valid data signals at an output of a DRAM.

IEC 60748-2 (1997)

**output voltage** **V<sub>O</sub>**  
breakback voltage V<sub>O</sub>

The minimum output voltage (in V) of a diac at a specified rate of rise of voltage (dV/dt) and junction temperature.

AAE271-005 = junction temperature  
AAE727-005 = rate of rise of off-state volt

**AAE722-007 02** **X..8 A56**  
simple non-quantitative code

**storage function** **sto function**  
memory/register function

Code identifying the storage function of a digital IC.

CAM = content addressable memory lcs  
CCD = charge coupled device lcs  
RAM = random access memory lcs  
REGI = registers  
ROM = read only memory lcs

**AAE727-005 01** **NR3 S..3.3ES2** **E06**  
simple real measure  
V/s

**rate of rise of off-state volt** **@dV<sub>D</sub>/dt**  
@dV<sub>D</sub>/dt

The rate of rise (in V/s) of the off-state voltage of a diac or thyristor, as a variable.

**AAE724-005 01** **X..3 A56**  
simple non-quantitative code

**trigger device function** **trg function**

Code of the function of a trigger device.

DIA = diacs  
THY = thyristors  
TRI = triacs

**AAE728-005 03** **NR1..4** **E01**  
level max integer measure  
A

**rms on-state current** **I<sub>T(RMS)</sub>**  
I<sub>T(RMS)</sub>

The maximum limiting rms on-state current (in A) flowing from the anode to the cathode in a thyristor or triac.

IEC 60747-6 (2000)

**AAE725-005 02** **NR1..4** **E06**  
level minMax integer measure  
V

**breakover voltage** **V<sub>(BO)</sub>**  
V<sub>(BO)</sub>

The value as specified by level (minMax) of the direct voltage (in V) at the breakover point of a diac, which is where the differential resistance is zero and the principal voltage has reached a maximum value, at specified rate of rise of off-state voltage.

AAE727-005 = rate of rise of off-state volt

IEC 60747-6 (2000)

**AAE729-005 03** **NR1..4** **E01**  
level max integer measure  
A

**repetitive peak on-state current** **I<sub>TRM</sub>**  
I<sub>TRM</sub>

The maximum limiting peak on-state current (in A), including all repetitive transient currents, in a triac or thyristor.

IEC 60747-6 (2000)

**AAE730-005 02 NR3 S..3.3ES2 E01**  
level max real measure  
A

**non-rep peak on-state current  $I_{TSM}$**   
surge on-state current  $I_{TSM}$

The maximum limiting non-repetitive peak on-state current (in A) in a thyristor or triac, at specified duration and mounting-base temperature.

AAE028-005 = duration

AAE272-005 = mounting base temperature

IEC 60747-6 (2000)

**AAE731-005 01 NR3 S..3.3ES2 E01**  
simple real measure  
A

**gate current**  $@I_G$   
 $@I_G$

The gate current in a thyristor or triac (in A), as a variable.

**AAE732-005 01 NR3 S..3.3ES2 E01**  
level min real measure  
A

**gate trigger current**  $I_{GT}$   
 $I_{GT}$

The minimum gate current (in A) required to switch a thyristor or triac from the off-state to the on-state at specified off-state voltage and junction temperature.

AAE271-005 = junction temperature

AAE737-005 = off-state voltage

IEC 60747-6 (2000)

**AAE733-005 01 NR3 S..3.3ES2 E01**  
simple real measure  
A

**on-state current**  $@I_T$   
 $@I_T$

The dc on-state current (in A) flowing from anode to cathode in a thyristor or triac, as a variable.

IEC 60747-6 (2000)

**AAE734-005 02 NR3 S..3.3ES2 E01**  
level max real measure  
A/s

**rate of rise on-state current  $dl_T/dt$**   
 $dl_T/dt$

The maximum limiting rate of rise of on-state current (in A/s) after triggering with a specified gate current to a specified on-state current at a stated rate of rise of the gate current.

AAE731-005 = gate current

AAE733-005 = on-state current

AAE736-005 = rate of rise of gate current

IEC 60747-6 (2000)

**AAE735-005 01 NR3 S..3.3ES2 E01**  
simple real measure  
A/s

**rate of rise of commut current  $@dl_{com}/dt$**   
 $@dl_{com}/dt$

The rate of rise of the commutating current (in A/s) of a triac, as a variable.

**AAE736-005 01 NR3 S..3.3ES2 E01**  
simple real measure  
A/s

**rate of rise of gate current  $@dl_G/dt$**   
 $@dl_G/dt$

The rate of rise of the gate current (in A/s) of a thyristor or triac, as a variable.

**AAE737-005 01 NR3 S..3.3ES2 E06**  
simple real measure  
V

**off-state voltage**  $@V_D$   
 $@V_D$

The off-state voltage (in V) between the thyristor or triac anode and cathode, as a variable.

IEC 60747-6 (2000)

**AAE738-005 01 NR3 S..3.3ES2 E06**  
level max real measure  
V

**off-state voltage**  $V_D$   
 $V_D$

The maximum limiting continuous voltage (in V) between the thyristor or triac anode and cathode in the off state, excluding repetitive and non-repetitive voltages.

IEC 60747-6 (2000)



**AAE739-005 02 NR3 S..3.3ES2 E06**  
level max real measure  
V

**repetitive peak off-state voltage  $V_{\text{DRM}}$**

The maximum limiting repetitive peak off-state voltage (in V) across a thyristor or triac including all repetitive voltages but excluding all non-repetitive transient voltages.

IEC 60747-6 (2000)

**AAE740-005 02 NR3 S..3.3ES2 E06**  
level max real measure  
V/s

**rate of rise of off-state voltage  $dV_{\text{D}}/dt$**

The maximum rate of rise (in V/s) of the off-state voltage that will not trigger the device at a specified off-state voltage and junction temperature.

AAE271-005 = junction temperature  
AAE737-005 = off-state voltage

IEC 60747-6 (2000)

**AAE741-005 02 NR3 S..3.3ES2 E06**  
level max real measure  
V

**rate of rise commutating voltage  $dV_{\text{com}}/dt$**   
 $dV_{\text{D}}/dt$

The maximum rate of rise (in V/s) of the commutating voltage, immediately following on-state current conduction in the opposite direction, that will not cause switching from the off-state to the on-state at specified values of the rate of rise of commutating current, rms on-state current, off-state voltage and mounting-base temperature.

AAE272-005 = mounting base temperature  
AAE735-005 = rate of rise of commut current  
AAE737-005 = off-state voltage  
AAF063-005 = rms on-state current

IEC 60747-6 (2000)

**AAE742-005 01 NR3 S..3.3ES2 E06**  
level min real measure  
V

**gate trigger voltage  $V_{\text{GT}}$**

The minimum gate voltage (in V) required to switch a triac or thyristor from the off-state to the on-state at a specified off-state voltage and junction temperature.

AAE271-005 = junction temperature  
AAE737-005 = off-state voltage

IEC 60747-6 (2000)

**AAE743-005 01 X..3 A56**  
simple non-quantitative code

**thyristor function thy function**

Code of the function of a thyristor.

FTO = fast turn off thyristors  
GTO = gate turn off thyristors  
RVB = reverse blocking thyristors

**AAE744-005 02 NR3..3.3ES2 E01**  
level max real measure  
A

**average on-state current  $I_{\text{T(AV)}}$**

The maximum limiting average dc current (in A) flowing from anode to cathode in the on-state of a thyristor during one mains cycle at a specified mounting base temperature.

AAE272-005 = mounting base temperature

IEC 60747-6 (2000)

REMARKS:

One 50 Hz mains cycle = 20 ms. One 60 Hz mains cycle = 16,7 ms.

**AAE745-005 01 NR1..4 E01**  
level max integer measure  
A

**controllable anode current  $I_{\text{TCRM}}$**

The maximum limiting direct anode current (in A) that can be controlled, i.e. interrupted, in the conducting state by reverse biasing of the gate-cathode voltage in a gate turn off thyristor.

**AAE746-005 02 NR3..3.3ES2 T07**  
level max real measure  
s

**fall time** **t<sub>f</sub>**  
time constant t<sub>f</sub>

The maximum time interval (in s) between 90 % of the on-state current and the moment when this current has decreased to 10 %, at specified values of the on-state current, off-state voltage and junction temperature.

AAE271-005 = junction temperature  
AAE733-005 = on-state current  
AAE737-005 = off-state voltage

**AAE747-005 02 NR3 S..3.3ES2 T07**  
level max real measure  
s

**commutated turn-off time** **t<sub>q</sub>**  
t<sub>q</sub>

The maximum time interval (in s) between the instant when the on-state current has decreased to zero after external switching of the anode-cathode voltage and the instant when the specified on-state voltage which the thyristor is capable of supporting without turning on, passes through zero with a specified rate of rise of on-state voltage.

AAE683-005 = temperature type  
AAE684-005 = rate of rise of on-state curr  
AAE685-005 = temperature  
AAE727-005 = rate of rise of off-state volt  
AAE733-005 = on-state current  
AAE737-005 = off-state voltage

IEC 60747-6 (2000)

**AAE748-005 02 NR3 S..3.3ES2 E01**  
level min real measure  
A

**cathode-gate to cathode current** **I<sub>GKT</sub>**  
I<sub>GKT</sub>

The minimum direct cathode-gate to cathode current (in A) that will trigger a tetrode thyristor at specified off-state voltage and junction temperature.

AAE271-005 = junction temperature  
AAE737-005 = off-state voltage

**AAE749-005 02 NR3 S..3.3ES2 E01**  
level min real measure  
A

**anode-gate to anode current** **I<sub>GAT</sub>**  
I<sub>GAT</sub>

The minimum anode-gate to anode current (in A) that will trigger a tetrode thyristor at specified off-state voltage, resistance between cathode-gate and gate, and junction temperature.

AAE271-005 = junction temperature  
AAE737-005 = off-state voltage  
AAE956-005 = resistance

**AAE750-005 02 NR3 S..3.3ES2 E06**  
level min real measure  
V

**cathode-gate trigger voltage** **V<sub>GKT</sub>**  
V<sub>GKT</sub>

The minimum cathode-gate to cathode voltage (in V) that will trigger a tetrode thyristor at a specified off-state voltage and junction temperature.

AAE271-005 = junction temperature  
AAE737-005 = off-state voltage

**AAE751-005 02 NR3 S..3.3ES2 E06**  
level min real measure  
V

**anode-gate to anode voltage** **V<sub>GAT</sub>**  
V<sub>GAT</sub>

The minimum anode-gate to anode voltage (in V) that will trigger a tetrode thyristor at specified off-state voltage and junction temperature.

AAE271-005 = junction temperature  
AAE737-005 = off-state voltage

**AAE752-005 01 NR3..3.3ES2 K01**  
level nom real measure  
kg

**mass** **m**  
m

The nominal mass (in kg) of a component.

**AAE753-005 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**inside diameter** **d<sub>in</sub>**  
d<sub>in</sub>

The value as specified by level (miNoMax) of the inside diameter (in m) of a component with a body of circular cross-section.

**AAE754-005 02 NR1..4 Q56**  
level nom integer measure  
1

**number of terminals** **N<sub>term</sub>**  
number of pins N<sub>term</sub>

The number of electrical terminals of an electric/ electronic or electromechanical component.

**AAE755-005 02 NR3..3.3ES2 E44**  
level min real measure  
Ω

**impedance** **|Z<sub>S</sub>|**  
|Z<sub>S</sub>|

The minimum value of the modulus of impedance (in ohms) of an inductor at specified frequency.

AAE029-005 = frequency

REMARKS:  
Applies to beads threaded on a straight copper wire.

**AAE756-005 02 NR1..4 E44**  
level max integer measure  
dB

**impedance decrease** **dDZ**  
dDZ

The maximum decrease of the modulus of the impedance (in dB), of an inductor, relative to the modulus of impedance at frequency f<sub>1</sub>, over a frequency range between specified frequencies (f<sub>1</sub> and f<sub>2</sub>).

AAE963-005 = frequency f<sub>1</sub>  
AAE964-005 = frequency f<sub>2</sub>

REMARKS:  
Applies to wound six-hole beads.

**AAE758-005 01 NR3..3.3ES2 F03**  
level nom real measure  
Hz

**frequency at Z<sub>max</sub>** **f<sub>Zmax</sub>**  
f<sub>Zmax</sub>

The nominal frequency (in Hz) at which the modulus of impedance of an inductor reaches its maximum value.

REMARKS:  
Applies to wound six-hole beads.

**AAE759-005 01 X..3 A57**  
simple non-quantitative code

**coercivity class** **coercivity cl**

Code of the coercivity class of a magnetic part or magnetic material.

HRD = hard magnetic (high coercivity)  
SFT = soft magnetic (low coercivity)

**AAE760-005 03 NR2..3.3 E36**  
level min real measure  
Ω/m

**resistivity** **\$r<sub>r</sub>**  
ρ<sub>r</sub>

The minimum dc resistivity (in Ω/m) of a magnetic material.

**AAE761-005 01 NR1 S..4 H02**  
level min integer measure  
Cel

**Curie temperature** **T<sub>C</sub>**  
Curie point T<sub>C</sub>

The minimum temperature (in Cel) below which a magnetic material is ferromagnetic or ferrimagnetic and above which it is paramagnetic.

NOTE  
The change of state is not perfectly sharp, so the above definition may not give a value sufficiently defined for practical purposes. To get a more definite value, the graph of the square of the specific saturation magnetisation (i.e. sigma<sup>2</sup>) as a function of temperature should be extrapolated to sigma<sup>2</sup> = 0. The Curie point may then be taken as the point where this extrapolation meets the temperature axis.

IEC 60050(221) (1990)

**AAE762-005 01 M..8 A57**  
simple string

### hard magnetic material grade hard mat grade

Code of the grade of hard magnetic material according to the manufacturer.

#### REMARKS:

The material grade code may be used to refer to the magnetic characteristics of a hard magnetic part.

**AAE764-005 01 M..8 A57**  
simple string

### soft magnetic material grade soft mat grade

Code of the grade of soft magnetic material according to the manufacturer.

#### REMARKS:

The material grade code may be used to refer to the magnetic characteristics of a soft magnetic part.

**AAE765-005 01 M..17 A58**  
simple string

### core size code core size code

Code of the shape and size of the core or core halves of a soft magnetic part.

#### REMARKS:

Code composition:

- E-cores : letter E followed by nominal length/width in mm
- EC-cores : letters EC followed by nominal length in mm
- ETD-cores : letters ETD followed by nominal length in mm
- P-cores : letter P followed by nominal outer diameter/nominal length in mm
- RM-cores : letters RM followed by nominal sidelength of base square in mm
- X-cores : letter X followed by nominal sidelength of base square in mm

Code extension.

Codes may be extended by adding other nominal e.g. height and width.

**AAE766-005 01 M..3 A58**  
simple non-quantitative code

### core shape

### core shape

Code of the shape of a soft magnetic part, or set of parts forming a core.

- E = E-core (half)
- EC = EC-core (half)
- EP = EP-core (set)
- ETD = ETD-core (half)
- H = H-core (set, together with window- or U-core)
- I = I-core (part)
- IMP = impeder
- MHC = multi-hole-core
- P = P-core (set)
- PH = PH-core (half)
- R = ring-core
- RM = square-core (set)
- ROD = rod
- TUB = tube
- U = U-core (half)
- X = X-core (set)
- YKR = yoke-ring

#### REMARKS:

For core halves the effective core parameter DETs AAE770-005, AAE771-005, AAE776-005, AAE777-005, AAE782-005 and AAF283-005 are determined in combination with an identical counterpart for I-cores in combination with a U-core.

**AAE767-005 01 NR1..4 E17**  
simple integer measure A/m

### peak magnetic field strength@H<sub>peak</sub>

The peak magnetic field strength (in A/m) applied to a magnetic material, as a variable.

**AAE768-005 01 NR3..3ES2 E19**  
simple real measure T

### peak flux density @B<sub>peak</sub>

peak magnetic flux density @B<sub>peak</sub>

The peak magnetic flux density (in T) applied to a magnetic material, as a variable.

**AAE769-005 01 NR3..3.ES2 E19**  
level minTypMax real measure  
T

**magnetic flux density B**  
magnetic induction B

The value as specified by level (minTypMax) of the magnetic flux density (in T) of a soft magnetic material at specified frequency, ambient temperature and peak magnetic field strength.

AAE014-005 = ambient temperature  
AAE029-005 = frequency  
AAE768-005 = peak flux density

**AAE770-005 01 NR3..3.ES2 E22**  
level minTypMax real measure  
H

**inductance factor A<sub>L</sub>**  
A<sub>L</sub>

The value as specified by level (minTypMax) of the inductance (in H) of a coil placed on a soft magnetic part, divided by the square of the number of turns, at specified frequency, ambient temperature and peak flux density.

AAE014-005 = ambient temperature  
AAE029-005 = frequency  
AAE768-005 = peak flux density

$$A_L = \frac{L}{N^2}$$

where L is the inductance of the coil when placed on the core and N is the number of turns on the coil.

IEC 60050 (221) (1990)

**AAE771-005 02 NR1..4 E25**  
level minTypMax integer measure  
1

**effective permeability \$m<sub>e</sub>**  
μ<sub>e</sub>

The value as specified by level (minTypMax) of the effective permeability of a soft magnetic part at specified frequency, ambient temperature and peak flux density.

#### NOTE

Applies to non-homogeneous cores, e.g. cores with an air gap.

AAE014-005 = ambient temperature  
AAE029-005 = frequency  
AAE768-005 = peak flux density

IEC 60050 (221) (1990)

**AAE772-005 02 NR1..4 E25**  
level minTypMax integer measure  
1

**initial permeability \$m<sub>i</sub>**  
μ<sub>i</sub>

The value as specified by level (minTypMax) of the limiting value of the amplitude permeability of a soft magnetic material when the magnetic field strength tends to zero.

$$\mu_i = \lim_{H \rightarrow 0} \mu_a$$

IEC 60050 (221) (1990)

**AAE773-005 02 NR1..4 E25**  
level minTypMax integer measure  
1

**amplitude permeability \$m<sub>a</sub>**  
μ<sub>a</sub>

The value as specified by level (minTypMax) of the relative permeability of a soft magnetic material, obtained from the peak value of the flux density and the applied alternating field strength, at specified frequency, ambient temperature and peak magnetic flux density.

#### NOTES

- 1 The peak values apply to the actual waveforms.
- 2 The material is assumed to be in a cyclic magnetic condition.

AAE014-005 = ambient temperature  
AAE029-005 = frequency  
AAE768-005 = peak flux density

$$\mu_a = \frac{1}{\mu_0} \cdot \frac{B_{peak}}{H_{peak}}$$

IEC 60050 (221) (1990)

**AAE775-005 01 NR2..3.3 H07**  
level max real measure  
W

**total power loss P<sub>tot</sub>**  
power loss P<sub>tot</sub>

The maximum total power loss (in W) of a soft magnetic part at specified frequency, ambient temperature and peak flux density.

#### NOTE

The total loss may include: eddy current loss, hysteresis loss, rotational hysteresis loss, residual loss, gyromagnetic resonance loss.

AAE014-005 = ambient temperature  
AAE029-005 = frequency  
AAE768-005 = peak flux density

IEC 60050 (221) (1990)

**AAE776-005 01 NR2..3.3 T03**  
level nom real measure  
m

**effective magnetic path length  $l_e$**

The nominal effective magnetic path length (in m) of a soft magnetic part.

NOTE This is the magnetic path length of a hypothetical equivalent toroidal core of the same material properties.

$$l_e = \frac{C_1^2}{C_2}$$

where  $C_1$  is the core factor  $C_1$  (AAE777-005)

$$\text{and } C_2 = \sum \frac{1}{A^2}$$

IEC 60050 (221) (1990)

**AAE777-005 01 NR2..3.3 T03**  
level nom real measure  
 $m^{-1}$

**core factor  $C_1$   $C_1$**   
core inductance parameter

The nominal value (in  $m^{-1}$ ) of the summation of the quotients of the elements of the magnetic path length over the corresponding cross-sectional areas (in  $m^{-1}$ ) of a soft magnetic part.

$$C_1 = \sum \frac{1}{A}$$

IEC 60050 (221) (1990)

**AAE778-005 01 NR2..3.3 T03**  
level miNoMax real measure  
m

**(air) gap length  $l_{gap}$**   
gap length

The value as specified by level (miNoMax) of the length of the (air) gap (in m) in the magnetic circuit of a soft magnetic part.

**AAE782-005 02 NR3..3.3ES2 T05**  
level nom real measure  
 $m^2$

**effective cross-sectional area  $A_e$**

The nominal effective cross-sectional area (in  $m^2$ ) of a soft magnetic part.

NOTE This is the cross-sectional area of a hypothetical equivalent toroidal core of the same material properties.

$$A_e = \frac{C_1}{C_2}$$

where  $C_1$  is the core factor  $C_1$  (AAE777-005)

$$\text{and } C_2 = \sum \frac{1}{A^2}$$

IEC 60050 (221) (1990)

**AAE785-005 02 M..3 A56**  
simple non-quantitative code

**signal type signal type**

Code of the type of signal applied to an electric, electronic or electromechanical component.

AUD = audio  
B/W = \*\*black and white  
CHR = \*\*\*chrominance  
COL = \*\*colour  
DATA = digital data  
LUM = \*\*\*luminance  
MCH = \*\*monochrome  
MON = \*mono  
SPE = \*speech  
STE = \*stereo  
TV = \*television  
VID = video

**AAE786-005 01 M..8 A56**  
simple non-quantitative code

**mode of operation operation mode**

Code of the mode of operation of a function of an IC.

ASYN = asynchronous  
BID = bidirectional  
DOWN = down  
DUPL = duplex  
PAR = parallel  
SER = serial  
SIMP = simplex  
SYN = synchronous  
UNI = unidirectional  
UP = up



**AAE787-005**    **02**    **M..8**    **A56**  
simple    non-quantitative code

**input/output characteristic I/O char**

Code of the input or output characteristic of a digital IC function.

3-ST    = three-state  
ADDRES    = addressable  
BUF    = buffered  
DARL    = darlington  
I2C    = I2C-bus capability  
INV    = inverting  
LTCH    = latching  
NONINV    = non-inverting  
O-COL    = open collector  
O-DRN    = open drain  
TOTEM    = totem pole  
UNBUF    = unbuffered

**AAE788-005**    **01**    **M..3**    **A56**  
simple    non-quantitative code

**AD function    AD function**

Code identifying an analogue/digital signal function of an IC.

ADC    = analogue-digital converter  
DAC    = digital-analogue converter  
SPS    = speech synthesizer

**AAE789-005**    **03**    **M..3**    **A56**  
simple    non-quantitative code

**periodic/dc function    per/dc function**

Code identifying a periodic or dc function of an IC.

MONO    = \*\*monostable  
MOTDRI    = motor drive  
MPVD    = \*micro power voltage selector  
OSC    = \*oscillator  
PLL    = \*phase locked loop  
POW    = power supply  
PPS    = \*power pack system  
PUL    = \*\*pulse  
REG    = \*regulator  
SAW    = \*\*sawtooth  
SH    = \*\*sample and hold  
SIN    = \*\*sinewave  
SMPS    = \*switch-mode power supply  
SQUARE    = \*\*square wave (multivibrator)  
STA    = \*stabilizer  
TIM    = timing

**AAE790-005**    **04**    **M..8**    **A56**  
simple    non-quantitative code

**CSI functions    CSI functions**

Code of a combinatorial, sequential or interface function of an IC.

ADDER    = \*adder  
ALU    = \*arithmetic logic unit  
AND    = \*AND  
ARITHM    = arithmetic function  
BCD    = \*\*BCD counter  
BDR    = \*bus driver  
BICNT    = \*binary counter  
BIST    = bistable trigger element (flip-flop)  
BUF    = buffer  
BUS    = \*bus communication  
CCONV    = code converter  
CNT    = counter  
COM    = communication  
          (involving a protocol)  
COMP    = comparator  
D    = \*D-type  
DDR    = \*display driver  
DEC    = \*decoder  
DECNT    = \*decade counter  
DEMUX    = \*demultiplexer  
DMAC    = \*\*DMA controller  
DRI    = driver  
DSKC    = \*disk control  
EDC    = \*error detection/correction  
ENC    = \*encoder  
GATE    = gate  
I2C    = \*\*I2C bus  
INTC    = \*interrupt controller  
INV    = \*inverter  
JK    = \*JK-type  
L    = \*latch-type  
LACG    = \*look ahead carry generator  
LAN    = \*\*local area network  
LDR    = \*line driver  
LSH    = level shifter  
MAC    = \*memory access controller  
MM    = \*memory management  
MUX    = \*multiplexer  
NAND    = \*NAND  
NOR    = \*NOR  
OR    = \*OR  
PARCH    = \*parity checker  
REC    = receiver  
RS232    = \*RS232  
SCH    = Schmitt trigger  
SEQ    = sequencer  
SR    = \*set/reset type  
SUBTR    = \*subtractor  
SWITCH    = switch  
TRANS    = transceiver  
UART    = \*UART  
USART    = \*USART  
VME    = \*\*VME bus  
XNOR    = \*exclusive-NOR  
XOR    = \*exclusive-OR

**AAE804-005 01 NR2..3.3 T03**  
level nom real measure  
m

**screen curvature radius r<sub>scr</sub>**  
face-plate radius r<sub>scr</sub>

The nominal radius (in m) of the screen of a display tube at screen centre.

**AAE805-005 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**pixel pitch horizontal p<sub>pix</sub>**  
increment size p<sub>pix</sub>

The nominal horizontal pitch (in m) of the pixels of a colour display tube, determined by the distance between identical phosphor stripes or dots on the screen.

**AAE806-005 02 NR1..4 Q56**  
level min integer measure  
1

**horizontal resolution resolution H**  
resolution H

The minimum number of displayable pixels on the screen of a colour display tube in the horizontal direction.

**AAE816-005 02 M..17 A58**  
simple string

**optoelectronic package opt package**  
envelope

Code of the encapsulation of an optoelectronic device.

**AAE834-005 01 M..175 A62**  
simple string

**component description description**

Description of a component according to the manufacturer.

REMARKS:

Additional to the structured data in other data elements, free text description.

**AAE838-005 01 M..17 A58**  
simple string

**IC package code IC package code**  
envelope code

Code of the package of an IC.

**AAE839-005 01 M..8 A56**  
simple non-quantitative code

**driving method MUX ratio**  
driving mode  
multiplex ratio

Code of addressing the liquid crystal display, i.e. the number of segments (with dot matrix displays, the picture elements or pixels) that are connected together, and is given in a ratio value.

0.086111111 = 64  
0.111111111 = 100  
0.180555556 = 200  
0.208333333 = 240  
01:01 = DD = direct drive  
01:02 = 2  
01:03 = 3  
01:04 = 4  
01:08 = 8  
01:16 = 16  
01:32 = 32

REMARKS:

1. The number of common electrodes or segments per group determines the multiplex ratio. When the number of segments is n and the multiplex ratio is M then the number of connections used is n/M + M against n + 1 for direct drive.

2. Multiplex drive is when several electrodes of the segments and those of the back-planes are connected together.

**AAE840-005 01 M..3 A56**  
simple non-quantitative code

**quality grade quality grade**

Code of the quality grade (determined by the permissible storage temperature range) of a liquid crystal display.

10 = commercial grade =  
from -25 Cel to +70 Cel.  
20 = extended grade =  
from -40 Cel to +90 Cel.

**AAE841-005 01 NR1 S..4 H02**  
level minMax integer measure  
Cel

**storage temperature** **T\_stg**  
T<sub>stg</sub>

The value as specified by level (minMax) of the permissible storage temperature (in Cel) of a component.

**AAE842-005 02 NR2 S..3.3 E06**  
simple real measure  
V

**operating voltage** **@V\_oper**  
drive voltage @V<sub>oper</sub>

The peak-to-peak value of the ac square wave voltage (in V) applied to a liquid crystal display, as a variable.

**AAE843-005 01 NR2 S..3.3 E06**  
level max real measure  
V

**dc voltage component** **V\_dc**  
V<sub>dc</sub>

The maximum limiting value of the dc component (in V) of the voltage of a liquid crystal display.

**AAE844-005 02 NR2 S..3.3 F03**  
level minTypMax real measure  
Hz

**drive frequency** **f\_drv**  
f<sub>drv</sub>

The value as specified by level (minTypMax) of the frequency (in Hz) of the drive ac voltage of a liquid crystal display at a specified driving method.

AAF264-005 = driving method

**AAE845-005 02 NR2 S..3.3 E01**  
level minTypMax real measure  
A/m<sup>2</sup>

**specific current consumption I\_s**  
activated display area current I<sub>s</sub>

The value as specified by level (minTypMax) of the specific current consumption (in A/m<sup>2</sup>) of the activated display area of a liquid crystal display at specified driving method, drive frequency of 32 Hz, typical value of the operating voltage and an ambient temperature of 25 Cel.

AAF264-005 = driving method

**AAE846-005 03 NR3..3.3ES2 T07**  
level minTypMax real measure  
s

**turn-on time** **t\_on**  
t<sub>on</sub>

The value as specified by level (minTypMax) of the time (in s) elapsing between the start (10 %) of the input pulse train and the moment the corresponding luminance is 90 % of its maximum value, of a liquid crystal display at specified driving method, typical operating voltage, drive frequency of 32 Hz and a specified ambient temperature.

AAE014-005 = ambient temperature  
AAF264-005 = driving method

REMARKS:

t<sub>on</sub> is the time elapsing between the start of the input pulse train and the moment when the corresponding luminance is 90 % of its maximum value.  
t<sub>on</sub> is also the sum of t<sub>d</sub>, or t<sub>d(on)</sub>, and t<sub>r</sub> (t<sub>d</sub> being the delay time and t<sub>r</sub> being the rise time).

**AAE847-005 03 NR3..3.3ES2 T07**  
level minTypMax real measure  
s

**turn-off time** **t\_off**  
t<sub>off</sub>

The value as specified by level (minTypMax) of the time (in s) elapsing between the end (90 %) of the input pulse train and the moment the corresponding luminance has dropped to 10 % of its maximum value, of a liquid crystal display at a specified driving method, typical operating voltage, drive frequency of 32 Hz and a specified ambient temperature.

AAE014-005 = ambient temperature  
AAF264-005 = driving method

REMARKS:

t<sub>off</sub> is the time elapsing between the end of the input pulse train and the moment when the corresponding luminance has dropped to 10 % of its maximum value.

t<sub>off</sub> is also the sum of t<sub>s</sub>, or t<sub>d(off)</sub>, and t<sub>f</sub> (t<sub>s</sub> being the storage time and t<sub>f</sub> being the fall time).

|                      |                   |            |                      |                    |            |
|----------------------|-------------------|------------|----------------------|--------------------|------------|
| <b>AAE848-005 04</b> | <b>NR2..3.3</b>   | <b>L32</b> | <b>AAE851-005 01</b> | <b>NR3..3.3ES2</b> | <b>T03</b> |
| level min            | real measure<br>1 |            | level nom            | real measure<br>m  |            |

**contrast ratio**  
brightness contrast ratio  
luminance contrast ratio

**CNR**  
CNR  
L<sub>ctr</sub>

The minimum guaranteed value of the maximum obtainable ratio between the brightness of the light areas to the brightness of the dark areas of a liquid crystal display at specified values of the operating voltage, ambient temperature and viewing angle.

AAE014-005 = ambient temperature  
AAE842-005 = operating voltage  
AAE993-005 = viewing angle

**REMARKS:**

The ratio is always a value greater than one. This means that, for a negative image mode, it is the ratio of the brightness of an addressed display zone to the brightness of a non-addressed zone and, for a positive image mode, it is the ratio of the brightness of the non-addressed zone to that of the addressed zone.

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAE849-005 01</b> | <b>M..3</b>           | <b>A58</b> |
| simple               | non-quantitative code |            |

**display construction**  
layout construction

**display constr**

Code denoting the layout and construction of a liquid crystal display.

A = alphanumeric  
B = multifunctional  
D = segment  
G = dot-matrix display  
M = segments  
N = alphanumeric display  
P = multifunctional display  
R = segment display  
S = alphanumeric display  
T = dot-matrix display  
U = multifunctional display  
V = multifunctional display  
W = dot-matrix display  
Z = shutter

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAE850-005 01</b> | <b>NR3..3.3ES2</b> | <b>T03</b> |
| level nom            | real measure<br>m  |            |

**character length**

**l\_char**  
l<sub>char</sub>

The nominal length (in m) of a character of a liquid crystal display module.

**REMARKS:**

The length is measured in the horizontal direction.

**character height**

**h\_char**  
h<sub>char</sub>

The nominal height (in m) of a character of a liquid crystal display module.

**REMARKS:**

The height is measured in the vertical direction.

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAE852-005 01</b> | <b>NR3..3.3ES2</b> | <b>T03</b> |
| level nom            | real measure<br>m  |            |

**dot length**

**l\_dot**  
l<sub>dot</sub>

The nominal length (in m) of a dot of a liquid crystal display module.

**REMARKS:**

The length is measured in the horizontal direction.

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAE853-005 01</b> | <b>NR3..3.3ES2</b> | <b>T03</b> |
| level nom            | real measure<br>m  |            |

**dot height**

**h\_dot**  
h<sub>dot</sub>

The nominal height (in m) of a dot of a liquid crystal display module.

**REMARKS:**

The height is measured in the vertical direction.

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAE854-005 01</b> | <b>NR3..3.3ES2</b> | <b>T03</b> |
| level miNoMax        | real measure<br>m  |            |

**viewing area length**

**l\_view**  
l<sub>view</sub>

The value as specified by level (miNoMax) of the length (in m) of the viewing area of a liquid crystal display module.

**REMARKS:**

The length is measured in the horizontal direction.

**AAE855-005 01 NR3..3.ES2 T03**  
level miNoMax real measure  
m

**viewing area height** **h\_view**  
h<sub>view</sub>

The value as specified by level (miNoMax) of the height (in m) of the viewing area of a liquid crystal display module.

REMARKS:  
The height is measured in the vertical direction.

**AAE856-005 01 M..3 A58**  
simple non-quantitative code

**illumination mode** **illum mode**  
lighting mode

Code of the illumination and image mode of a liquid crystal display.

F = transflective, positive  
G = transflective, negative  
R = reflective, positive  
S = reflective, negative  
T = transmissive, positive  
U = transmissive, negative

REMARKS:  
The mode in which the relevant data are made visible, viz:  
Reflective: ambient light reflected by a diffuse reflector in the LCD.  
Transmissive: display lit from behind by an artificial light source.  
Transflective: combination of both above.  
Positive: image is black and remaining display area is grey when ON.  
Negative: image is grey and remaining display area is black when ON.

**AAE857-005 01 NR1..4 K02**  
level minMax integer measure  
%

**operating humidity** **RH\_amb**  
RH<sub>amb</sub>

The value as specified by level (minMax) of the ambient humidity (in %) relative to saturation humidity of a humidity sensor.

ISO 9346 (1987)

**AAE858-005 01 NR1..4 K02**  
level minMax integer measure  
%

**storage humidity** **RH\_stg**  
RH<sub>stg</sub>

The value as specified by level (minMax) of the storage ambient humidity (in %) relative to saturation humidity of a humidity sensor.

ISO 9346 (1987)

**AAE859-005 01 NR1..4 K02**  
simple integer measure  
%

**relative humidity** **@RH**  
@RH

The ambient humidity (in %) relative to saturation humidity applied to a humidity sensor, as a variable.

NOTES  
1 relative humidity: Actual humidity by volume, divided by humidity by volume at saturation, at the same temperature  
2 humidity by volume: Mass of water vapour divided by the volume of the gaseous mixture.

ISO 9346 (1987)

**AAE860-005 01 NR3..3.ES2 E09**  
level nom real measure  
F

**reference capacitance** **C\_ref**  
C<sub>ref</sub>

The nominal capacitance (in F) of a capacitive humidity sensor at reference conditions.

NOTE  
Reference conditions are:  
T<sub>amb</sub> = 25 Cel  
RH<sub>amb</sub> = 43 %  
Frequency = 100 kHz

**AAE861-005 02 NR3..3.ES2 E09**  
level miNoMax real measure  
F

**sensitivity** **s\_H**  
s<sub>H</sub>

The value as specified by level (miNoMax) of the ratio of capacitance change and ambient relative humidity change (in F/%) in a range between specified relative humidities (RH<sub>1</sub> and RH<sub>2</sub>).

AAE953-005 = relative humidity RH\_2  
AAE954-005 = relative humidity RH\_1

**AAE862-005 02 NR2..3.3 E06**  
level nom real measure  
(V/V)/(A/m)

**open-circuit sensitivity  $s_{open}$**   
 $s_{open}$

The nominal value of the ratio of 1) the output voltage and 2) the product of the supply voltage and magnetic field in (V/V)/(A/m) of a semiconductor magnetic field sensor at specified ambient temperature.

AAE014-005 = ambient temperature

REMARKS:  
Sensitivity of a magnetic field sensor at specified ambient temperature and expressed in (V/V)/(A/m)

**AAE863-005 01 NR2 S..3.3 E17**  
level minMax real measure  
A/m

**magnetic field strength  $H$**   
 $H$

The value as specified by level (minMax) of the magnetic field strength (in A/m) of a magnetic field sensor.

**AAE864-005 02 M..3 A56**  
simple non-quantitative code

**pressure mode pressure mode**  
application mode

Abbreviation of the application mode of a semiconductor pressure sensor.

ABS = absolute  
REL = relative; pos/neg with respect to atmospheric pressure

**AAE865-005 01 NR2..3.3 E06**  
level nom real measure  
V/(V\*Pa)

**sensitivity  $s_s$**   
 $s_s$

The nominal value of the ratio of 1) output voltage and 2) product of supply voltage and the pressure in V/(V\*Pa) of a semiconductor pressure sensor at specified ambient temperature.

AAE014-005 = ambient temperature

**AAE866-005 02 NR2 S..3.3 K15**  
level minMax real measure  
Pa

**operating pressure  $P_{oper}$**   
 $P_{oper}$

The value as specified by level (minMax) of the pressure (in Pa) of a pressure sensor.

**AAE867-005 01 NR2 S..3.3 E01**  
level max real measure  
A

**output current  $I_{open}$**   
 $I_{open}$

The maximum dc output current (in A) of a semiconductor inductive proximity sensor at specified supply voltage.

AAE102-005 = supply voltage

**AAE868-005 01 NR1 S..4 H02**  
level minTypMax integer measure  
Cel

**substrate temperature  $T_s$**   
 $T_s$

The value as specified by level (minTypMax) of the temperature (in Cel) of the substrate of an inductive proximity sensor.

**AAE869-005 02 NR1..4 T03**  
level minMax integer measure  
%

**hysteresis in switching distance  $H$**   
differential travel  $H$   
travel in switching distance

The value as specified by level (minMax) of the hysteresis (in %) of the switching distance of an inductive proximity sensor at specified supply voltage and ambient temperature.

AAE014-005 = ambient temperature  
AAE102-005 = supply voltage

**AAE870-005 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**substrate length  $L_s$**   
 $L_s$

The nominal total length (in m) of the substrate of an hybrid inductive proximity sensor.



**AAE871-005 01** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**substrate width** **W<sub>s</sub>**  
W<sub>s</sub>

The nominal total width (in m) of the substrate of an hybrid inductive proximity detector.

**AAE872-005 02** **NR1..4** **F03**  
level max integer measure  
Hz

**operating frequency** **f<sub>sw</sub>**  
switching frequency f<sub>sw</sub>

The maximum switching frequency (in Hz) of the input current, caused by an actuator that causes a switch-over at the output side of a hybrid inductive proximity sensor.

**AAE874-005 01** **NR1..4** **E33**  
level nom integer measure  
Ω

**reference resistance** **R<sub>Tref</sub>**  
R<sub>Tref</sub>

The nominal resistance (in ohms) of a semiconductor temperature sensor at a specified sensor current at the reference temperature.

AAE945-005 = current (dc)

REMARKS:

Some sensors are polarity independent.

**AAE875-005 03** **NR2..3.3** **E33**  
level nom real measure  
1

**resistance ratio** **R<sub>Tamb</sub>/R<sub>Tref</sub>**  
R<sub>Tamb</sub>/R<sub>Tref</sub>  
R<sub>Tamb</sub>/R<sub>Tref</sub>

The nominal value of the ratio of the ohmic resistances of a temperature sensor at specified ambient temperature and its resistance at the reference temperature.

AAE014-005 = ambient temperature

**AAE876-005 01** **NR2 S..3.3** **H02**  
level nom real measure  
%/K

**temperature coefficient** **TC**  
TC

The nominal reversible variation (in %/K) in the nominal resistance of a temperature sensor at reference temperature and specified sensor current.

AAE945-005 = current (dc)

**AAE877-005 01** **M..3** **A51**  
simple non-quantitative code

**working principle** **work principle**

Code of the working principle of a delay line.

EL = electric  
PE = piezoelectric

**AAE878-006 02** **M..8** **A51**  
simple non-quantitative code

**delay line type** **delay line type**

Code of the type of a delay line.

ACT = active  
CAB = cable  
IC = integrated circuit  
PAS = passive  
SAW = surface acoustic-wave  
ULTRA = ultrasonic

**AAE879-005 01** **NR3..3.3ES2** **E06**  
level max real measure  
dB

**spurious signal level (3-tau)** **L<sub>3T</sub>**  
L<sub>3T</sub>

The maximum level (in dB) of the spurious signal at the output terminals of a delay line measured at three times the delay time (tau) and relative to the one tau signal at the output terminals at the nominal frequency and at specified reference conditions.

NOTE Reflections are measured using a 5 us long input burst signal.

AAE995-005 = reference conditions

REMARKS:

The one tau signal is the first burst appearing at the output terminals of a delay line at nominal delay with respect to the input signal.

**AAE880-005 02 NR3 S..3.3ES2 E06**  
level max real measure  
dB

**spurious signal level** **L\_sig**  
L<sub>sig</sub>

The maximum level (in dB) of the spurious signal at the output terminals of a delay line measured at five and more times the delay time ( $\tau$ ) relative to the one  $\tau$  signal at the nominal frequency and at specified reference conditions.

**NOTE**

Reflections are measured using a 5 us long input burst signal.

AAE995-005 = reference conditions

**REMARKS:**

The one  $\tau$  signal is the first burst appearing at the output terminals of a delay line at the nominal delay with respect to the input signal.

**AAE885-005 02 NR3..3.3ES2 E43**  
level nom real measure  
deg

**phase relation** **\$f**  
phi

The nominal phase difference (in deg) of the output signal to the input signal of a delay line.

**AAE886-005 02 NR3..3.3ES2 T07**  
level max real measure  
s

**phase delay drift** **t\_drft**  
t<sub>drft</sub>

The maximum phase delay drift (in s) of a delay line relative to the phase delay time at 25 Cel over the operating temperature range.

**AAE887-005 02 NR1 S..4 E49**  
level miNoMax integer measure  
dB

**insertion loss** **insertion loss**  
insertion gain  
transducer attenuation

The value as specified by level (miNoMax) of the insertion loss (in dB) of a delay line.

IEC 60050 (702) (1992)

**REMARKS:**

Insertion loss

The ratio, generally expressed in decibels, of the power at a point in a transmission path to the power at the same point after insertion of a two-port electrical network into the transmission path ahead of this point.

**NOTE**

If the ratio defining the insertion loss is less than one, its decibel value is negative, and its converse or opposite decibel value called 'insertion gain' may be used.

**AAE888-005 01 NR3..3.3ES2 E06**  
level minMax real measure  
dB

**spurious signal level (2-tau) spur 2\$t**  
spur 2 $\tau$

The value as specified by level (minMax) of the spurious signal at the output terminals of a comb filter at twice the delay time ( $\tau$ ) and relative to one  $\tau$  signal at the output terminals at the nominal frequency and at specified reference conditions.

**NOTE**

Reflections are measured using a 5 us long input burst signal.

AAE995-005 = reference conditions

**REMARKS:**

Bypassed delay line (used as comb filter).

**AAE891-005 02 NR1 S..4 H02**  
level minMax integer measure  
Cel

**ambient temperature** **T\_amb**  
category temperature T<sub>amb</sub>  
T<sub>a</sub>

The value as specified by level (minMax) of the ambient temperature (in Cel) of a component.

|                      |                       |            |                      |                      |            |
|----------------------|-----------------------|------------|----------------------|----------------------|------------|
| <b>AAE892-005 01</b> | <b>X..3</b>           | <b>A56</b> | <b>AAE897-005 02</b> | <b>NR3 S..3.3ES2</b> | <b>E01</b> |
| simple               | non-quantitative code |            | level max            | real measure         |            |

# **sensor input quantity input quantity**

Code of the physical quantity which a sensor converts into an electric signal.

HUM = relative humidity  
LGT = light  
MGN = magnetic field strength  
NCL = nuclear  
PRS = pressure  
PRX = proximity  
TMP = temperature

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAE893-005 01</b> | <b>M..3</b>           | <b>A56</b> |
| simple               | non-quantitative code |            |

# **sensor working principle work principle**

Code of the principle of working of a sensor.

CAP = capacitive  
IND = inductive  
MR = magnetoresistive  
SEM = semiconductor  
TUB = electron tube

|                      |                      |            |
|----------------------|----------------------|------------|
| <b>AAE895-005 01</b> | <b>NR3 S..3.3ES2</b> | <b>E01</b> |
| simple               | real measure         |            |

# **input current**

@I<sub>in</sub>  
@I<sub>in</sub>

The dc input current (in A) of an IC, as a variable.

|                      |                      |            |
|----------------------|----------------------|------------|
| <b>AAE896-005 02</b> | <b>NR3 S..3.3ES2</b> | <b>E01</b> |
| level max            | real measure         |            |

# **quiescent current**

quiescent supply current I<sub>q</sub>  
I<sub>CC</sub>  
I<sub>DD</sub>

The maximum guaranteed total quiescent dc supply current (in A) of a CMOS or HCMOS digital IC, at specified supply voltage, zero output current and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

# **REMARKS:**

Total quiescent supply current per package.  
All inputs must either be at zero (GND/V<sub>SS</sub>) or at supply voltage level (V<sub>CC</sub>/V<sub>DD</sub>).

# **additional quiescent current \$DI\_CC**

additional q-supply current Δ I<sub>CC</sub>  
delta I<sub>CC</sub> per input AQSC

The maximum guaranteed additional quiescent dc supply current (in A) per input, of an HCMOS IC, at specified supply voltage, zero output current and a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

# **REMARKS:**

Applies to a sub-category of HCMOS circuits with TTL compatible inputs.  
Except for the relevant input, to which a voltage of V<sub>CC</sub> – 2.1 V (V<sub>OH</sub> for TTL) must be applied, all other inputs must be either be at zero (GND/V<sub>SS</sub>) or at supply voltage level (V<sub>CC</sub>).

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAE898-005 01</b> | <b>NR3..3.3ES2</b> | <b>E09</b> |
| level minTypMax      | real measure       |            |

# **input capacitance**

C<sub>in</sub>  
C<sub>in</sub>

The value as specified by level (minTypMax) of the capacitance (in F) at the input of an IC.

|                      |                      |            |
|----------------------|----------------------|------------|
| <b>AAE899-005 01</b> | <b>NR3 S..3.3ES2</b> | <b>E01</b> |
| level max            | real measure         |            |

# **HIGH-state input current I<sub>IH</sub>**

HIGH-level input current I<sub>IH</sub>

The maximum guaranteed HIGH-state dc input current (in A), of a TTL digital function of an IC, at the maximum supply voltage and specified input voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE224-005 = input voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

**AAE900-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A

### LOW-state input current $I_{IL}$

LOW-level input current  $I_{IL}$

The maximum guaranteed LOW-state dc input current (in A), of a TTL digital function of an IC, at the maximum supply voltage, specified input voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE224-005 = input voltage

AAE958-005 = temperature  $T_1$

AAE959-005 = temperature  $T_2$

**AAE901-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A

### HIGH-state supply current $I_{CCH}$

supply current  $I_{CCH}$

The maximum guaranteed total HIGH-state dc supply current (in A), of a TTL digital IC, at the maximum supply voltage.

#### REMARKS:

Total HIGH-state supply current per package.

Appropriate input signals ( $V_{IH}$  and/or  $V_{IL}$ ) must be applied to obtain a HIGH-state at all outputs.

**AAE902-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A

### LOW-state supply current $I_{CCL}$

supply current  $I_{CCL}$

The maximum guaranteed total LOW-state dc supply current (in A) of a TTL digital IC at the maximum supply voltage

#### REMARKS:

Total LOW-state supply current per package.

Appropriate input signals ( $V_{IH}$  and/or  $V_{IL}$ ) must be applied to obtain a LOW-state at all outputs.

**AAE903-005 02 NR3 S..3.3ES2 E01**  
level max real measure  
A

### off-state supply current $I_{CCZ}$

supply current  $I_{CCZ}$

The maximum guaranteed total off-state dc supply current (in A), of a 3-state TTL digital IC, at the maximum supply voltage and in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE958-005 = temperature  $T_1$

AAE959-005 = temperature  $T_2$

#### REMARKS:

Total off-state supply current per package.

Appropriate disabling signals must be applied to the relevant inputs.

**AAE904-005 02 NR3..3.3ES2 T07**  
simple real measure  
s

### fall time

@ $t_f$   
@ $t_r$

The fall time (in s) of a step function change (90 % to 10 %) of a signal applied to an electric-electronic or electromechanical component, as a variable.

**AAE905-005 01 NR3..3.3ES2 H07**  
level min real measure  
W/K

### dissipation derating factor $P_{der}$

$P_{der}$

The minimum required power dissipation derating factor (in W/K) of an electric-electronic or electromechanical component, at ambient temperatures higher than the rated temperature.

**AAE906-005 01 NR3..3.3ES2 E33**  
simple real measure  
 $\Omega$

### base-emitter resistance @ $R_{BE}$

@ $R_{BE}$

The resistance (in ohms) connected between base and emitter terminals of a bipolar transistor, as a variable.

|                                                                                                                               |                                         |            |                                                                                                              |                                         |            |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|
| <b>AAE907-005 01</b><br>simple                                                                                                | <b>M..3</b><br>non-quantitative code    | <b>A52</b> | <b>AAE918-005 01</b><br>level max                                                                            | <b>NR3..3.3ES2</b><br>real measure<br>F | <b>E09</b> |
| <b>stability</b>                                                                                                              | <b>stability</b>                        |            | <b>coil-contact capacitance</b> <b>C<sub>cl(cont)</sub></b><br>C <sub>cl(cont)</sub>                         |                                         |            |
| Code of the condition of a relay after the energising quantity is removed.                                                    |                                         |            | The maximum parasitic capacitance (in F) between a contact member and the coil of a relay.                   |                                         |            |
| BIS = bistable<br>MON = monostable                                                                                            |                                         |            |                                                                                                              |                                         |            |
| <b>AAE911-005 01</b><br>level nom                                                                                             | <b>NR3..3.3ES2</b><br>real measure<br>A | <b>E01</b> | <b>AAE919-005 01</b><br>level max                                                                            | <b>NR3..3.3ES2</b><br>real measure<br>F | <b>E09</b> |
| <b>energising current (dc)</b> <b>I<sub>in(dc)</sub></b><br>I <sub>in(dc)</sub>                                               |                                         |            | <b>contact capacitance</b> <b>C<sub>cont</sub></b><br>C <sub>cont</sub>                                      |                                         |            |
| The nominal dc current (in A) which, when applied to the coil of a relay, enables it to operate at the reference temperature. |                                         |            | The maximum parasitic capacitance (in F) between two contact members of a relay.                             |                                         |            |
| IEC 61810-1 (1998)                                                                                                            |                                         |            | <b>AAE920-005 02</b><br>level max                                                                            | <b>NR3..3.3ES2</b><br>real measure<br>Ω | <b>E33</b> |
| <b>AAE912-005 01</b><br>level nom                                                                                             | <b>NR3..3.3ES2</b><br>real measure<br>A | <b>E01</b> | <b>contact resistance</b> <b>R<sub>cont</sub></b><br>contact-circuit resistance R <sub>cont</sub>            |                                         |            |
| <b>energising current (ac)</b> <b>I<sub>in(ac)</sub></b><br>I <sub>in(ac)</sub>                                               |                                         |            | The maximum resistance (in ohms) of a mated set of contacts of a connector, relay or switch.                 |                                         |            |
| The nominal ac current (in A) which, when applied to the coil of a relay, enables it to operate at the reference temperature. |                                         |            | NOTE<br>Measuring procedure according to IEC 61810-7 (1997)                                                  |                                         |            |
| IEC 61810-1 (1998)                                                                                                            |                                         |            | IEC 60050 (581) (1978)                                                                                       |                                         |            |
| <b>AAE915-005 01</b><br>level nom                                                                                             | <b>NR3..3.3ES2</b><br>real measure<br>V | <b>E06</b> | <b>AAE921-005 02</b><br>level nom                                                                            | <b>NR1..4</b><br>integer measure<br>1   | <b>Q56</b> |
| <b>energising voltage (dc)</b> <b>U<sub>in(dc)</sub></b><br>U <sub>in(dc)</sub>                                               |                                         |            | <b>number of contact assemblies</b> <b>N<sub>cont(assy)</sub></b><br>number of poles N <sub>cont(assy)</sub> |                                         |            |
| The nominal dc voltage (in V) which, when applied to the coil of a relay, enables it to operate.                              |                                         |            | The number of contact assemblies of a relay or switch.                                                       |                                         |            |
| IEC 61810-1 (1998)                                                                                                            |                                         |            | <b>AAE922-005 03</b><br>level min                                                                            | <b>NR3..3.3ES2</b><br>real measure<br>1 | <b>Q59</b> |
| <b>AAE916-005 01</b><br>level nom                                                                                             | <b>NR3..3.3ES2</b><br>real measure<br>V | <b>E06</b> | <b>mechanical life</b> <b>N<sub>cycl</sub></b><br>N <sub>cycl</sub>                                          |                                         |            |
| <b>energising voltage (ac)</b> <b>U<sub>in(ac)</sub></b><br>U <sub>in(ac)</sub>                                               |                                         |            | The minimum guaranteed number of operating cycles of a relay or switch without electric load.                |                                         |            |
| The nominal ac voltage (in V) which, when applied to the coil of a relay, enables it to operate.                              |                                         |            | NOTE<br>After the test the contact resistance shall be within its tolerance.                                 |                                         |            |
| IEC 61810-1 (1998)                                                                                                            |                                         |            |                                                                                                              |                                         |            |

**AAE923-005 02 NR3..3.3ES2 T07**  
level max real measure  
s

**operate time** **t\_oper**  
t<sub>oper</sub>

The maximum time (in s) between the instant the energising power is applied and the instant the relay completes the specified function.

IEC 61810-1-00 (1998)

**AAE924-005 02 NR1 S..4 T07**  
level max integer measure  
s

**release time** **t\_rel**  
t<sub>rel</sub>

The maximum time (in s) between the instant the energising quantity is applied and the instant when the relay resets.

IEC 61810-7 (1997)

**REMARKS:**

A relay releases when it changes from its operate condition to its release condition.

**AAE925-005 01 M..8 A56**  
simple non-quantitative code

**contact member force** **contact force**

Code of the kind of force applied to the contact member of a relay.

EM = electromechanical relay  
REED = reed (magnetic)  
THER = thermal electrical relay

**AAE926-005 01 X..3 A56**  
simple non-quantitative code

**actuating quantity** **actuating qnty**

Code of the actuating quantity of a switch.

MEC = mechanical switch  
REE = reed switch  
THE = thermostatic switch

**AAE928-005 02 NR2..3.3 E49**  
level max real measure  
VA

**contact power (ac)** **P\_cont(ac)**  
P<sub>cont(ac)</sub>

The maximum switching apparent power (in VA) as a product of the actual ac contact voltage and the actual ac contact current applied in combination to a switch or relay at resistive load.

**REMARKS:**

The apparent power is less than the product of contact current and contact voltage.

**AAE929-005 02 NR1..4 Q56**  
level nom integer measure  
1

**number of stable positions** **N\_stab**  
stable positions N<sub>stab</sub>

The number of stable positions of a switch.

**AAE930-005 02 NR1 S..4 T07**  
level max integer measure  
s

**bounce time** **t\_bnc**  
t<sub>bnc</sub>

The maximum time interval (in s) between the instant when the contact circuit first closes (opens) and the instant when the circuit is finally closed (opened) of a relay or switch.

IEC 60050 (446) (1983)

**AAE931-006 01 M..8 A56**  
simple non-quantitative code

**switch actuation** **actuation**

Code of the actuator of a mechanical switch.

CORD = cord-operated  
LEVER = lever/toggle  
MEM = membrane  
PULL = push-pull  
PUSH = push-button  
ROCKER = rocker button  
ROTARY = rotary  
SLIDE = slide  
TUMBLE = tumbler



|                                                                                                                                                                         |                                                |            |                                                                                                                                                                                                                            |                                                      |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------|
| <b>AAE932-005 02</b><br>level nom                                                                                                                                       | <b>NR2..3.3</b><br>real measure<br>N           | <b>K09</b> | <b>AAE937-005 01</b><br>simple                                                                                                                                                                                             | <b>NR3..3.3ES2</b><br>real measure<br>m              | <b>T03</b> |
| <b>actuating force</b>                                                                                                                                                  | <b>F<sub>act</sub></b><br>F <sub>act</sub>     |            | <b>tie-point distance</b>                                                                                                                                                                                                  | <b>@s<sub>tp-body</sub></b><br>@s <sub>tp-body</sub> |            |
| The operating nominal force (in N) on the actuator of a mechanical switch to cause it to change position.<br><br>IEC 60050 (581) 1978)                                  |                                                |            | The distance (in m) measured along the leads from tie point to the body of a diode, as a variable.                                                                                                                         |                                                      |            |
| <b>AAE933-005 01</b><br>simple                                                                                                                                          | <b>NR3..3.3ES2</b><br>real measure<br>A        | <b>E01</b> | <b>AAE938-005 02</b><br>simple                                                                                                                                                                                             | <b>NR2..3.3</b><br>real measure<br>Ω                 | <b>E44</b> |
| <b>current (ac)</b>                                                                                                                                                     | <b>@I<sub>ac</sub></b><br>@I <sub>ac</sub>     |            | <b>load impedance</b>                                                                                                                                                                                                      | <b>@ Z<sub>L</sub> </b><br>@ Z <sub>L</sub>          |            |
| The rms sinusoidal current (in A) applied to an electric-electronic or electromechanical component, as a variable.                                                      |                                                |            | The modulus of the complex impedance (in ohms) of a load connected to the output of an electric-electronic or electromechanical component, as a variable.                                                                  |                                                      |            |
| <b>AAE934-005 01</b><br>simple                                                                                                                                          | <b>NR3..3.3ES2</b><br>real measure<br>Hz       | <b>F03</b> | <b>AAE940-005 02</b><br>level nom                                                                                                                                                                                          | <b>NR1..4</b><br>integer measure<br>1                | <b>Q56</b> |
| <b>bandwidth</b>                                                                                                                                                        | <b>@B</b><br>@B                                |            | <b>number of cells in series</b>                                                                                                                                                                                           | <b>N<sub>cell</sub></b><br>N <sub>cell</sub>         |            |
| The range of frequencies (in Hz) applied to a electric/ electronic or electromechanical component, as a variable.<br><br>REMARKS:<br>See also AAE963-005 AND AAE964-005 |                                                |            | The actual number of cells in the series of a battery.                                                                                                                                                                     |                                                      |            |
| <b>AAE935-005 01</b><br>simple                                                                                                                                          | <b>NR3..3.3ES2</b><br>real measure<br>Hz       | <b>F03</b> | <b>AAE941-005 02</b><br>level max                                                                                                                                                                                          | <b>NR2..3.3</b><br>real measure<br>V                 | <b>E06</b> |
| <b>chopping frequency</b>                                                                                                                                               | <b>@f<sub>chop</sub></b><br>@f <sub>chop</sub> |            | <b>voltage during charge</b>                                                                                                                                                                                               | <b>V<sub>chrg</sub></b><br>V <sub>chrg</sub>         |            |
| The number of interruptions (in Hz) of a light beam at regular intervals, applied to an optoelectronic device, as a variable.                                           |                                                |            | The maximum voltage (in V) of a secondary battery during charge with a constant current of 0,1 times the value of the nominal capacity.<br><br>IEC 60050 (482) (2004)                                                      |                                                      |            |
| <b>AAE936-005 02</b><br>simple                                                                                                                                          | <b>NR2..3.3</b><br>real measure<br>Ω           | <b>E44</b> | <b>AAE942-005 02</b><br>level min                                                                                                                                                                                          | <b>NR3..3.3ES2</b><br>real measure<br>d              | <b>T07</b> |
| <b>source impedance</b>                                                                                                                                                 | <b>@ Z<sub>S</sub> </b><br>@ Z <sub>S</sub>    |            | <b>storage life shelf life</b>                                                                                                                                                                                             | <b>t<sub>stg</sub></b><br>t <sub>stg</sub>           |            |
| The modulus of the complex impedance (in ohms) of a source connected to the input of an electric-electronic or electromechanical component, as a variable.              |                                                |            | The minimum duration of storage (in d) at specified ambient temperature at the end of which a cell or battery retains 80 % of its original capacity.<br><br>AAE014-005 = ambient temperature<br><br>IEC 60050 (482) (2004) |                                                      |            |

**AAE943-005 03 NR3..3.3ES2 T07**  
level minMax  
s real measure

**charge time** **t\_chrg**  
t<sub>chrg</sub>

The value as specified by level (minMax) of the time (in s) after which a discharged secondary battery attains the fully charged state at specified ambient temperature and at specified direct current.

AAE014-005 = ambient temperature  
AAE945-005 = current (dc)

IEC 60050 (482) (2004) derived

**AAE944-005 02 NR1..4 Q56**  
level max integer measure  
1

**number of charge cycles** **N\_chrg**  
cycle life N<sub>chrg</sub>

The maximum number of charge/discharge cycles at the end of which the secondary battery retains 80 % of its nominal capacity at specified duration.

AAE028-005 = duration

**AAE945-005 01 NR3..3.3ES2 E01**  
simple real measure  
A

**current (dc)** **@I\_dc**  
@I<sub>dc</sub>

The direct current (in A) applied to an electric, electronic or electromechanical component, as a variable.

**AAE952-005 02 NR1..4 E01**  
simple integer measure  
1

**dc current gain sat** **@h\_FEsat**  
forced gain @h<sub>FEsat</sub>

The dc current gain in the saturation condition of a bipolar transistor, as a variable.

**AAE953-005 01 NR1..4 K02**  
simple integer measure  
%

**relative humidity RH\_2** **@RH\_2**  
@RH<sub>2</sub>

The upper relative humidity RH<sub>2</sub> of the humidity range applied to a humidity sensor, as a variable.

**AAE954-005 01 NR1..4 K02**  
simple integer measure  
%

**relative humidity RH\_1** **@RH\_1**  
@RH<sub>1</sub>

The lower relative humidity RH<sub>1</sub> of the humidity range applied to a humidity sensor, as a variable.

**AAE955-005 03 NR2..3.3 E49**  
simple real measure  
W

**output power** **@P\_L**  
load power @P<sub>L</sub>

The output power (in W) of an electric-electronic or electromechanical component, as a variable.

IEC 60050 (713) (1998)

**AAE956-005 01 NR3..3.3ES2 E33**  
simple real measure  
Ω

**resistance** **@R**  
@R

The resistance (in ohms) applied to the terminals of an electric-electronic component, as a variable.

**AAE957-005 01 NR3..3.3ES2 E09**  
simple real measure  
F

**capacitance** **@C**  
@C

A value of a capacitance (in F) applied to the terminals of an electric, electronic or electromechanical component, as a variable.

**AAE958-005 01** **NR1 S..4** **H02**  
simple integer measure  
Cel

**temperature T<sub>1</sub>** **@T<sub>1</sub>**  
**@T<sub>1</sub>**

The lower temperature T<sub>1</sub> (in Cel) of the temperature range applied to a component, as a variable.

REMARKS:

See AAE959-005 for upper temperature T<sub>2</sub>. If T<sub>2</sub> is left blank the upper limit of the range is determined by the maximum operating temperature. Equal values of T<sub>1</sub> and T<sub>2</sub> may be used to indicate a single specific temperature.

**AAE959-005 01** **NR1 S..4** **H02**  
simple integer measure  
Cel

**temperature T<sub>2</sub>** **@T<sub>2</sub>**  
**@T<sub>2</sub>**

The upper temperature T<sub>2</sub> (in Cel) of the temperature range applied to a component, as a variable.

REMARKS:

See AAE958-005 for lower temperature T<sub>1</sub>. If T<sub>1</sub> is left blank the lower limit of the range is determined by the minimum operating temperature. Equal values of T<sub>1</sub> and T<sub>2</sub> may be used to indicate a single specific temperature.

**AAE960-005 01** **NR3..3.3ES2** **E01**  
level max real measure  
A

**ripple current** **I<sub>rppl</sub>**  
**I<sub>rppl</sub>**

The maximum rms alternating current (in A) of specified frequency which may be applied continuously to a fixed electrolytic capacitor at specified ambient temperature

AAE014-005 = ambient temperature  
AAE029-005 = frequency

**AAE961-005 01** **NR2 S..3.3** **E06**  
simple real measure  
V

**voltage V<sub>1</sub>** **@V<sub>1</sub>**  
**@V<sub>1</sub>**

The lower voltage V<sub>1</sub> (in V) of the voltage range applied to an electric-electronic or electromechanical component, as a variable.

**AAE962-005 01** **NR2 S..3.3** **E06**  
simple real measure  
V

**voltage V<sub>2</sub>** **@V<sub>2</sub>**  
**@V<sub>2</sub>**

The upper voltage V<sub>2</sub> (in V) of a voltage range applied to an electric-electronic or electromechanical component, as a variable.

**AAE963-005 01** **NR3..3.3ES2** **F03**  
simple real measure  
Hz

**frequency f<sub>1</sub>** **@f<sub>1</sub>**  
**@f<sub>1</sub>**

The lower frequency f<sub>1</sub> (in Hz) of the frequency range applied to an electric-electronic or electromechanical component, as a variable.

**AAE964-005 01** **NR3..3.3ES2** **F03**  
simple real measure  
Hz

**frequency f<sub>2</sub>** **@f<sub>2</sub>**  
**@f<sub>2</sub>**

The upper frequency f<sub>2</sub> (in Hz) of the frequency range applied to an electric-electronic or electromechanical component, as a variable.

**AAE965-005 01** **M..8A83**  
simple non-quantitative code

**component status** **status**

Code of the status of a component according to the manufacturer.

DEV = development type  
MAINT = maintenance type  
PROD = production type or current type

**AAE966-005 01 NR2..3.3 E01**  
level max real measure  
A

**average forward current  $I_F(AV)$**   
 $I_{F(AV)}$

The maximum average forward current (in A) of a rectifier diode or signal diode at specified temperature of a temperature type.

AAE683-005 = temperature type  
AAE685-005 = temperature

**AAE968-005 01 M..35 A56**  
simple string

**complementary type complement type**

Manufacturer's type number code of a transistor with reverse polarity, complementary to the transistor under consideration.

REMARKS:  
NPN (N-channel) equivalent of a PNP (P-channel) transistor and vice versa.

**AAE969-005 01 M..17 A55**  
simple string

**amplifier package amp package**  
envelope

Code of the package of an amplifier.

**AAE971-007 01 X..8 A56**  
simple non-quantitative code

**signal handling type signal handling**

Code of the signal handling type of a transistor.

POWT = power signal transistor  
SIGT = small signal transistor

**AAE973-005 01 M..8 A55**  
simple non-quantitative code

**FET-technology FET technology**

Code of the technology of a field-effect transistor.

JFET = junction FET  
MOSFET = metal oxide semiconductor FET

**AAE974-005 02 NR2 S..3.3 E06**  
level max real measure  
1

**input standing wave ratio VSWR<sub>in</sub>**  
VSWR<sub>in</sub>

The maximum voltage standing wave ratio at the input of an amplifier at specified values of supply voltage, temperature of a temperature type and frequency range between specified frequencies ( $f_1$  and  $f_2$ ).

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE963-005 = frequency  $f_1$   
AAE964-005 = frequency  $f_2$

REMARKS:  
The source and load impedance are assumed to be equal to the characteristic impedance.

**AAE975-005 02 NR2 S..3.3 E06**  
level max real measure  
1

**output standing wave ratio VSWR<sub>out</sub>**  
VSWR<sub>out</sub>

The maximum voltage standing wave ratio at the output of an amplifier at specified values of supply voltage, temperature of a temperature type and frequency range between specified frequencies ( $f_1$  and  $f_2$ ).

AAE102-005 = supply voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE963-005 = frequency  $f_1$   
AAE964-005 = frequency  $f_2$

REMARKS:  
The source and load impedance are assumed to be equal to the characteristic impedance.

**AAE976-005 02 NR3..3.3ES2 T07**  
level minTypMax real measure  
s

**rise time**  $t_r$   
 $t_r$

The value as specified by level (minTypMax) of the time (in s), measured between the 10 % value and the 90 % value of the drain current swing of a field-effect transistor at reference conditions.

AAE995-005 = reference conditions

REMARKS:

1. The internal generator resistance and gate-source resistance are assumed to be 50  $\Omega$ .
2. The reference conditions at specifying times for field-effect transistors are normally:
  - drain-source voltage
  - gate-source voltage
  - drain current (dc)
  - reference temperature

**AAE977-005 02 NR3..3.3ES2 T07**  
level minTypMax real measure  
s

**fall time**  $t_f$   
 $t_f$

The value as specified by level (minTypMax) of the time (in s), measured between the 90 % value and the 10 % value of the drain current swing of a field-effect transistor at reference conditions.

AAE995-005 = reference conditions

REMARKS:

1. The internal generator resistance and the gate-source resistance are assumed to be 50  $\Omega$ .
2. The reference conditions at specifying times for field-effect transistors are normally:
  - drain-source voltage
  - gate-source voltage
  - drain current (dc)
  - reference temperature

**AAE978-005 02 NR3..3.3ES2 T07**  
level minTypMax real measure  
s

**turn-on time**  $t_{on}$   
 $t_{on}$

The value as specified by level (minTypMax) of the time (in s), measured between the 10 % value of the gate-source voltage change and the 90 % value of the drain current swing of a field-effect transistor at reference conditions.

AAE995-005 = reference conditions

REMARKS:

1. The internal generator resistance and the gate-source resistance are assumed to be 50  $\Omega$ .
2.  $t_{on} = t_d + t_r$ .
3. The reference conditions at specifying times for field-effect transistors are normally:
  - drain-source voltage
  - gate-source voltage
  - drain current (dc)
  - reference temperature

**AAE979-005 02 NR3..3.3ES2 T07**  
level minTypMax real measure  
s

**turn-off time**  $t_{off}$   
 $t_{off}$

The value as specified by level (minTypMax) of the time (in s), measured between the 90 % value of the gate-source voltage change and the 10 % value of the drain current swing of a field-effect transistor at reference conditions.

AAE995-005 = reference conditions

REMARKS:

1. The internal generator resistance and the gate-source resistance are assumed to be 50  $\Omega$ .
2.  $t_{off} = t_{d(off)} + t_f$ .  $t_{d(off)}$  is also known as  $t_s$  (storage time).
3. The reference conditions at specifying times for field-effect transistors are normally:
  - drain-source voltage
  - gate-source voltage
  - drain current (dc)
  - reference temperature

**AAE980-005 02 NR3..3.3ES2 T07**  
level minTypMax  
s real measure

**delay (on) time** **t<sub>d(on)</sub>**  
 $t_{d(on)}$   
 $t_d$

The value as specified by level (minTypMax) of the time (in s), measured between the 10 % value of the gate-source voltage change and the 10 % value of the drain current swing of a field-effect transistor at reference conditions.

AAE995-005 = reference conditions

**REMARKS:**

1. The internal generator resistance and gate-source resistance are assumed to be 50  $\Omega$ .
2. The reference conditions at specifying times for field-effect transistors are normally:
  - drain-source voltage
  - gate-source voltage
  - drain current (dc)
  - reference temperature

**AAE981-005 02 NR3..3.3ES2 T07**  
level minTypMax  
s real measure

**delay (off) time** **t<sub>d(off)</sub>**  
 $t_{d(off)}$   
 $t_s$

The value as specified by level (minTypMax) of the time (in s), measured between the 90 % value of the gate-source voltage change and the 90 % value of the drain current swing of a field-effect transistor at reference conditions.

AAE995-005 = reference conditions

**REMARKS:**

1. The internal generator resistance and the gate-source resistance are assumed to be 50  $\Omega$ .
2.  $t_{d(off)}$  is also known as  $t_s$  (storage time).
3. The reference conditions at specifying times for field-effect transistors are normally:
  - drain-source voltage
  - gate-source voltage
  - drain current (dc)
  - reference temperature

**AAE982-005 03 NR3..3.3ES2 E09**  
level minTypMax  
F real measure

**input capacitance** **C<sub>iss</sub>**  
short-circuit input capacitance  $C_{iss}$

The value as specified by level (minTypMax) of the guaranteed capacitance (in F) between gate and source connections, with drain-source connections short-circuited for ac voltage, of a field-effect transistor at specified frequency, drain-source voltage, and gate-source voltage.

AAE029-005 = frequency  
AAE376-005 = drain-source voltage  
AAE381-005 = gate-source voltage

IEC 60747-8 (2000)

**AAE983-005 03 NR3..3.3ES2 E09**  
level minTypMax  
F real measure

**output capacitance** **C<sub>oss</sub>**  
short-circuit output capacitance  $C_{oss}$

The value as specified by level (minTypMax) of the guaranteed capacitance (in F) between drain and source connections, with gate-source connections short-circuited for ac voltage, of a field-effect transistor at specified frequency, drain-source voltage, and gate-source voltage.

AAE029-005 = frequency  
AAE376-005 = drain-source voltage  
AAE381-005 = gate-source voltage

IEC 60747-8 (2000)

**AAE984-005 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**digit height** **h<sub>dig</sub>**  
 $h_{dig}$

The nominal height (in m) of a digit of a liquid crystal display.

**REMARKS:**

The height is measured in the vertical direction.



**AAE985-005 02** **M..8** **A62**  
simple non-quantitative code

**connection method** **connection**

Code of the method of a connection to a liquid crystal display.

FIXPIN = fixed pin  
FOIL = foil  
RUBBER = conductive rubber

**AAE986-005 01** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**dot spacing** **dot spacing**  
dot spacing

The nominal space (in m) between two adjacent dots of a liquid crystal display module.

**AAE987-005 02** **NR3..3.3ES2** **E49**  
level max real measure  
W

**power consumption** **P\_cons**  
P<sub>cons</sub>

The maximum guaranteed power consumption (in W) of an electric/electronic or electromechanical component.

**AAE989-005 01** **M..17** **A62**  
simple string

**backlight** **backlight**

The product code of a backlight used with a liquid crystal display module.

**AAE990-005 01** **NR3..3.3ES2** **E09**  
level minTypMax real measure  
F/m<sup>2</sup>

**specific capacitance** **C\_s**  
C<sub>s</sub>

The value as specified by level (minTypMax) of the specific capacitance (in F/m<sup>2</sup>) between segment and back-plane of a liquid crystal display at the typical operating voltage, drive frequency of 32 Hz, ambient temperature of 25 Cel and specified driving method.

AAF264-005 = driving method

**AAE991-005 01** **M..17** **A58**  
simple non-quantitative code

**preferred viewing direction** **view direction**

Code of the viewing direction of a liquid crystal display.

10 o'clock = 150 deg in the plane of the LCD.  
12 o'clock = 90 deg in the plane of the LCD.  
3 o'clock = 0 deg in the plane of the LCD.  
5 o'clock = 300 deg in the plane of the LCD.  
6 o'clock = 270 deg in the plane of the LCD.  
9 o'clock = 180 deg in the plane of the LCD.

REMARKS:

During the manufacturing process the orientation layers of an LCD can be treated so that a so-called preferred viewing direction can be built in. In this direction the display contrast is maximum. A 6 o'clock view means a preferred view from below (270 deg in the plane of the LCD), whereas a 12 o'clock (or 90 deg) preferred view implies a preference from above. The exact elevation angle is not taken into account.

**AAE992-005 02** **NR2 S..3.3** **E06**  
level minTypMax real measure  
V

**operating voltage** **V\_oper**  
drive voltage V<sub>oper</sub>

The value as specified by level (minTypMax) of the peak-to-peak ac square-wave voltage (in V) to be applied to a liquid crystal display, at specified driving method, drive frequency of 32 Hz and ambient temperature of 25 Cel.

AAF264-005 = driving method

**AAE993-005 02** **NR2..3.3** **T01**  
simple real measure  
deg

**viewing angle** **@\$a\_view**  
@α<sub>view</sub>

Angle (in deg) between viewing direction and the perpendicular to the plane of the liquid crystal display, as a variable.

**AAE994-005 01** **NR3..3.3ES2** **E01**  
simple real measure  
A

**reverse current** **@I<sub>R</sub>**  
**@I<sub>R</sub>**

The direct current (in A) flowing through a diode or optoelectronic device, in the reverse direction, as a variable.

**AAE995-005 02** **M..175** **A59**  
simple string

**reference conditions** **@reference cond**

Description of the reference conditions applied to a component as a variable.

#### NOTE

Reference conditions may be used when a number of characteristics are specified at a common set of conditions.

**AAE996-005 02** **NR1..4** **Q56**  
level nom integer measure  
1

**number of sections** **N<sub>sect</sub>**  
**N<sub>sect</sub>**

The number of sections of a capacitive antenna.

#### REMARKS:

Applies to extendible antennas.

**AAE997-005 01** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**extended length** **I<sub>ext</sub>**  
**I<sub>ext</sub>**

The nominal length (in m) of a capacitive antenna when all sections are in the extended position.

**AAE998-005 01** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**non-extended length** **I<sub>next</sub>**  
**I<sub>next</sub>**

The nominal length (in m) of a capacitive antenna when all sections are in the non-extended position.

**AAF014-005 03** **M..8A56**  
simple non-quantitative code

**driving feature**

**drive feature**

Code of the driving feature of a component.

CROSDR = crossed recessed  
HEX = hexagon  
HEXSKT = hexagon socket  
PHILL = \*phillips  
POZI = \*pozidriv  
SLOT = slotted  
SQUARE = square  
SUPA = \*supadriv  
TORX = torx  
X = \*\*type X

#### REMARKS:

For electric-electronic components the values hexagon, crossed recessed and slotted are valid.

**AAF043-005 03** **M..35** **A61**  
simple string

**national standard** **nat standard**

Reference to a regional or national standard describing a component.

#### REMARKS:

AFNOR = Association Francaise de Normalisation  
ANSI = American National Standards Institute  
ASTM = American Society for Testing and Materials  
BEC = Belgisch Elektrotechnisch Comité  
BIN = Belgisch Instituut voor Normalisatie  
BSI = British Standards Institution  
CSA = Canadian Standards Association  
DIN = Deutsches Institut für Normung  
MIL = Military specification  
NNI = Nederlands Normalisatie Instituut  
UL = Underwriters Laboratories  
UNE = Instituto Nacional de Racionalización y Normalización (IRANOR)  
UNI = Ente Nazionale Italiana di Unificazione

**AAF044-005 02** **NR3..3.3ES2** **E44**  
level nom real measure  
 $\Omega$

**output impedance** **|Z<sub>out</sub>|**  
**|Z<sub>out</sub>|**

The nominal value of the modulus of the output impedance (in ohms) of a filter at specified frequency.

AAE029-005 = frequency

IEC 60050 (131) (2002)

|                                                                                             |           |                        |            |                                                                                                                          |                |                       |            |
|---------------------------------------------------------------------------------------------|-----------|------------------------|------------|--------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------|------------|
| <b>AAF045-005</b>                                                                           | <b>02</b> | <b>NR2..3.3</b>        | <b>K09</b> | <b>AAF050-005</b>                                                                                                        | <b>02</b>      | <b>NR3..3.3ES2</b>    | <b>E06</b> |
|                                                                                             | level max | real measure           |            |                                                                                                                          | level max      | real measure          |            |
|                                                                                             |           | N                      |            |                                                                                                                          |                | V                     |            |
| <b>engaging force</b>                                                                       |           | <b>F_eng</b>           |            | <b>release voltage (ac)</b>                                                                                              |                | <b>U_rel(ac)</b>      |            |
| insertion force                                                                             |           | F <sub>eng</sub>       |            |                                                                                                                          |                | U <sub>rel(ac)</sub>  |            |
| The maximum force (in N) required to engage a connector with its mating part.               |           |                        |            | The maximum ac voltage (in V) at which an energised relay releases.                                                      |                |                       |            |
| NOTE<br>This force includes the effect of a coupling, locking or similar device.            |           |                        |            | IEC 61810-7 (1997)                                                                                                       |                |                       |            |
| IEC 60050 (581) (1978)                                                                      |           |                        |            | <b>AAF051-005</b>                                                                                                        | <b>01</b>      | <b>M..8</b>           | <b>A58</b> |
|                                                                                             |           |                        |            |                                                                                                                          | simple         | non-quantitative code |            |
| <b>AAF046-005</b>                                                                           | <b>02</b> | <b>NR2..3.3</b>        | <b>K09</b> | <b>locking device</b>                                                                                                    |                | <b>locking device</b> |            |
|                                                                                             | level min | real measure           |            | Code of the locking device of a connector.                                                                               |                |                       |            |
|                                                                                             |           | N                      |            |                                                                                                                          |                |                       |            |
| <b>separating force</b>                                                                     |           | <b>F_sep</b>           |            | BAYON                                                                                                                    | = bayonet      |                       |            |
| withdrawal force                                                                            |           | F <sub>sep</sub>       |            | SCREW                                                                                                                    | = screw        |                       |            |
| The minimum force (in N) required to separate a connector from its mating part.             |           |                        |            | SNAP                                                                                                                     | = snap (click) |                       |            |
| NOTE<br>This force includes the effect of a coupling, locking or similar device.            |           |                        |            | IEC 60050 (581) (1978)                                                                                                   |                |                       |            |
| IEC 60050 (581) (1978)                                                                      |           |                        |            | <b>AAF052-005</b>                                                                                                        | <b>01</b>      | <b>NR3..3.3ES2</b>    | <b>F03</b> |
|                                                                                             |           |                        |            |                                                                                                                          | level min      | real measure          |            |
|                                                                                             |           |                        |            |                                                                                                                          |                | Hz                    |            |
| <b>resonance frequency</b>                                                                  |           |                        |            |                                                                                                                          |                | <b>f_rsn</b>          |            |
|                                                                                             |           |                        |            |                                                                                                                          |                | f <sub>rsn</sub>      |            |
| The value as specified by level (minMax) of the resonance frequency (in Hz) of an inductor. |           |                        |            |                                                                                                                          |                |                       |            |
| <b>AAF047-005</b>                                                                           | <b>02</b> | <b>M..3</b>            | <b>A56</b> |                                                                                                                          |                |                       |            |
|                                                                                             | simple    | non-quantitative code  |            |                                                                                                                          |                |                       |            |
| <b>screening</b>                                                                            |           | <b>screening</b>       |            |                                                                                                                          |                |                       |            |
| Code of the screening of a transformer.                                                     |           |                        |            | <b>AAF053-005</b>                                                                                                        | <b>01</b>      | <b>NR3..3.3ES2</b>    | <b>T03</b> |
| PRI = primary                                                                               |           |                        |            |                                                                                                                          | level nom      | real measure          |            |
| SEC = secondary                                                                             |           |                        |            |                                                                                                                          |                | m                     |            |
| <b>AAF048-005</b>                                                                           | <b>02</b> | <b>NR1..4</b>          | <b>Q56</b> | <b>terminal length beside housing</b>                                                                                    |                | <b>I_term</b>         |            |
|                                                                                             | level nom | integer measure        |            |                                                                                                                          |                | I <sub>term</sub>     |            |
|                                                                                             |           | 1                      |            | The nominal length (in m) of that part of a terminal of a right angle or 45 degree connector that is beside the housing. |                |                       |            |
| <b>number of primary coils</b>                                                              |           | <b>N_pri(coil)</b>     |            |                                                                                                                          |                |                       |            |
|                                                                                             |           | N <sub>pri(coil)</sub> |            |                                                                                                                          |                |                       |            |
| The number of primary coils of a power transformer or relay.                                |           |                        |            |                                                                                                                          |                |                       |            |
| <b>AAF049-005</b>                                                                           | <b>01</b> | <b>NR3..3.3ES2</b>     | <b>F03</b> |                                                                                                                          |                |                       |            |
|                                                                                             | level nom | real measure           |            |                                                                                                                          |                |                       |            |
|                                                                                             |           | m/s                    |            |                                                                                                                          |                |                       |            |
| <b>speed</b>                                                                                |           | <b>v_mot</b>           |            |                                                                                                                          |                |                       |            |
|                                                                                             |           | v <sub>mot</sub>       |            |                                                                                                                          |                |                       |            |
| The nominal speed (in m/s) of a linear motor.                                               |           |                        |            |                                                                                                                          |                |                       |            |

**AAF055-005 02 NR3..3.3ES2 T07**  
 level minTypMax  
 s real measure

**delay (off) time** **t\_d(off)**  
 carrier storage time  $t_{d(off)}$   
 $t_s$

The value as specified by level (minTypMax) of the time (in s), measured between the 90 % value of the input pulse and the 90 % value of the corresponding output pulse of a bipolar transistor at reference conditions.

AAE995-005 = reference conditions

**REMARKS:**

The reference conditions at specifying times for bipolar transistors are normally:

- supply voltage
- collector current
- base current
- reference temperature

**AAF057-005 02 NR3..3.3ES2 T07**  
 level minTypMax  
 s real measure

**fall time** **t\_f**  
 $t_f$

The value as specified by level (minTypMax) of the time (in s) required for the output pulse to fall from a stated high percentage (usually 90 %) to a stated lower percentage (10 %) of its maximum value, of a bipolar transistor at reference conditions.

AAE995-005 = reference conditions

**REMARKS:**

The reference conditions at specifying times for bipolar transistors are normally:

- supply voltage
- collector current
- base current
- reference temperature

**AAF056-005 02 NR3..3.3ES2 T07**  
 level minTypMax  
 s real measure

**delay (on) time** **t\_d(on)**  
 delay time  $t_{d(on)}$   
 $t_d$

The value as specified by level (minTypMax) of the time (in s), measured between the 10 % value of the input pulse which is switching-on the transistor, and the 10 % value of the corresponding output pulse of a bipolar transistor at reference conditions.

AAE995-005 = reference conditions

**REMARKS:**

The reference conditions at specifying times for bipolar transistors are normally:

- supply voltage
- collector current
- base current
- reference temperature

**AAF058-005 02 NR3..3.3ES2 T07**  
 level minTypMax  
 s real measure

**rise time** **t\_r**  
 $t_r$

The value as specified by level (minTypMax) of the time (in s) required for the output pulse to rise from a stated low percentage (usually 10 %) to a stated higher percentage (90 %) of its maximum value, of a bipolar transistor at reference conditions.

AAE995-005 = reference conditions

**REMARKS:**

The reference conditions at specifying times for bipolar transistors are normally:

- supply voltage
- collector current
- base current
- reference temperature

**AAF059-005 02 NR3..3.3ES2 T07**  
level minTypMax s real measure

**turn-off time** **t<sub>off</sub>**  
t<sub>off</sub>

The value as specified by level (minTypMax) of the time (in s) elapsing between the end of the input pulse (at least 90 % of its maximum value) and the moment the corresponding output signal falls to 10 % of its maximum value, of a bipolar transistor at reference conditions.

AAE995-005 = reference conditions

IEC 60747-8 (2000)

REMARKS:

1.  $t_{off} = t_s + t_r$ .
2. The reference conditions at specifying times for bipolar transistors are normally:
  - supply voltage
  - collector current
  - base current
  - reference temperature

**AAF062-005 02 NR3..3.3ES2 K09**  
level max real measure N

**holding force** **F<sub>hold</sub>**  
F<sub>hold</sub>

The maximum steady force (in N) that can be externally applied to the armature of an excited linear stepping motor without causing continuous stepping.

**AAF063-005 02 NR1..4 E01**  
simple integer measure A

**rms on-state current** **@I<sub>T</sub>(RMS)**  
@I<sub>T</sub>(RMS)

The rms on-state current (in A) flowing from the anode to the cathode in a thyristor or triac, as a variable.

IEC 60747-6 (2000)

**AAF060-005 02 NR3..3.3ES2 T07**  
level minTypMax s real measure

**turn-on time** **t<sub>on</sub>**  
t<sub>on</sub>

The value as specified by level (minTypMax) of the time (in s) elapsing between the start of the input pulse (usually 10% of its maximum value) and the moment the corresponding output signal is at least 90 % of its maximum value, of a bipolar transistor at reference conditions.

AAE995-005 = reference conditions

IEC 60747-8 (2000)

REMARKS:

1.  $t_{on} = t_d + t_r$ .
2. The reference conditions at specifying times for bipolar transistors are normally:
  - supply voltage
  - collector current
  - base current
  - reference temperature

**AAF064-005 02 NR3..3.3ES2 L29**  
level minTypMax W/sr real measure

**radiant intensity** **I<sub>e</sub>**  
I<sub>e</sub>

The value as specified by level (minTypMax) of the radiant intensity (in W/sr) of an infrared emitting diode at specified forward current and temperature of a temperature type.

AAE274-005 = forward current  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAF065-005 02 NR3..3.3ES2 L10**  
level typ real measure W

**total radiant output power** **\$f<sub>e</sub>**  
radiant flux  $\phi_e$   
P<sub>out</sub>

The typical total radiant output power (in W) of an infrared emitting diode at specified forward current and temperature of a temperature type.

**AAF061-005 01 NR3..3.3ES2 T03**  
level nom real measure m

**step length** **I<sub>step</sub>**  
I<sub>step</sub>

The nominal length (in m) between adjacent step positions of a linear stepping motor.

AAE274-005 = forward current  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAF066-005 02 NR3 S..3.3ES2 E06**  
level min real measure  
V

**collector-emitter breakdown voltage  $V_{(BR)CEO}$**   
 $V_{(BR)CEO}$

The minimum breakdown voltage (in V) between collector and emitter terminals of a bipolar transistor or photocoupler when the collector terminal is biased in the reverse direction with respect to the emitter terminal and when the base terminal is open-circuited, at specified collector current and temperature of a temperature type.

AAE406-005 = collector current (dc)

AAE683-005 = temperature type

AAE685-005 = temperature

JESD 77B (2000)

#### REMARKS:

The collector terminal is considered to be biased in the reverse direction when it is made positive for NPN transistors or negative for PNP transistors with respect to the emitter terminal.

**AAF090-005 02 NR3..3.3ES2 E33**  
level max real measure  
 $\Omega$

**dc resistance  $R_{dc}$**   
 $R_{dc}$

The maximum resistance to direct current (in ohms) of a coil of a wirewound component.

#### REMARKS:

Examples of wirewound components: inductor, moving conductor loudspeaker, motor, relay, transformer.

**AAF096-005 01 M..8 A59**  
simple non-quantitative code

**stability test @stab test**

Code of the type of stability test to which a component is submitted.

CLIM = climatic test

LOAD = load test

OVERL = short time overload

**AAF097-005 02 NR2..3.3 E33**  
level max real measure  
%

**stability after test stability**  
stability

The ratio (in %) of a) the maximum difference of the resistance of a resistor before and after a specified test to b) the resistance before the test, according to document IEC 60115-1 (1999).

AAF096-005 = stability test

**AAF098-005 01 M..8 A51**  
simple non-quantitative code

**power transformer application application**

Code indicating the application of a fixed power transformer.

DRI = line deflection driver transformer

LDO = line deflection output transformer

SAFETY = safety transformer

SMPs = switched mode power supply transformer

SUPPLY = supply transformer

**AAF099-005 02 NR1..4 Q56**  
level nom integer measure  
1

**number of secondary coils  $N_{sec(coil)}$**   
 $N_{sec(coil)}$

The number of secondary coils of a power transformer.

**AAF100-005 01 NR2 S..3.3 E33**  
level nom real measure  
%

**resistance tolerance  $R_{tol}$**   
 $R_{tol}$

The nominal tolerance on resistance (in %) identifying a resistor.

#### REMARKS:

Used only in cases of equal positive and negative tolerance values.



**AAF101-006 01 X..3 A56**  
simple non-quantitative code

**multiplicity**

Code of the multiplicity of a fixed linear resistor.

MUL = linear resistor networks  
SIN = single linear resistors

**AAF102-005 01 M..3 A56**  
simple non-quantitative code

**resistor interconnection interconnection**

Code of the type of interconnection of a fixed linear resistor network.

COM = common terminal  
DIV = divider  
ISO = isolated  
LAD = ladder  
TER = terminator

**AAF103-005 01 NR3..3.3ES2 E01**  
level max real measure  
A

**current dc I<sub>dc</sub>**

The maximum dc current (in A) of an electric-electronic or electromechanical component at specified ambient temperature.

AAE014-005 = ambient temperature

**AAF106-005 02 NR1..4 E01**  
level max integer measure  
A

**contact current (dc) I<sub>cont</sub>(dc)**  
rated operational current (dc) I<sub>cont</sub>(dc)

The maximum dc switching current (in A) of a switch or relay at resistive load.

IEC 60947-1 (2004)

**AAF107-005 02 NR3..3.3ES2 E06**  
level max real measure  
V

**contact voltage (dc) U<sub>cont</sub>**  
rated operational voltage (dc) U<sub>cont</sub>

The maximum operating rms switching voltage (in V) of a switch or relay at resistive load.

**NOTE**

The rated voltage is the voltage between the contact members before closing or after opening.

IEC 60127-1 (1988)

**AAF109-005 02 NR3..3.3ES2 E01**  
level minTypMax real measure  
A

**collector cut-off current I<sub>CB</sub> I<sub>CBO</sub>**  
I<sub>CBO</sub>

The value as specified by level (minTypMax) of the direct current (in A) into the collector terminal of a bipolar transistor when it is biased in the reverse direction with respect to the base terminal and when the emitter terminal is open-circuited, at specified values of collector-base voltage and temperature of a temperature type.

AAE419-005 = collector-base voltage

AAE683-005 = temperature type

AAE685-005 = temperature

JESD 77B (2000)

**REMARKS:**

The collector terminal is considered to be biased in the reverse direction when it is made positive for NPN transistors or negative for PNP transistors with respect to the emitter terminal.

**AAF110-005 02 NR3..3.3ES2 E01**  
level minTypMax real measure  
A

**emitter cut-off current  $I_{EBO}$   $I_{EBO}$**   
 $I_{EBO}$

The value as specified by level (minTypMax) of the direct current (in A) into the emitter terminal of a bipolar transistor when it is biased in the reverse direction with respect to the base terminal and when the collector terminal is open-circuited, at specified values of emitter-base voltage and temperature of a temperature type.

AAE427-005 = base-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

JESD 77B (2000)

**REMARKS:**

The emitter terminal is considered to be biased in the reverse direction when it is made positive for NPN transistors or negative for PNP transistors with respect to the base terminal.

**AAF112-005 01 NR2 S..3.3 E06**  
level max real measure  
V

**emitter-base voltage  $V_{EBO}$   $V_{EBO}$**   
 $V_{EBO}$

The maximum limiting voltage (in V) between emitter and base terminals of a bipolar transistor, at open collector terminal.

JESD 77B (2000)

**AAF113-005 02 NR2 S..3.3 E06**  
level max real measure  
V

**collector-emitter voltage  $V_{CE}$   $V_{CEX}$**   
 $V_{CEX}$

The maximum limiting direct voltage (in V) between collector and emitter terminals of a bipolar transistor at specified voltage between base and emitter terminals.

AAE427-005 = base-emitter voltage

IEC 60748

**AAF114-005 02 NR2 S..3.3 E06**  
level minTypMax real measure  
V

**base-emitter saturation voltage  $V_{BEsat}$**   
 $V_{BEsat}$

The value as specified by level (minTypMax) of the base-emitter voltage (in V) of a bipolar transistor at specified collector current, base current and temperature of a temperature type.

**NOTE**

This is the voltage between base and emitter terminals when both the base-emitter and base-collector junctions are forward biased.

AAE406-005 = collector current (dc)  
AAE409-005 = base current (dc)  
AAE683-005 = temperature type  
AAE685-005 = temperature

IEC 60748

**AAF115-005 02 NR3..3.3ES2 E01**  
level minTypMax real measure  
A

**collector cut-off current  $I_{CE}$   $I_{CES}$**   
 $I_{CES}$

The value as specified by level (minTypMax) of the direct current (in A) into the collector terminal of a bipolar transistor when it is biased in the reverse direction with respect to the emitter terminal and when the base terminal is short-circuited to the emitter terminal, at specified values of collector-emitter voltage and temperature of a temperature type.

AAE412-005 = collector-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

JESD 77B (2000)

**REMARKS:**

The collector terminal is considered to be biased in the reverse direction when it is made positive for NPN transistors or negative for PNP transistors with respect to the emitter terminal.

**AAF116-005 02 NR3..3.3ES2 E09**  
level max real measure  
F

**collector-base capacitance C\_ob**  
C<sub>ob</sub>

The maximum value of the capacitance (in F) between collector and base terminals of a bipolar transistor in common-base configuration and the emitter terminal open-circuited, at specified values of collector-base voltage, frequency and temperature of a temperature type.

AAE029-005 = frequency  
AAE419-005 = collector-base voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAF117-005 03 NR3..3.3ES2 E09**  
level max real measure  
F

**emitter-base input capacitance C\_ib**  
C<sub>ib</sub>

The maximum value of the capacitance (in F) between emitter and base terminals of a bipolar transistor in common-base configuration and collector terminal open-circuited, at specified values of emitter-base voltage, frequency and temperature of a temperature type.

AAE029-005 = frequency  
AAE427-005 = base-emitter voltage  
AAE683-005 = temperature type  
AAE685-005 = temperature

**AAF118-005 02 NR1 S..4 E06**  
level max integer measure  
V

**gate-source voltage limit V\_GSlim**  
V<sub>GSlim</sub>

The maximum limiting direct voltage (in V) between gate and source terminals of a field-effect transistor.

**AAF119-005 01 M..3 A51**  
simple non-quantitative code

**frequency application frequency appl**

Code of the frequency application of a filter.

AP = all pass  
BP = band pass  
BS = band stop  
HP = high pass  
LP = low pass

**AAF120-005 02 NR1..4 E49**  
level min integer measure  
dB

**comb depth comb depth**  
comb depth

The minimum comb depth (in dB) of a comb filter.

**AAF121-005 02 NR1..4 F13**  
level max integer measure  
dB

**pass-band attenuation pass band att**  
pass band att

The maximum pass-band attenuation (in dB) of a band pass filter.

**AAF122-005 01 NR1..4 E01**  
level nom integer measure  
A

**rated breaking capacity I\_br**  
I<sub>br</sub>

The nominal prospective current (in A) that a fuse-link is capable of breaking.

IEC 60269-1 (1998)

**AAF123-005 02 NR3 S..3.3ES2 E06**  
level max real measure  
V

**voltage drop U\_drop**  
U<sub>drop</sub>

The maximum dc or ac rms voltage (in V) across a fuse-link at the rated current.

IEC 60127-1 (1988)

**AAF124-005 01 M..8 A51**  
simple non-quantitative code

**integrated component integr comp**

Code of a component integrated with a connector.

COVER = cover  
EARTH = earth contact  
HANDLE = handle  
HOUSE = house  
LATCH = latch  
SHIELD = shield

**AAF125-005 01** **M..8** **A57**  
simple non-quantitative code

**contact spring material cont spring mat**

Code of the material of the spring of the contacts of a connector, relay or switch.

BeCu = beryllium copper  
PCuSn = phosphor bronze

**AAF126-005 01** **M..8** **A59**  
simple non-quantitative code

**UL flammability UL flammability**

UL code of the flammability of a connector.

94-5V = 94-5V  
94HB = 94HB  
94HBF = 94HBF  
94HBF-1 = 94HBF-1  
94HBF-2 = 94HBF-2  
94V-0 = 94V-0  
94V-1 = 94V-1  
94V-2 = 94V-2  
94VTM-0 = 94VTM-0  
94VTM-1 = 94VTM-1  
94VTM-2 = 94VTM-2

**AAF127-005 01** **M..3** **A59**  
simple non-quantitative code

**IEC flammability IEC flammable**

IEC code of the flammability of a connector.

FH1 = FH1  
FH2 = FH2  
FH3 = FH3  
FV0 = FV0  
FV1 = FV1  
FV2 = FV2

**REMARKS:**

FH = Flame Horizontal FV = Flame Vertical

**AAF128-005 01** **M..3** **A91**  
simple non-quantitative code

**package colour envelope colour**

**package colour**

UL code of the colour of a connector body.

BG = beige  
BK = black  
BL = blue  
BN = brown  
BZ = bronze  
GN = green  
GY = grey  
IV = ivory  
NC = natural (no pigmentation)  
OR = orange  
PK = pink  
RD = red  
TN = tan  
VT = violet  
WT = white  
YL = yellow

**AAF129-005 02** **NR3..3.3ES2** **E06**  
level max real measure V

**release voltage (dc) U<sub>rel</sub>(dc)**  
U<sub>rel</sub>(dc)

The maximum dc voltage (in V) at which an energised relay releases.

IEC 61810-7 (1997)

**AAF130-005 02** **NR2..3.3** **E49**  
level max real measure VA

**contact power (dc) P<sub>cont</sub>(dc)**  
P<sub>cont</sub>(dc)

The maximum switching apparent power (in VA) as a product of the actual dc contact voltage and the actual dc contact current applied in combination to a switch or relay at resistive load.

**REMARKS:**

The apparent power is less then the product of contact current and contact voltage.

**AAF131-005 02** **NR1..4** **Q56**  
level nom integer measure 1

**number of phases N<sub>ph</sub>**  
N<sub>ph</sub>

The number of actual phases of a motor.

**AAF132-005 01 NR3..3.3ES2 T03**  
level max real measure  
m

**travel** **S\_mot**  
S<sub>mot</sub>

The maximum travel (in m) of a linear motor.

**AAF133-005 01 NR3..3.3ES2 K12**  
level nom real measure  
N

**rated force** **F\_nom**  
F<sub>nom</sub>

The nominal force (in N) of a linear motor.

**AAF134-005 01 M..8 A51**  
simple non-quantitative code

**integrated function** **integ function**

Code of a component integrated with a switch.

BAR = barrier  
KNOB = knob  
LAMP = lamp  
LED = light emitting diode  
OO = on/off indication  
PLATE = insulating plate  
RING = blocking ring

**AAF135-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A

**off-state current** **I\_D**  
I<sub>D</sub>

The maximum dc off-state current (in A) in the forward direction of a thyristor or triac at a specified high off-state voltage and a temperature of a temperature type

AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE737-005 = off-state voltage

REMARKS:

This off-state voltage will be equal to V<sub>D-max</sub>, V<sub>DWM</sub>, or V<sub>RDM</sub> (worst-case situation).

**AAF136-005 01 NR3 S..3.3ES2 E01**  
level minTypMax real measure  
A

**holding current** **I\_H**  
I<sub>H</sub>

The value as specified by level (minTypMax) of the dc forward current (in A) required to hold the thyristor or triac in the on-state at specified temperature of a temperature type.

AAE683-005 = temperature type  
AAE685-005 = temperature

**AAF137-005 01 NR3 S..3.3ES2 E01**  
level minTypMax real measure  
A

**latching current** **I\_L**  
I<sub>L</sub>

The value as specified by level (minTypMax) of the dc forward current (in A) required to maintain the thyristor or triac in the on-state after the triggering pulse has been removed, at a specified temperature of a temperature type.

AAE683-005 = temperature type  
AAE685-005 = temperature

**AAF138-005 02 NR3..3.3ES2 E01**  
level minTypMax real measure  
A

**collector current light** **I\_CEO(L)**  
I<sub>CEO(L)</sub>

The value as specified by level (minTypMax) of the direct collector current (in A) in a photosensor transistor at open base and specified collector-emitter voltage, irradiance of a certain wavelength and temperature of a temperature type.

AAE412-005 = collector-emitter voltage  
AAE569-005 = wavelength at peak value  
AAE570-005 = irradiance  
AAE683-005 = temperature type  
AAE685-005 = temperature

REMARKS:

Called light collector current when irradiance occurs.

**AAF139-005 02 NR3..3.3ES2 E01**  
 level minTypMax real measure  
 A

**collector cut-off current dark  $I_{CEO}(D)$**   
 $I_{CEO(D)}$

The value as specified by level (minTypMax) of the direct collector current (in A) in a photosensor transistor at open base and zero irradiance and specified values of collector-emitter voltage and temperature of a temperature type.

AAE412-005 = collector-emitter voltage  
 AAE683-005 = temperature type  
 AAE685-005 = temperature

**REMARKS:**

Called dark collector current if irradiance is zero.

**AAF140-005 02 NR3..3.3ES2 E01**  
 level minTypMax real measure  
 A

**collector current light  $I_{CEO}(L)$**   
 $I_{CEO(L)}$

The value as specified by level (minTypMax) of the direct collector current (in A) in a photocoupler at open base and specified collector-emitter voltage, forward voltage, forward current and temperature of a temperature type.

AAE274-005 = forward current  
 AAE412-005 = collector-emitter voltage  
 AAE499-005 = forward voltage  
 AAE683-005 = temperature type  
 AAE685-005 = temperature

**AAF141-005 02 NR3..3.3ES2 E01**  
 level minTypMax real measure  
 A

**cut-off current dark  $I_{CEO}$   $I_{CEO}(D)$**   
 $I_{CEO(D)}$

The value as specified by level (minTypMax) of the direct collector current (in A) in a photocoupler at open base and zero forward current and specified collector-emitter voltage and temperature of a temperature type.

AAE412-005 = collector-emitter voltage  
 AAE683-005 = temperature type  
 AAE685-005 = temperature

**AAF142-005 02 NR3..3.3ES2 E01**  
 level minTypMax real measure  
 A

**cut-off current dark  $I_{CBO}$   $I_{CBO}(D)$**   
 $I_{CBO(D)}$

The value as specified by level (minTypMax) of the direct collector current (in A) in a photocoupler at open emitter and zero forward current and specified values of collector-base voltage and temperature of a temperature type.

AAE419-005 = collector-base voltage  
 AAE683-005 = temperature type  
 AAE685-005 = temperature

**AAF143-005 02 NR3..3.3ES2 E01**  
 level minTypMax real measure  
 A

**reverse current light  $I_R(L)$**   
 $I_{R(L)}$

The value as specified by level (minTypMax) of the reverse direct current (in A) in a photosensor diode at specified values of reverse voltage, irradiance of a specified wavelength and temperature of a temperature type.

AAE335-005 = reverse voltage  
 AAE569-005 = wavelength at peak value  
 AAE570-005 = irradiance  
 AAE683-005 = temperature type  
 AAE685-005 = temperature

**REMARKS:**

Called light reverse current when irradiance occurs.

**AAF144-005 02 NR3..3.3ES2 E01**  
 level minTypMax real measure  
 A

**reverse current dark  $I_R(D)$**   
 $I_{R(D)}$

The value as specified by level (minTypMax) of the Reverse direct current (in A) in a photosensor diode at zero irradiance and specified values of reverse voltage and temperature of a temperature type.

AAE335-005 = reverse voltage  
 AAE683-005 = temperature type  
 AAE685-005 = temperature

**REMARKS:**

Called dark reverse current when irradiance is zero.



**AAF145-005 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**digit length** **I<sub>dig</sub>**  
I<sub>dig</sub>

The nominal length (in m) of a digit of a liquid crystal display.

**REMARKS:**

The length is measured in the horizontal direction.

**AAF146-005 02 X..3 A56**  
simple non-quantitative code

**frequency application frequency appl**

Code of the frequency identifying an amplifier, signal cable or transistor.

LF = low frequency  
RF = radio frequency  
WB = wideband

**REMARKS:**

Wideband only to be used for amplifiers.

**AAF148-005 02 M..8 A56**  
simple non-quantitative code

**socket type socket type**

Code of the type of a connector socket.

EDGE = printed board socket  
SBAT = battery socket  
SFUS = fuse socket  
SIC = IC socket  
SLAM = lamp socket  
SLCD = display socket  
SOPT = LED socket  
SREL = relay socket  
STRA = transistor socket  
STUB = tube socket

**AAF150-005 02 NR1..4 Q56**  
level nom integer measure  
1

**number of contacts per row N<sub>cont/row</sub>**  
N<sub>cont/row</sub>

The number of contacts per row of a connector.

**AAF151-005 01 M..3 A56**  
simple non-quantitative code

**adjustability type adjustability**

Code of the type of mechanical adjustability identifying an inductor.

FIX = fixed  
VAR = variable

**AAF152-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A

**input offset current I<sub>IO</sub>**  
I<sub>IO</sub>

The maximum value of the dc current (in A) equal to the difference in the currents in the two input terminals of an operational amplifier to attain zero output voltage at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

**AAF153-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A/Cel

**temp coef input offset current \$a<sub>IIO</sub>**  
a<sub>IIO</sub>

The maximum value of the quotient (in A/Cel) of the change of input offset current of an operational amplifier over the operating temperature range and at the nominal supply voltage.

IEC 60748-3 (1986)

**AAF154-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A

**average bias current I<sub>IB</sub>**  
input bias current I<sub>IB</sub>

The maximum value of the dc current (in A), equal to the arithmetic average of the currents into the differential input terminals of an operational amplifier in a quiescent state at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

**AAF155-005 01 NR3 S..3.3ES2 E06**  
level max real measure  
V

**input offset voltage  $V_{IO}$**   
 $V_{IO}$

The maximum value of the dc voltage (in V), required to be applied between the input terminals of an operational amplifier, to cause zero output voltage at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

**AAF156-005 01 NR3 S..3.3ES2 E06**  
level max real measure  
V/Cel

**temp coef input offset voltage  $\alpha_{VIO}$**   
 $\alpha_{VIO}$

The maximum value of the quotient (in V/Cel), of the change of input offset voltage of an operational amplifier over the operating temperature range and at the nominal supply voltage.

IEC 60748-3 (1986)

**AAF157-005 02 NR2 S..3.3 E06**  
level max real measure  
V

**common-mode input voltage  $V_{IC}$**   
common-mode input voltage range  $V_{IC}$

The maximum common-mode input voltage (in V) applied to a differential amplifier which, if exceeded, may cause the amplifier to cease to function within specification.

IEC 60748-3 (1986)

**AAF158-005 01 NR2 S..3.3 E06**  
level min real measure  
V

**output voltage peak-to-peak  $V_{OPP}$**   
output voltage swing  $V_{OPP}$

The minimum value of the peak-to-peak output voltage (in V) of a voltage amplifier over the operating temperature range, at specified load resistance and supply voltage.

AAE102-005 = supply voltage

AAE212-005 = load resistance

IEC 60748-3 (1986)

**AAF159-005 02 NR3..3.3ES2 E06**  
level min real measure  
1

**large-signal voltage gain  $A_{VOL}$**   
 $A_{VOL}$

The minimum guaranteed ratio of the maximum output voltage swing to the change in input voltage, of a voltage amplifier at specified supply voltage and load resistance.

AAE102-005 = supply voltage

AAE212-005 = load resistance

**AAF160-005 01 NR1..4 E06**  
level minTypMax integer measure  
dB

**common-mode rejection ratio  $k_{CMR}$**   
 $k_{CMR}$   
CMRR

The value as specified by level (minTypMax) of the ratio of the differential mode voltage amplification to the common-mode voltage amplification (in dB) of a differential amplifier over the operating temperature range at specified supply voltage.

AAE102-005 = supply voltage

IEC 60748-3 (1986)

**AAF161-005 01 NR3..3.3ES2 E06**  
level max real measure  
V/V

**supply voltage sensitivity  $k_{SVS}$**   
 $k_{SVS}$

The maximum absolute value of the ratio (in V/V) of the change in input offset voltage to the corresponding change in value of any one power-supply voltage, with all remaining power-supply voltages held constant, of an operational amplifier at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

**AAF162-005 02 NR1..4 E06**  
level min integer measure  
V/s

**slew rate SR**  
max change rate output voltage SR  
 $S_{VOM}$

The minimum guaranteed maximum rate of change of the output voltage (in V/s) of a voltage amplifier at specified load resistance, maximum output voltage swing and at reference conditions.

AAE212-005 = load resistance  
AAE995-005 = reference conditions

IEC 60748-3 (1986)

**AAF163-005 01 NR3..3.3ES2 E33**  
level min real measure  
 $\Omega$

**differential input resistance  $r_{id}$**

The minimum resistance (in ohms) between the inputs of a differential amplifier at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

**REMARKS:**

In order to be able to consider the input impedance as a pure resistance, the measurement signal frequency must be sufficiently low so that there are no significant phase differences between the voltages at the input terminals of the amplifier to be measured with or without the series resistor.

**AAF164-005 01 NR3 S..3.3ES2 E33**  
level min real measure  
 $\Omega$

**common-mode input resistance  $r_{ic}$**

The minimum resistance (in ohms) between the inputs in parallel and the electrical reference point of a differential amplifier at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

**AAF165-005 01 NR3 S..3.3ES2 E33**  
level typ real measure  
 $\Omega$

**output resistance  $r_{out}$**

The typical resistance (in ohms) at the output of a voltage amplifier at reference conditions.

AAE995-005 = reference conditions

**REMARKS:**

This is the resistance looking into the output terminal with the output at null.

This parameter is defined only under small-signal conditions at frequencies above a few hundred cycles to eliminate the influence of drift and thermal feedback.

**AAF166-005 01 NR3..3.3ES2 F03**  
level min real measure  
Hz

**unity-gain frequency  $f_1$**   
small-signal unity gain  $f_1$

The minimum value of the frequency (in Hz) at which the modulus of the voltage open-loop amplification of a voltage amplifier is equal to unity at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

**REMARKS:**

For amplifiers having 6 dB-per-octave rolloff, the frequency is also called unity gain bandwidth.

**AAF167-005 02 NR3..3.3ES2 F03**  
level min real measure  
Hz

**gain bandwidth product GB**  
gain bandwidth GB

The minimum value of the small-signal gain bandwidth product (in Hz) of a voltage amplifier at specified frequency and at reference conditions.

AAE029-005 = frequency

AAE995-005 = reference conditions

**REMARKS:**

For amplifiers having a 6 dB-per-octave rolloff, the gain-bandwidth product is constant within this area.

**AAF168-005 02 NR3..3.ES2 T07**  
level max real measure  
s

**total response time** **t\_tot**  
settling time  $t_{tot}$

The maximum value of the sum of delay time, slope time and ripple time (in s) of a voltage amplifier under small-signal conditions and compensated for unity gain at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

#### REMARKS:

The ripple time is the time interval between the end of the slope time and that instance at which the magnitude of the output signal reaches, for the last time, a specified level range containing the final output signal level. This level range is called ripple tolerance, and generally is 0,1 % of the final output signal.

**AAF169-005 01 X..3 A56**  
simple non-quantitative code

**amplified quantity** **amplified qnty**

Code of the quantity which is amplified, identifying a low-frequency amplifier.

PWA = power amplifier  
VTA = voltage amplifier

**AAF170-005 01 NR1..4 E06**  
level min integer measure  
dB

**power supply rejection ratio PSRR**  
supply voltage rejection ratio PSRR  
 $K_{SVR}$

The minimum absolute value of the ratio (in dB) of the change in any one power-supply voltage to the resulting change in input offset voltage, with all remaining power-supply voltages held constant, of an operational amplifier at reference conditions.

AAE995-005 = reference conditions

IEC 60748-3 (1986)

**AAF191-005 01 X..3 A56**  
simple non-quantitative code

**input configuration** **input config**

Code of the type of input configuration, identifying a voltage amplifier.

DFA = differential amplifier  
SSA = single-sided amplifier

**AAF192-005 01 X..3 A56**  
simple non-quantitative code

**coupling method** **coupling**

Code of the coupling method identifying a differential amplifier.

ACA = ac-coupled amplifier  
OPA = operational amplifier (dc-coupled)

**AAF193-005 02 NR1..4 G21**  
level min integer measure  
dB

**sensitivity** **sensitivity**  
output sound pressure level sensitivity

The minimum sound pressure level of a loudspeaker (in dB), relative to the reference sound pressure level at any frequency within the effective frequency range referred to a sinusoidal input power of 1 W and to a distance of 1 m on the reference axis.

**AAF202-005 01 X..3 A91**  
simple non-quantitative code

**chromaticity** **chromaticity**

Code of the chromaticity type of a display tube.

COL = colour display tube  
MCR = monochrome display tube

**AAF203-005 01 NR3..3.3ES2 E01**  
level max real measure  
A

**anode current average** **I<sub>a(av)</sub>**  
I<sub>a(av)</sub>

The maximum limiting long term average anode current (in A) of a display tube.

IEC 60050 (531) (1974)

**REMARKS:**

'long term' means that the image is stationary for an indefinite period of time, as during the display of test pictures, computer images, teletext data or stationary television scenes lasting longer than 30 s.

**AAF204-005 01 NR3..3.3ES2 E01**  
level max real measure  
A

**anode current peak** **I<sub>a(peak)</sub>**  
I<sub>a(peak)</sub>

The maximum limiting long term peak anode current (in A) of a display tube.

IEC 60050 (531) (1974)

**REMARKS:**

'long term' means that the image is stationary for an indefinite period of time, as during the display of test pictures, computer images, teletext data or stationary television scenes lasting longer than 30 s.

**AAF205-005 02 NR1..4 Q56**  
level nom integer measure  
1

**vertical resolution** **resolution V**  
resolution V

The number of visible horizontal lines of a display tube.

IEC 60050 (531) (1974)

**REMARKS:**

Measured with the shrinking raster method at screen centre.

**AAF206-005 01 NR2 S..3.3 E06**  
level miNoMax real measure  
V

**grid 2 voltage** **V<sub>g2</sub>**  
V<sub>g2</sub>

The value as specified by level (miNoMax) of the direct voltage (in V), on grid 2 of a monochrome display tube.

**REMARKS:**

All voltages relative to grid 1 (cathode drive) to the cathode (grid drive).

**AAF207-005 02 NR3 S..3.3ES2 E01**  
level minMax real measure  
A

**output short-circuit current** **I<sub>OS</sub>**  
dynamic output current I<sub>OS</sub>

The value as specified by the level (minMax) of the output current (in A) of a digital TTL IC, when an output is short-circuited, at maximum supply voltage, and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

**NOTES**

- 1 Not more than one output should be shorted at a time.
- 2 The duration of the short-circuit should not exceed 1s.

AAE958-005 = temperature T<sub>1</sub>

AAE959-005 = temperature T<sub>2</sub>

**REMARKS:**

The output short-circuit current was intended originally to reassure the TTL user that the device would withstand accidental grounding e.g. during in-circuit testing.

This parameter has become a measure of the ability of the circuit to charge the line capacitance and is used to calculate propagation delays.

In CMOS devices there is no need to specify this parameter because the purely capacitive loads allow extrapolation of the ac parameters to calculate the increase in propagation delay.

**AAF208-005 01 NR2 S..3.3 E06**  
level min real measure  
V

**positive-going threshold V<sub>IT+</sub>**  
V<sub>IT+</sub>  
V<sub>ITP</sub>

The minimum input voltage level (in V) of a combinatorial, sequential or interface function of an IC that, when crossed with a rising input voltage, enables an output to change its logic state in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF209-005 01 NR2 S..3.3 E06**  
level max real measure  
V

**negative-going threshold V<sub>IT-</sub>**  
V<sub>IT-</sub>  
V<sub>ITN</sub>

The maximum input voltage level (in V) of a combinatorial, sequential or interface function of an IC that, when crossed with a falling input voltage, enables an output to change its logic state in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF210-005 01 NR3..3.3ES2 E06**  
level min real measure  
V

**hysteresis V<sub>hys</sub>**  
V<sub>hys</sub>

The minimum difference (in V) between the positive-going and negative-going threshold voltages of a combinatorial, sequential or interface function of an IC in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF211-005 01 NR3..3.3ES2 F03**  
level max real measure  
Hz

**maximum clock frequency f<sub>clk(max)</sub>**  
f<sub>clk(max)</sub>

The maximum clock frequency (in Hz) at 50 % duty cycle, which may be applied to a combinatorial, sequential or interface function or a register function of an IC, in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

**AAF212-005 02 NR3 S..3.3ES2 T07**  
level min real measure  
s

**set-up time t<sub>su</sub>**  
t<sub>su</sub>

The minimum time interval (in s) between application of a signal that is maintained at an input terminal and a subsequent active transition of the corresponding timing pulse of a combinatorial, sequential or interface function of an IC in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

#### NOTES

1 The set-up time is the actual time between two signals and may be insufficient to accomplish the intended result. A minimum value is specified that is the shortest interval for which correct operation of the digital circuit is guaranteed.

2 The set-up time may have a negative value, in which case the minimum limit defines the longest interval (between the active transition and the application of the other signal) for which interval correct operation of the digital circuit is guaranteed.

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)



**AAF213-005 02 NR3 S..3.3ES2 T07**  
level min real measure  
s

**hold time** **t<sub>h</sub>**  
t<sub>h</sub>

The minimum time interval (in s) during which a signal is retained at an input terminal after the subsequent active transition of the corresponding timing signal of a combinatorial, sequential or interface function of an IC in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

#### NOTES

1 The hold time is the actual time between two signals and may be insufficient to accomplish the intended result. A minimum value is specified that is the shortest interval for which correct operation of the digital circuit is guaranteed.

2 The hold time may have a negative value, in which case the minimum limit defines the longest interval (between the active transition and the application of the other signal) for which interval correct operation of the digital circuit is guaranteed.

AAE958-005 = temperature T<sub>1</sub>

AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF214-005 02 NR3..3.3ES2 T07**  
level min real measure  
s

**output enable time** **t<sub>lz</sub>**  
t<sub>lz</sub>  
t<sub>oe</sub>

The minimum time interval (in s) between application of a signal that is maintained at an input terminal and causes an output terminal to change from a high impedance (off) state to either of the defined active levels (HIGH or LOW) of a combinatorial, sequential or interface function of an IC in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>

AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF215-005 02 NR3..3.3ES2 T07**  
level max real measure  
s

**output disable time** **t<sub>hz</sub>**  
t<sub>hz</sub>  
t<sub>od</sub>

The maximum time interval (in s) between application of a signal that is maintained at an input terminal and causes an output terminal to change from either of the defined active levels (HIGH or LOW) to a high impedance (off) state, of a combinatorial, sequential or interface function of an IC in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>

AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF216-005 02 NR3..3.3ES2 T07**  
level min real measure  
s

**pulse width HIGH** **t<sub>WH</sub>**  
pulse duration HIGH t<sub>WH</sub>

The minimum pulse width (in s) at the minimum HIGH-level required for correct operation, applied to a combinatorial, sequential or interface function of an IC, in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>

AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF217-005 02 NR3..3.3ES2 T07**  
level min real measure  
s

**pulse width LOW** **t<sub>WL</sub>**  
pulse duration LOW t<sub>WL</sub>

The minimum pulse width (in s) at the minimum LOW-level required for correct operation, applied to a combinatorial, sequential or interface function of an IC, in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>

AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF218-005 02 NR3..3.3ES2 T07**  
level nom real measure  
s

**metastable window** **t<sub>meta</sub>**  
t<sub>meta</sub>

The nominal time interval (in s) in which an inappropriate excitation gives rise to a metastable pattern at the output of a combinatorial, sequential or interface function of an IC, in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

**AAF219-005 02 NR3..3.3ES2 T07**  
level min real measure  
s

**recovery time** **t<sub>rec</sub>**  
removal time t<sub>rec</sub>

The minimum time interval (in s) between the trailing edge of an asynchronous control input pulse and the reference point on the activating edge of a synchronous (clock) input pulse so that the combinatorial, sequential or interface function of an IC will respond to the synchronous input in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

**AAF221-005 01 M..3 A56**  
simple non-quantitative code

**bus structure** **bus structure**

Code identifying the bus structure of a microprocessor.

MUL = multiple bus structure (Harvard)  
SIN = single bus structure (von Neumann)

**AAF222-005 01 M..8 A56**  
simple non-quantitative code

**instruction set architecture** **instr set arch**

Code identifying the instruction set architecture of a microprocessor.

CISC = complex instruction set computer  
RISC = reduced instruction set computer

**AAF223-005 02 NR1..4 F01**  
level nom integer measure  
1

**machine cycle** **M**  
number of clock periods M

The number of internal clock periods in which a microcontroller or microprocessor carries out a memory read or write operation.

**AAF224-005 01 NR3..3.3ES2 F03**  
level minMax real measure  
Hz

**clock frequency** **f<sub>clk</sub>**  
f<sub>clk</sub>

The value as specified by the level (minMax) of the clock frequency (in Hz) which may be applied to a microcontroller or microprocessor in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

**AAF225-005 01 NR3..3.3ES2 F03**  
level minMax real measure  
Hz

**internal clock frequency** **f<sub>clk(int)</sub>**  
f<sub>clk(int)</sub>

The value as specified by the level (minMax) of the internal clock frequency (in Hz) of a microcontroller or microprocessor in a temperature range between specified temperatures T<sub>1</sub> and T<sub>2</sub>.

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

**AAF226-005 01 NR1..4 J01**  
level nom integer measure  
bit

**address bus width** **addr bus width**  
addr bus width

The width of the address bus (in bit) of a microcontroller or microprocessor.

**AAF227-005 01** **NR1..4** **J01**  
level nom integer measure  
bit

**data bus width** **data bus width**  
data bus width

The width of the data bus (in bit) of a microcontroller or microprocessor.

**AAF228-005 02** **NR3..3.3ES2** **J01**  
level nom real measure  
1

**addressable storage size** **N\_word**  
N<sub>word</sub>

The number of words of the storage capacity of the program memory that a microprocessor or microcontroller can access via its corresponding external address bus.

#### REMARKS:

The addressable storage size equals  $2^n$ , in which n equals the address bus width (in bit).

**AAF229-005 02** **NR3..3.3ES2** **J05**  
level nom real measure  
i/s

**instruction rate** **Mips**  
Mips

The instruction handling speed (in i/s) at specified externally applied maximum clock frequency, of a microcontroller or microprocessor.

#### NOTE

The instruction handling speed is determined by the kind of test program used.

ISO/IEC2382-1 (1993)

**AAF230-005 02** **NR1..4** **Q56**  
level nom integer measure  
1

**number of internal registers** **N\_reg**  
N<sub>reg</sub>

The number of internal registers of a microcontroller or microprocessor.

**AAF231-005 02** **M..8** **A56**  
simple non-quantitative code

**PLD programmability** **programmability**

Code identifying the programmability of a PLD.

EEPLD = \*electrically erasable PLD  
EPLD = erasable PLD  
LDPLD = loadable PLD  
MPLD = mask programmed PLD  
OTPLD = one time programmable PLD  
UVPLD = \*UV erasable PLD

**AAF232-005 02** **NR3..3.3ES2** **T07**  
level min real measure  
s

**output data-valid time** **t\_data**  
t<sub>data</sub>

The minimum time interval (in s) during which output data continues to be valid following a change of input conditions that could cause the output data to change at the end of the interval applicable to a storage IC in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

IEC 60748-2 (1997)

**AAF233-005 01** **X..3** **A56**  
simple non-quantitative code

**RAM type** **RAM type**

Code identifying a RAM function of an IC.

DRM = DRAM  
SRM = SRAM

**AAF234-005 01** **M..8** **A56**  
simple non-quantitative code

**register type** **register type**

Code identifying a register function of an IC.

FIFO = first-in first-out register  
LIFO = last-in first-out register  
SHR = shift register

**AAF235-005 01** **M..8** **A55**  
simple non-quantitative code

**virginity state**  
unprogrammed state

Code identifying the logic state of the outputs of a virgin (unprogrammed) or erased EPROM.

HIGH = HIGH-state  
LOW = LOW-state

**AAF240-005 01** **M..8** **A57**  
simple non-quantitative code

**conductor finish** **conductor finsh**

Code of the finish material of a conductive part of a conductor.

Ag = silver  
Ni = nickel  
Sn = tin

**AAF236-005 02** **M..8** **A56**  
simple non-quantitative code

**ROM programmability** **ROM prog**

Code identifying the programmability of a ROM.

EEPROM = \*electrically erasable ROM  
EPROM = erasable ROM  
MROM = mask programmed ROM  
OTPROM = one time programmable ROM  
UVPROM = \*UV erasable ROM

**AAF237-005 01** **NR2..3.3** **E01**  
level max real measure  
A

**programming current** **I\_PP**  
I<sub>PP</sub>

The maximum value of the current (in A) sunk by the programming input of an EPROM during programming at the reference temperature.

**AAF238-005 01** **NR2..3.3** **E06**  
level minMax real measure  
V

**programming voltage** **V\_PP**  
V<sub>PP</sub>

The value as specified by level (minMax) of the programming voltage (in V) of an EPROM at the reference temperature.

**AAF239-005 01** **X..3** **A58**  
simple non-quantitative code

**bare/insulated** **bare/insulated**

Code indicating whether a conductor consists of a single bare conductor or contains one or more insulated conductive parts.

BAR = bare conductor  
INS = insulated conductor (wires and cables)

**AAF241-005 01** **M..8** **A57**  
simple non-quantitative code

**conductive material** **conductor mat**

Code of the material of a conductive part of a conductor.

Al = aluminium  
Cu = copper  
CuCd = copper-cadmium  
CuCdCr = copper-cadmium-chromium  
CuCr = copper-chromium  
CuNi = copper-nickel  
CuSn = bronze  
CuZn = brass  
Fe/Cu = iron core/copper mantle

**AAF242-006 01** **M..8** **A58**  
simple non-quantitative code

**conductor shape** **conductor shape**

Code of the shape of a conductive part of a conductor.

OVAL = oval  
RECTAN = rectangular  
ROUND = round  
SECTOR = sector

**AAF243-005 03** **M..8** **A58**  
simple non-quantitative code

**conductor configuration** **conductor confg**

Code of the configuration of a conductive part of a conductor.

BRAID = \*braided conductor  
BUNCH = \*bunched conductor  
LITZ = \*litze conductor  
SOLID = solid conductor  
STRAND = stranded conductor  
TINSEL = \*tinsel conductor

|                      |             |            |                      |                       |            |
|----------------------|-------------|------------|----------------------|-----------------------|------------|
| <b>AAF244-005 01</b> | <b>M..8</b> | <b>A58</b> | <b>AAF248-005 02</b> | <b>M..8</b>           | <b>A52</b> |
| simple               | string      |            | simple               | non-quantitative code |            |

**conductor size AWG**      **AWG code**

AWG code of the size of a conductive part of a conductor.

REMARKS:

For values see standard nominal diameters and cross-sectional areas of solid round wires.

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAF245-005 02</b> | <b>NR3..3.3ES2</b> | <b>E33</b> |
| level nom            | real measure       |            |
|                      | $\Omega/m$         |            |

**dc resistance**      **R<sub>dc</sub>**  
R<sub>dc</sub>  
R<sub>0</sub>

The nominal dc resistance per unit length (in  $\Omega/m$ ) of a conductive part of a conductor.

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAF246-005 02</b> | <b>NR3..3.3ES2</b> | <b>T03</b> |
| level miNoMax        | real measure       |            |
|                      | m                  |            |

**conductor diameter**      **d<sub>cond</sub>**  
d<sub>cond</sub>

The value as specified by level (miNoMax) of the diameter (in m) of a conductive part of a round conductor.

|                      |                    |            |
|----------------------|--------------------|------------|
| <b>AAF247-005 03</b> | <b>NR3..3.3ES2</b> | <b>T05</b> |
| level nom            | real measure       |            |
|                      | m <sup>2</sup>     |            |

**cross-section**      **A<sub>cross</sub>**  
A<sub>cross</sub>

The nominal cross-sectional area (in m<sup>2</sup>) of a conductive part of a conductor.

**insulating material**      **insulating mat**

ISO code of the material of the insulating layer of an insulated conductor.

E/TFE = \*ethylene/tetrafluoroethylene  
ECTFE = \*ethyl cellulose tetrafluoroethylene  
ENAM = enamel  
FEP = \*fluoroepoxy  
PA = \*polyamide  
PAPER = paper  
PE = \*polyethylene  
PFA = \*perfluoro alkoxyl alkane  
POLY = polymer  
PP = \*polypropylene  
PTFE = \*polytetrafluoroethylene  
PUR = \*polyurethane  
PVC = \*polyvinylchloride  
RUBBER = rubber  
TEXTILE = textile  
UP = \*unsaturated polyester

REMARKS:

Only the polymers are coded according to ISO.

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAF249-005 01</b> | <b>X..3</b>           | <b>A55</b> |
| simple               | non-quantitative code |            |

**cable/wire**      **cable/wire**

Code indicating the multiplicity of conductors of an insulated conductor.

CBL = cable (multi-conductor)  
IWR = insulated wire (single conductor)

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>AAF250-005 02</b> | <b>M..3</b>           | <b>A91</b> |
| simple               | non-quantitative code |            |

**colour code**      **colour code**

IEC code of the colour of the insulation layer of an insulated wire.

0 = black  
1 = brown  
2 = red  
22 = pink  
3 = orange  
4 = yellow  
5 = green  
55 = turquoise  
6 = blue  
7 = violet  
8 = grey  
9 = white

**AAF251-005 03 NR1 S..4 E06**  
 level min integer measure  
 V

**test voltage minimum U<sub>bd</sub>(min)**  
 minimum breakdown voltage U<sub>bd</sub>(min)  
 dielectric strength

The minimum value of the dc voltage (in V) which the insulation of an insulated conductor can withstand.

IEC 60851-5 (1996)

**AAF255-005 02 NR1..4 Q51**  
 level nom integer measure  
 1

**number of cable elements N<sub>elem</sub>**  
 N<sub>elem</sub>

The number of basic elements in a cable.

REMARKS:

The type of basic element is defined by AAF253-005 and AAF256-005.

**AAF252-005 01 M..8 A58**  
 simple string

**MIL cable type MIL code**

MIL code of the type of a cable.

REMARKS:

For values see naming document.

**AAF256-005 01 M..3 A58**  
 simple non-quantitative code

**RF cable element RFcable element**

Code indicating the type of basic elements of an RF cable.

CX = coaxial cable (concentric)

PP = parallel pairs

PPS = parallel pairs screened

**AAF253-005 01 M..3 A58**  
 simple non-quantitative code

**LF cable element LFcable element**

Code indicating the type of basic elements which an LF cable contains.

1 = singles  
 1S = singles screened  
 2 = pairs  
 2S = pairs screened  
 3 = triples  
 3S = triples screened  
 4 = quads  
 4S = quads screened  
 5 = quintuples  
 5S = quintuples screened

**AAF257-005 03 M..8 A58**  
 simple non-quantitative code

**dielectric construction diel config**

Code of the construction of the dielectric of an RF cable.

AIR = air-spaced dielectric

FOAM = \*foam

SEMAIR = semi-air-spaced dielectric

SOLID = solid dielectric

THREAD = \*thread

TUBE = \*tube/thread

**AAF254-005 01 M..3 A58**  
 simple non-quantitative code

**cable configuration CBL config**

Code of the configuration of a cable.

BND = bundled cable

FLT = flat cable

**AAF258-005 01 NR1..4 E06**  
 level nom integer measure  
 V

**working voltage U**  
 U

The nominal ac rms voltage (in V) between any two conductors, for which a cable is designed.

IEC 60183 (1984)

**AAF259-005 01 NR3..3.3ES2 E09**  
 level nom real measure  
 F/m

**capacitance between conductors C<sub>c-c</sub>**  
 C<sub>c-c</sub>

The nominal capacitance per unit length (in F/m) between a pair of conductors of a cable.



**AAF260-005**    **02**    **NR3..3.ES2**    **E44**  
                          level miNoMax    real measure  
                           $\Omega$

**characteristic impedance**    **|Z|**  
                                                  |Z|

The value as specified by level (miNoMax) of the modulus of the characteristic impedance (in ohms) of a pair of conductors of a cable or of a radio-frequency connector at specified frequency.

AAE029-005 = frequency

**AAF261-005**    **02**    **NR1..4**    **F10**  
                          level nom    integer measure  
                                                    dB/m

**attenuation**                           **attenuation**  
                                                  attenuation

The nominal power attenuation (in dB/m) of a pair of conductors of a cable at specified frequency.

AAE029-005 = frequency

IEC 60096-1 (1986)

**AAF262-005**    **01**    **M..3**    **A56**  
                          simple    non-quantitative code

**wire application**                           **application**

The code of the application of an insulated wire.

CNT = connecting wire  
 WND = winding wire

**AAF264-005**    **01**    **M..8**    **A56**  
                          simple    non-quantitative code

**driving method**                           **@MUX-ratio**  
                          drive method    @MUX-ratio

Code of the driving method (ratio) as applied to a liquid crystal display or module, as a variable.

01:08                           = 01:08  
 0.086111111                = 0.086111111  
 0.111111111                = 0.111111111  
 0.180555556                = 0.180555556  
 0.208333333                = 0.208333333  
 01:01                        = DD direct drive  
 01:02                        = 01:02  
 01:03                        = 01:03  
 01:16                        = 01:16  
 01:32                        = 01:32  
 01:04                        = 01:04

**AAF265-005**    **01**    **M..3**    **A53**  
                          simple    non-quantitative code

**packing arrangement**    **packing arrange**

Code of the arrangement of products in the first level packing.

ARR = arranged  
 CON = \*concertina  
 LSE = loose  
 MET = metal strip  
 TAP = taped  
 WND = \*wound

**AAF266-005**    **02**    **M..8**    **A53**  
                          simple    non-quantitative code

**inductance level**                           **ind level**

Code of the inductance level of a fixed resistor.

LI = low inductance  
 NI = normal inductance

**AAF267-005**    **01**    **NR3..3.ES2**    **T03**  
                          level nom    real measure  
                                                    m

**inner tape spacing**                           **b\_tape**  
                                                    b<sub>tape</sub>

The nominal distance (in m) between the inside of the two tapes used for taped products with axial leads.

IEC 60286-1 (1997)

**AAF268-005**    **01**    **M..3**    **A53**  
                          simple    non-quantitative code

**orientation**                           **orientation**

Code of the longitudinal orientation of taped products.

F = forward  
 R = reverse

#### REMARKS:

The orientation applies to:

- the anode of polarised components.
- the collector/drain of transistors.
- terminal number one of components with more than three terminals

**AAF269-005 02** **M..3** **A53**  
simple non-quantitative code

**marking method** **marking method**

Code of the marking method on the packing of products.

BAR = bar coded  
CHA = character coded  
COL = colour coded

**AAF270-005 01** **M..3** **A53**  
simple string

**packing level** **@packing level**

Code of the packing level for products.

**NOTE**

The first level of packing is that enclosing one or more products. Subsequent higher levels of packing enclose one, or more, of the immediately lower level of packing.

**REMARKS:**

This data element must be used in combination with AAE111 (packing type) Values can be:

- 1 = first level
- 2 = second level
- 3 = third level etc.

**AAF271-005 01** **M..8** **A58**  
simple non-quantitative code

**screen shape** **screen shape**

Name indicating the shape of the screen of a TV picture or monitor tube.

CONVEX = conventional  
FLAT = flat (face-plate radius > 1000 mm)  
FLATSQR = flat square (as flat but with corner radius 10mm)

**AAF272-005 01** **NR1..4** **T03**  
level nom integer measure  
inch

**tube size (inch)** **d\_gls(i)**  
d<sub>gls(i)</sub>

The nominal overall outer diagonal (in inch) of the glass envelope of a display tube, used as product identification.

**AAF273-005 02** **M..8** **A58**  
simple non-quantitative code

**display format** **display format**

Name of the display format for which the deflection unit of a monitor display tube is designed.

landscape = landscape (horizontal)  
portrait = portrait (vertical)

**AAF274-005 01** **NR3..3.3ES2** **F03**  
level max real measure  
Hz

**line frequency** **f\_line**  
f<sub>line</sub>

The maximum line frequency (in Hz) which may be applied to a deflection unit for monitor tubes, at specified ambient temperature.

AAE014-005 = ambient temperature

**REMARKS:**

The line frequency is limited by the maximum operating copper temperature of the deflection coils.

**AAF275-002 01** **NR1..4** **H02**  
level nom integer measure  
Cel

**junction stress temperature** **T\_stress(junc)**  
virtual junction stress temperature T<sub>stress(junc)</sub>

The nominal junction temperature (in Cel) of a transistor, diode, trigger device, optoelectronic device or integrated circuit during stress.

**AAF276-002 01** **NR1 S..4** **H02**  
level min integer measure  
Cel

**stress temperature min** **T\_stress(min)**  
T<sub>stress(min)</sub>

The minimum temperature (in Cel) applied to a component during cycle stress.

**REMARKS:**

See AAF277-002 for the maximum stress temperature.

**AAF277-002 01 NR1 S..4 H02**  
level max integer measure  
Cel

**stress temperature max T\_stress(max)**  
T<sub>stress(max)</sub>

The maximum temperature (in Cel) applied to a component during cycle stress.

REMARKS:

See AAF276-002 for the minimum stress temperature.

**AAF278-002 03 NR1 S..4 H02**  
level nom integer measure  
Cel

**stress ambient temperature T\_stress(amb)**  
stress ambient free air temperature T<sub>stress(amb)</sub>

The nominal ambient free air temperature (in Cel) applied to a component during high temperature life test.

**AAF279-002 01 NR1..4 K02**  
level nom integer measure  
%

**stress relative humidity RH\_stress**  
RH<sub>stress</sub>

The nominal value of the ambient humidity (in %) relative to saturation humidity, applied to a component during humidity resistance stress.

REMARKS:

Relative humidity: Actual humidity by volume, divided by humidity by volume at saturation, at the same temp.

Humidity by volume: Mass of water vapour divided by the volume of the gaseous mixture.

**AAF281-005 01 NR1..4 E06**  
level max integer measure  
V

**limiting element voltage (ac) U\_max(ac)**  
limiting voltage (ac) U<sub>max(ac)</sub>

The maximum limiting ac voltage (in V) that may be applied to a resistor.

**AAF282-005 03 NR1..4 H01**  
level nom integer measure  
%

**thermal sensitivity tolerance B\_25/85(tol)**  
B<sub>25/85</sub> tolerance B<sub>25/85(tol)</sub>

The nominal tolerance on the thermal sensitivity index (in %) identifying a NTC thermistor.

IEC 60539-1 (2002)

REMARKS:

Used only in cases of equal positive and negative tolerance values.

**AAF283-005 02 NR3..3.3ES2 T05**  
level nom real measure  
m<sup>2</sup>

**minimum cross-sectional area A\_min**  
A<sub>min</sub>

The nominal value of the minimum cross-sectional area (in m<sup>2</sup>) of a soft magnetic part.

**AAF284-005 01 NR1..4 E17**  
simple integer measure  
A/m

**magnetic field strength @H**  
@H

The magnetic field strength (in A/m) applied to a magnetic part or magnetic material as a variable.

**AAF286-005 01 NR3..3.3ES2 K02**  
level nom real measure  
kg/m<sup>3</sup>

**density \$r\_d**  
ρ<sub>d</sub>

The nominal density (in kg/m<sup>3</sup>) of a material.

**AAF287-005 01 NR1..4 E17**  
level minTypMax integer measure  
A/m

**coercivity H\_cB**  
H<sub>cB</sub>

The value as specified by level (minTypMax) of the magnetic field strength (in A/m) applied to a hard magnetic material, necessary to bring the flux density from saturation to zero by a monotonically changing field.

IEC 60050 (221) (1990)

**AAF288-005**    **01**    **NR1..4**    **E17**  
                          level minTypMax    integer measure  
                                                  A/m

**coercivity H<sub>cJ</sub>**                    **H<sub>cJ</sub>**  
                                                  H<sub>cJ</sub>

The value as specified by the level (minTypMax) of the magnetic field strength (in A/m) applied to a hard magnetic material, necessary to bring the polarisation from saturation to zero by a monotonically changing field.

IEC 60050 (221) (1990)

**AAF292-005**    **01**    **NR3..3.3ES2**    **E19**  
                          level minTypMax    real measure  
                                                  T

**remanent flux density B<sub>r</sub>**  
                          remanence                    B<sub>r</sub>

The value as specified by level (minTypMax), of the flux density (in T) remaining in a magnetised hard magnetic material when, in the absence of a self-demagnetising field, the magnetic field strength is brought to zero.

IEC 60050 (221) (1990)

**AAF289-005**    **01**                    **NR3..3.3ES2**    **E17**  
                          level nom    real measure  
                                                  A/m

**field strength at (BH)<sub>max</sub>**    **H<sub>d</sub>**  
                                                  H<sub>d</sub>

The nominal value of the magnetic field strength (in A/m) at which the BH product of a hard magnetic material is maximum.

**AAF293-005**    **01**                    **NR3..3.3ES2**    **E19**  
                          level nom    real measure  
                                                  T

**flux density at (BH)<sub>max</sub>**    **B<sub>d</sub>**  
                                                  B<sub>d</sub>

The nominal value of the magnetic flux density (in T) at which the BH product of a hard magnetic material is maximum.

**AAF290-005**    **01**                    **NR3..3.3ES2**    **E17**  
                          level min    real measure  
                                                  A/m

**saturation field strength H<sub>s</sub>**  
                                                  H<sub>s</sub>

The minimum value of the magnetic field strength (in A/m) at saturation magnetisation of a hard magnetic material.

**AAF294-005**    **02**                    **NR1..4**    **E25**  
                          level nom    integer measure  
                                                  1

**recoil permeability μ<sub>rec</sub>**  
                                                  μ<sub>rec</sub>

The nominal value of the permeability corresponding to the slope of the recoil line of a hard magnetic material.

**AAF291-005**    **01**                    **NR3 S..3.3ES2**    **H03**  
                          level typ    real measure  
                                                  (A/m)/K

**temperature coefficient α<sub>HcJ</sub>**    **α<sub>HcJ</sub>**  
                                                  α<sub>HcJ</sub>

The typical value of the mean temperature coefficient of the polarisation coercivity (in (A/m)/K) of a hard magnetic material over a temperature range, between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
 AAE959-005 = temperature T<sub>2</sub>

$$\alpha_{H_{cJ}} = \frac{H_{cJ2} - H_{cJ1}}{(T_2 - T_1)}$$

where H<sub>cJ1</sub> and H<sub>cJ2</sub> are the coercivities at temperature T<sub>1</sub> and T<sub>2</sub> respectively.

#### NOTE

The recoil line is a straight line approximating the sub-hysteresis loop which is traversed when the magnet is saturated and then subjected to demagnetising fields less than the coercivity.

IEC 60050 (221) (1990)

**AAF295-005 01 NR3..3.3ES2 E30**  
level minTypMax real measure  
J/m<sup>3</sup>

**BH product max** **BH\_max**  
BH<sub>max</sub>

The value as specified by level (minTypMax), of the maximum product of the magnetic flux density and magnetic field strength (in J/m<sup>3</sup>) attained on the demagnetisation curve of a hard magnetic material.

**NOTE**

The BH product is equal to twice the total energy stored in the external field of the magnet per unit volume of the magnet.

IEC 60050 (221) (1990)

**AAF298-005 02 NR3..3.3ES2 E25**  
level max real measure  
1

**loss factor** **tanδ/\$m\_r**  
tan δ/μ<sub>r</sub>

The maximum value of the tangent of the magnetic loss angle divided by the relative permeability of a soft magnetic material at specified ambient temperature and frequency.

AAE014-005 = ambient temperature

AAE029-005 = frequency

$$\frac{\tan \delta}{\mu_r} = \frac{\mu''}{(\mu')^2}$$

IEC 60050 (221) (1990)

**AAF296-005 01 NR3..3.3ES2 E30**  
level minTypMax real measure  
J/m<sup>3</sup>

**B\_r x H\_cJ product** **B\_rxH\_cJ**  
B<sub>r</sub> x H<sub>cJ</sub>

The value as specified by the level (minTypMax), of the product of remanent flux density B<sub>r</sub> and coercivity H<sub>cJ</sub> (in J/m<sup>3</sup>) of a hard magnetic material

**AAF299-005 02 NR3..3.3ES2 E25**  
level max real measure  
1

**disaccommodation factor** **D\_F**  
D<sub>F</sub>

The maximum fractional decrease of permeability of a soft magnetic material over a time interval between T<sub>1</sub> and T<sub>2</sub> after demagnetisation divided by the permeability at T<sub>1</sub> and by the logarithm of t<sub>2</sub>/t<sub>1</sub>.

**AAF297-005 01 NR3 S..3.3ES2 H03**  
level typ real measure  
%/K

**temperature coefficient Br** **\$a\_Br**  
α<sub>Br</sub>

The typical value of the mean temperature coefficient of the remanence relative to the remanence at the reference temperature (in %/K) of a hard magnetic material over a temperature range, between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>

AAE959-005 = temperature T<sub>2</sub>

$$\alpha_{Br} = \frac{B_{r1} - B_{r2}}{B_{ref} (T_2 - T_1)}$$

where B<sub>r1</sub> and B<sub>r2</sub> are the remanences at temperatures T<sub>1</sub> and T<sub>2</sub> respectively.

AAE014-005 = ambient temperature

AAF312-005 = time t<sub>1</sub>

AAF313-005 = time t<sub>2</sub>

$$D_F = \frac{\mu_1 - \mu_2}{(\mu_1)^2 \lg \frac{t_2}{t_1}}$$

where μ<sub>1</sub> and μ<sub>2</sub> are the values of the relative permeability at the beginning and the end of the given interval respectively.

IEC 60050 (221) (1990)

**AAF300-005 01 NR2..3.3 H07**  
level max real measure  
W/m<sup>3</sup>

**specific total loss P\_V**  
total loss volume density P<sub>V</sub>

The maximum total power absorbed divided by the volume (in W/m<sup>3</sup>) of a soft magnetic material at specified frequency, ambient temperature and peak flux density.

#### NOTE

The total loss may include: eddy current loss, hysteresis loss, rotational hysteresis loss, residual loss, gyromagnetic resonance loss.

AAE014-005 = ambient temperature

AAE029-005 = frequency

AAE768-005 = peak flux density

IEC 60050 (221) (1990)

**AAF303-005 01 NR3..3.3ES2 E09**  
level minTypMax real measure  
F

**diode upper capacitance C\_d1**  
C<sub>d1</sub>

The value as specified by level (minTypMax) of the upper capacitance (in F) between the terminals of a variable capacitance diode at specified values of the lower reverse voltage, frequency and temperature of a temperature type.

AAE029-005 = frequency  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE961-005 = voltage V<sub>1</sub>

#### REMARKS:

A variable capacitance diode varies its characteristic capacitance from a high value to a lower value when the applied reverse voltage increases from a low value to a higher value and vice versa.

**AAF301-005 02 NR3..3.3ES2 T07**  
level max real measure  
s

**reverse recovery time (t)  
t<sub>rr(l)</sub>**  
t<sub>rr(l)</sub>

The maximum reverse recovery time (in s) of a diode, when switched from a specified forward current to a specified reverse current at specified junction temperature.

AAE271-005 = junction temperature

AAE274-005 = forward current

AAE994-005 = reverse current

IEC 60747-2 (2000)

**AAF304-005 01 NR3..3.3ES2 E09**  
level minTypMax real measure  
F

**diode lower capacitance C\_d2**  
C<sub>d2</sub>

The value as specified by level (minTypMax) of the lower capacitance (in F) between the terminals of a variable capacitance diode at specified values of the upper reverse voltage, frequency and temperature of a temperature type.

AAE029-005 = frequency  
AAE683-005 = temperature type  
AAE685-005 = temperature  
AAE962-005 = voltage V<sub>2</sub>

#### REMARKS:

A variable capacitance diode varies its characteristic capacitance from a high value to a lower value when the applied reverse voltage increases from a low value to a higher value and vice versa.

**AAF302-005 01 NR3 S..3.3ES2 E06**  
level min real measure  
V

**breakdown voltage V\_(BR)R**  
V<sub>(BR)R</sub>

The minimum breakdown voltage (in V) at which a diode will commence avalanche breakdown, at specified reverse current and temperature of a temperature type.

AAE683-005 = temperature type

AAE685-005 = temperature

AAE994-005 = reverse current

#### REMARKS:

Sometimes measured under pulsed conditions to avoid excessive dissipation.



**AAF305-005 01 X..3 A56**  
simple non-quantitative code

**category of diode device diode device**

Code of the category to which a diode device belongs.

BRI = bridge rectifier  
DIO = diode  
VMP = voltage multiplier

**AAF306-005 01 NR3..3.3ES2 E25**  
level max real measure  
T<sup>-1</sup>

**hysteresis material constant \$h\_B**  
η<sub>B</sub>

The maximum value of the loss factor due to hysteresis divided by the peak value of the flux density (in T<sup>-1</sup>) of a soft magnetic material, operating in the Rayleigh region, at specified ambient temperature and frequency.

AAE014-005 = ambient temperature  
AAE029-005 = frequency

$$\eta = \frac{\tan \delta_h}{\mu_r B_{peak}}$$

where  $\tan \delta_h / \mu_r$  is the loss factor due to hysteresis and  $B_{peak}$  the value of the flux density.

IEC 60050 (221) (1990)

REMARKS:

Rayleigh region: In the graphic representation of the relation between the magnetic flux density and the magnetic field strength in a material, a region near the origin within which the flux density can be described by a quadratic function of the field strength.

**AAF307-005 02 NR3 S..3.3ES2 E25**  
level minTypMax real measure  
K<sup>-1</sup>

**temperature factor of permeability \$a\_F**  
temperature factor of reluctivity α<sub>F</sub>

The value as specified by level (minTypMax) of the negative of the change in the permeability due to a change in temperature, divided by that change in temperature (in K<sup>-1</sup>) of a soft magnetic material at specified frequency.

AAE029-005 = frequency

$$\alpha_F = - \frac{\frac{1}{\mu_\theta} - \frac{1}{\mu_{ref}}}{\theta - \theta_{ref}} = \frac{\mu_\theta - \mu_{ref}}{\mu_\theta \mu_{ref} (\theta - \theta_{ref})}$$

where  $\mu_\theta$  and  $\mu_{ref}$  are the permeabilities at temperatures  $\theta$  and  $\theta_{ref}$  respectively.

IEC 60050 (221) (1990)

**AAF308-005 01 NR3..3.3ES2 E19**  
level typ real measure  
T

**saturation flux density B\_s**  
B<sub>s</sub>

The typical value of the magnetic flux density (in T) at saturation of a soft magnetic material at specified ambient temperature.

ANSI/IEEE Std 100 (1988)

REMARKS:

1 Saturation:

The state of a material subjected to an external magnetic field so strong that the magnetic polarisation cannot be substantially increased by increasing that field.

IEC 60050 (901) (1996)

2 The saturation magnetisation is equal to the spontaneous magnetisation.

**AAF309-005 01 M..17 A52**  
simple string

**accessory name accessory name**

Name of the accessory of a soft magnetic part to be used in the assembly of inductors and transformers.

|                                                                    |                             |            |                                                          |                           |            |
|--------------------------------------------------------------------|-----------------------------|------------|----------------------------------------------------------|---------------------------|------------|
| <b>AAF311-007 01</b>                                               | <b>X..8</b>                 | <b>A57</b> | <b>AAF315-005 01</b>                                     | <b>NR3..3.3ES2</b>        | <b>E06</b> |
| simple                                                             | non-quantitative code       |            | level max                                                | real measure              |            |
| <b>material type</b>                                               | <b>material type</b>        |            | <b>anode voltage limiting</b>                            | <b>V<sub>a(lim)</sub></b> |            |
| Code of the type of material.                                      |                             |            |                                                          | V <sub>a(lim)</sub>       |            |
| ACO = acoustical                                                   |                             |            | The maximum limiting direct voltage (in V) on the        |                           |            |
| DIEL = dielectric and insulating                                   |                             |            | anode of a display tube.                                 |                           |            |
| MG = magnetic                                                      |                             |            |                                                          |                           |            |
| OP = opticalc                                                      |                             |            |                                                          |                           |            |
| PWL = printed-wiring laminate                                      |                             |            |                                                          |                           |            |
| TH = thermal-electric                                              |                             |            |                                                          |                           |            |
| <b>AAF312-005 02</b>                                               | <b>NR3..3.3ES2</b>          | <b>T07</b> | <b>AAF316-001 01</b>                                     | <b>NR3..3.3ES2</b>        | <b>T03</b> |
| simple                                                             | real measure                |            | level nom                                                | real measure              |            |
| <b>time t<sub>1</sub></b>                                          | <b>@t<sub>1</sub></b>       |            | <b>hole pitch</b>                                        | <b>p<sub>hole</sub></b>   |            |
|                                                                    | @t <sub>1</sub>             |            |                                                          | p <sub>hole</sub>         |            |
| The begin time t <sub>1</sub> (in s) of a time interval during     |                             |            | The nominal pitch (in m) of the holes of an              |                           |            |
| which a quantity is applied to a product, as a                     |                             |            | electric/electronic or electromechanical component       |                           |            |
| variable.                                                          |                             |            | parallel to the x-coordinate.                            |                           |            |
| REMARKS:                                                           |                             |            | <b>AAF317-001 01</b>                                     | <b>NR3..3.3ES2</b>        | <b>T03</b> |
| See AAF313-005 for the end time t <sub>2</sub> .                   |                             |            | level miNoMax                                            | real measure              |            |
|                                                                    |                             |            |                                                          | m                         |            |
| <b>AAF313-005 02</b>                                               | <b>NR3..3.3ES2</b>          | <b>T07</b> | <b>flange length</b>                                     | <b>l<sub>flange</sub></b> |            |
| simple                                                             | real measure                |            |                                                          | l <sub>flange</sub>       |            |
| <b>time t<sub>2</sub></b>                                          | <b>@t<sub>2</sub></b>       |            | The value as specified by level (miNoMax) of the         |                           |            |
|                                                                    | @t <sub>2</sub>             |            | length (in m) of the flange of a component in the x-     |                           |            |
| The end time t <sub>2</sub> (in s) of a time interval during which |                             |            | direction.                                               |                           |            |
| a quantity is applied to a product, as a variable.                 |                             |            | <b>AAF318-001 01</b>                                     | <b>NR3..3.3ES2</b>        | <b>T03</b> |
| REMARKS:                                                           |                             |            | level miNoMax                                            | real measure              |            |
| See AAF312-005 for the start time t <sub>1</sub> .                 |                             |            |                                                          | m                         |            |
| <b>AAF314-005 01</b>                                               | <b>NR3..3.3ES2</b>          | <b>E06</b> | <b>flange breadth</b>                                    | <b>b<sub>flange</sub></b> |            |
| level max                                                          | real measure                |            |                                                          | B <sub>flange</sub>       |            |
| <b>focusing voltage limiting</b>                                   | <b>V<sub>foc(lim)</sub></b> |            | The value as specified by level (miNoMax) of the         |                           |            |
|                                                                    | V <sub>foc(lim)</sub>       |            | breadth (in m) of the flange of a component in the y-    |                           |            |
| The design maximum limiting value of the direct                    |                             |            | direction.                                               |                           |            |
| voltage (in V), on grid 3 with respect to grid 1, for              |                             |            | <b>AAF319-001 01</b>                                     | <b>NR3..3.3ES2</b>        | <b>T03</b> |
| focusing of a colour display tube.                                 |                             |            | level miNoMax                                            | real measure              |            |
|                                                                    |                             |            |                                                          | m                         |            |
| <b>flange height</b>                                               | <b>h<sub>flg</sub></b>      |            | <b>flange height</b>                                     | <b>h<sub>flg</sub></b>    |            |
|                                                                    | h <sub>flg</sub>            |            |                                                          | h <sub>flg</sub>          |            |
| The value as specified by level (miNoMax) of the                   |                             |            | The value as specified by level (miNoMax) of the         |                           |            |
| height (in m) of the flange of an electric/electronic or           |                             |            | height (in m) of the flange of an electric/electronic or |                           |            |
| electromechanical component.                                       |                             |            | electromechanical component.                             |                           |            |

**AAF320-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**body diameter** **d\_body**  
d<sub>body</sub>

The value as specified by level (miNoMax) of the diameter (in m) of the body of an electric/electronic or electromechanical component.

**AAF321-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**pitch (x-axis)** **p\_x**  
p<sub>x</sub>

The nominal pitch (in m) of the terminals of an electric/electronic or electromechanical component parallel to the x-coordinate.

**AAF322-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**pitch (y-axis)** **p\_y**  
p<sub>y</sub>

The nominal pitch (in m) of the terminals of an electric/electronic or electromechanical component parallel to the y-coordinate.

**AAF323-005 01 M..8 A56**  
simple non-quantitative code

**interface compatibility compatibility**

The interface compatibility of the digital IC inputs and outputs with the peripheral circuits.

CMOS = directly compatible with CMOS circuits.  
TTL = directly compatible with TTL circuits.

**AAF324-005 01 M..35 A56**  
simple non-quantitative code

**instruction set instruction set**

Code identifying the instruction set of an IC microcontroller or microprocessor.

68000 = instruction set 68000  
8048 = instruction set 8048  
8048 enh = enhanced instruction set 8048  
8051 = instruction set 8051

**AAF325-005 01 M..35 A56**  
simple non-quantitative code

**interrupt type interrupt type**

Code identifying the interrupt type of a microcontroller or microprocessor.

external = externally vectored  
internal = internally vectored  
maskable = maskable  
non-mask = non-maskable  
priority = priority  
software = software generated

**AAF326-005 01 M..17 A56**  
simple non-quantitative code

**addressing mode addressing mode**

Code identifying the addressing modes of a microcontroller or microprocessor.

direct a = direct address  
immediat = immediate address  
indexed = indexed address  
indirect = indirect address  
relative = relative address

**AAF327-005 01 NR3..3.3ES2 J01**  
level nom real measure  
1

**on-chip memory n\_word(on-chip)**  
n<sub>word(on-chip)</sub>

The number of words specifying the size of an on-chip memory function of a microcontroller, of a specified storage type.

AAF334-005 = storage type

**AAF328-005 01 NR1..4 J01**  
level nom integer measure  
bit

**I/O bus width I/O bus width**  
I/O bus width

The width of the address bus (in bit) of a microcontroller or microprocessor, to supply an address for I/O purposes.

**AAF329-005 02** **NR1..4** **Q56**  
level nom integer measure  
1

**number of peripherals** **n\_peri**  
 $n_{\text{peri}}$

Number of peripherals of a microcontroller of a specified peripheral type.

AAF335-005 = peripheral type

**AAF330-005 01** **NR1..4** **Q62**  
level nom integer measure  
bit

**peripheral word size** **peri word size**  
peri word size

The number of bits applicable to a peripheral on a microcontroller of a specified peripheral type.

AAF335-005 = peripheral type

**AAF331-006 01** **NR3..3.3ES2** **T07**  
level max real measure  
s

**refresh time interval** **t\_rf**  
refresh time  $t_{\text{rf}}$   
refresh period  $t_{\text{ref}}$

The maximum time interval (in s) between the beginnings of successive signals that are intended to restore the level in a DRAM cell to its original level, in a temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE958-005 = temperature  $T_1$

AAE959-005 = temperature  $T_2$

JESD 100B.01 (2002)

**AAF332-005 03** **NR3 S..3.3ES2** **E01**  
level minTypMax real measure  
A

**data retention current** **I\_DDR**  
 $I_{\text{DDR}}$

The value as specified by level (minTypMax) of the supply current (in A) during data retention of an SRAM at specified supply voltage and an ambient temperature range between specified temperatures ( $T_1$  and  $T_2$ ).

AAE102-005 = supply voltage

AAE958-005 = temperature  $T_1$

AAE959-005 = temperature  $T_2$

**AAF333-005 01** **NR2 S..3.3** **E06**  
level min real measure  
V

**data retention voltage** **V\_DDR**  
 $V_{\text{DDR}}$

The minimum supply voltage (in V), applied to an SRAM, for which data integrity is guaranteed.

**AAF334-005 01** **M..8** **A56**  
simple non-quantitative code

**storage type** **@storage-type**

Code of the type of on-chip storage of a microcontroller.

EEPROM = electrically erasable ROM

MROM = mask programmed ROM

RAM = RAM

UVPRM = UV erasable ROM

**AAF335-005 01** **M..3** **A56**  
simple non-quantitative code

**peripheral type** **@peri type**

Code of the peripheral type of a microcontroller.

TIM = timer

ADC = analogue-digital converter

INT = external interrupt line

PIO = parallel I/O port

PWM = pulse-width modulated output line

SIO = serial I/O port

**AAF336-005 01 NR3 S..3.3ES2 E01**  
level max real measure  
A

**standby current chip disabled I<sub>SB</sub>**

standby current I<sub>SB</sub>  
I<sub>SBL</sub>  
I<sub>SBLL</sub>

The maximum standby supply current (in A) of an SRAM with the chip disabled, at specified input voltage, in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE224-005 = input voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

**REMARKS:**

Some static RAM's (SRAMS) are selected on standby current. These selections have then as suffix L and LL. The symbols of the respective standby current are then S<sub>BL</sub> and S<sub>BLL</sub>.

**AAF337-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**pitch circle diameter d<sub>p</sub>**

The nominal diameter (in m) of the pitch circle of the terminals of an electric, electronic or electromechanical component.

**AAF338-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**terminal breadth b<sub>term</sub>**

The nominal breadth (in m) of the terminals of an electric, electronic or electromechanical component.

**AAF339-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**terminal thickness t<sub>term</sub>**

The nominal thickness (in m) of the terminals of an electric, electronic or electromechanical component.

**AAF340-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**offset (y-axis) s<sub>y</sub>**

The nominal offset (in m) of the terminals of an electric, electronic or electromechanical component parallel to the y-coordinate.

**AAF341-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**offset (x-axis) s<sub>x</sub>**

The nominal offset (in m) of the terminals of an electric, electronic or electromechanical component parallel to the x-coordinate.

**AAF342-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**flange diameter d<sub>flg</sub>**

The value as specified by level (miNoMax) of the diameter (in m) of the flange of an electric/electronic or electromechanical component.

**AAF343-001 01 M..3 A52**  
simple non-quantitative code

**mounting method mounting-method**

Code of the mounting method of an electric/electronic or electromechanical component.

A = surface mounted  
B = inserted  
C = flange mounted  
D = stud mounted

**AAF344-001 01** **M..3** **A58**  
simple non-quantitative code

**body shape****body-shape**

Code of the shape of the body of an electric/electronic or electromechanical component.

A = rectangular  
B = elliptical shaped  
C = horizontal cylindrical  
D = vertical cylindrical  
E = spherical  
F = can shaped  
G = vert cylindrical hex flange  
H = vert cylindrical oval flange  
J = vert cylindrical circ flange  
K = rectangular rectangular flange  
L = vert cylindrical rect flange

**AAF345-001 01** **M..3** **A58**  
simple non-quantitative code

**terminal exit position SMD term-exit-posit**

Code indicating the exit position of the terminals of an electric/electronic or electromechanical component.

A = single 3  
B = end  
C = radial  
D = dual 3 (1+2)  
E = dual 4 (2+2)  
F = dual 4 (1+3)  
G = dual n  
H = triple  
J = quad

**AAF346-001 02** **M..3** **A58**  
simple non-quantitative code

**terminal exit position non-SMD term-exit-SMD**

Code indicating the exit position of the terminals of electric/electronic or electromechanical components.

A = axial  
B = radial  
C = two terminals on axis  
D = two terminals offset  
E = diagonal  
F = on circle  
G = four (x+y)  
H = upper  
J = one row  
K = dual  
L = grid array

**AAF347-001 02** **M..3** **A58**  
simple non-quantitative code

**terminal shape non-SMD****term-shape**

Code of the terminal shape of an electric/electronic or electromechanical component.

A = straight  
B = 90 deg bend  
C = 180 deg bend  
D = SIL offset bend  
E = DIL staggered bend  
F = DIL staggered offset bend  
G = QUIL staggered offset bend

**AAF348-001 01** **M..3** **A58**  
simple non-quantitative code

**terminal shape SMD term-shape-SMD**

Code of the terminal shape of an electric/electronic or electromechanical component.

A = straight  
B = gull wing  
C = J-bend  
D = J-inverted bend  
E = S-bend  
F = wraparound  
G = C-bend  
H = cap  
J = metallized

**AAF349-001 01** **NR3..3.3ES2** **E33**  
level min real measure  $\Omega$

**insulation resistance** **R<sub>ins</sub>**  
R<sub>ins</sub>

The minimum insulation resistance (in ohms) of a fixed resistor measured according to the V-block method at specified direct voltage.

AAE013-005 = voltage (dc)

IEC 60115-1 (2001)

**REMARKS:**

The insulated resistance shall be measured according to the V-block method described in IEC 60115-1.



**AAF350-001 01 NR3 S..3.3ES2 H03**  
level minMax real measure  
K<sup>-1</sup>

**temperature coefficient TC**  
TC

The value as specified by the level (minMax) of the temperature coefficient (in K<sup>-1</sup>) of a fixed resistor in the temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

IEC 60115-1 (1999)

**AAF351-001 01 NR1..4 Q56**  
level nom integer measure  
1

**number of holes N<sub>hole</sub>**  
N<sub>hole</sub>

The number of holes in an electric, electronic or electromechanical component.

**AAF352-001 01 M..3 A52**  
simple non-quantitative code

**basic aspect basic aspect**

Code of the basic aspect of the shape of an electric/electronic or electromechanical component.

BSH = body shape  
MMT = mounting method  
TPN = terminal exit position non SMD  
TPS = terminal exit position SMD  
TSN = terminal shape non SMD  
TSS = terminal shape SMD

**AAF353-001 01 M..8 A58**  
simple string

**size code EIA size-EIA**

EIA code of the size of an electric/electronic component for placement on printed wiring board.

REMARKS:

The complete code consists of four numerical characters.

- the first two numerical characters represent the value of the length in inches.
- the second two numerical characters represent the value of the width in inches.

**AAF356-001 01 M..8 A58**  
simple non-quantitative code

**reference view**

**ref view**

The code indicating the angle of vision on a component.

BOTTOM = bottom  
FRONT = front  
SIDE = side  
TOP = top

**AAF357-001 01 M..3 A56**  
simple string

**terminal identifier**

**terminal id**

The character used to identify a specific terminal of a component.

REMARKS:

Rules should be established how the identifying process should take place.

**AAF358-001 01 M..3 A56**  
simple string

**swapability indicator swap ind**

The mark that indicates whether the terminal pairs or terminal groups of one function or one component may be exchanged.

REMARKS:

Rules should be established for the identification of swappable terminal pairs respectively terminal groups.

**AAF359-001 01 M..3 A56**  
simple string

**permutability indicator perm ind**

The mark that indicates whether the terminals of one function or one component may be exchanged.

REMARKS:

Rules should be established for the identification of permutable terminals.

|                                                                                                                                          |                        |                                             |            |                                                                                                                                          |                        |                                         |            |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------|------------|
| <b>AAF360-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>F     | <b>E09</b> | <b>AAF365-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>1 | <b>Q59</b> |
| <b>max range value</b>                                                                                                                   |                        | <b>max range value</b><br>max range value   |            | <b>normal average value</b>                                                                                                              |                        | <b>\$m</b><br>$\mu$                     |            |
| The maximum value of nominal capacitance (in F) of a capacitor that is available within a specific E-series.                             |                        |                                             |            | The value of the average in a Normal (Laplace-Gauss) probability distribution.                                                           |                        |                                         |            |
| <b>AAF361-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>F     | <b>E09</b> | <b>AAF366-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>1 | <b>Q59</b> |
| <b>min range value</b>                                                                                                                   |                        | <b>min range value</b><br>min range value   |            | <b>normal standard deviation</b>                                                                                                         |                        | <b>\$s</b><br>$\sigma$                  |            |
| The minimum value of nominal capacitance (in F) of a capacitor that is available within a specific E-series.                             |                        |                                             |            | The value of the standard deviation in a Normal (Laplace-Gauss) probability distribution.                                                |                        |                                         |            |
| <b>AAF362-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>m     | <b>T03</b> | <b>AAF367-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>1 | <b>Q59</b> |
| <b>centre of gravity (x-axis)</b>                                                                                                        |                        | <b>C_grav(x-axis)</b><br>$C_{grav(x-axis)}$ |            | <b>Poisson variance value</b>                                                                                                            |                        | <b>m</b><br>m                           |            |
| The nominal value of the x-displacement (in m) of the centre of gravity of a component related to the reference point of that component. |                        |                                             |            | The value of the variance in a Poisson probability distribution.                                                                         |                        |                                         |            |
| <b>AAF363-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>m     | <b>T03</b> | <b>AAF368-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR3..3.3ES2</b><br>real measure<br>1 | <b>Q59</b> |
| <b>centre of gravity (y-axis)</b>                                                                                                        |                        | <b>C_grav(y-axis)</b><br>$C_{grav(y-axis)}$ |            | <b>Poisson expectation value</b>                                                                                                         |                        | <b>m</b><br>m                           |            |
| The nominal value of the y-displacement (in m) of the centre of gravity of a component related to the reference point of that component. |                        |                                             |            | The value of the expectation in a Poisson probability distribution.                                                                      |                        |                                         |            |
| <b>AAF364-001</b>                                                                                                                        | <b>01</b><br>simple    | <b>M..17</b><br>non-quantitative code       | <b>A91</b> | <b>AAF369-001</b>                                                                                                                        | <b>01</b><br>level nom | <b>NR2..3.3</b><br>real measure<br>1    | <b>E06</b> |
| <b>probability distribution</b>                                                                                                          | <b>prob distr</b>      |                                             |            | <b>test voltage coefficient</b>                                                                                                          |                        | <b>k_V(test)</b><br>$k_{V(test)}$       |            |
| The name of a function giving the probability that a random variable takes any given value or belongs to a given set of values.          |                        |                                             |            | The factor by which the rated voltage has to be multiplied to obtain the value of the test voltage to be applied to a device under test. |                        |                                         |            |
| NOTE<br>The probability on the whole set of values of the random variable equals 1.                                                      |                        |                                             |            | CECC 30.000                                                                                                                              |                        |                                         |            |

BINOMIAL = binomial distribution  
 NORMAL = normal distribution  
 (Laplace-Gauss)  
 POISSON = Poisson distribution

|                   |           |              |            |                   |           |                 |            |
|-------------------|-----------|--------------|------------|-------------------|-----------|-----------------|------------|
| <b>AAF370-001</b> | <b>01</b> | <b>M..17</b> | <b>A59</b> | <b>AAF374-001</b> | <b>01</b> | <b>NR1..4</b>   | <b>Q56</b> |
|                   | simple    | string       |            |                   | level nom | integer measure |            |
|                   |           |              |            |                   |           | 1               |            |

**MIL specification**      **MIL spec**

MIL code of the specification in which an electric, electronic or electromechanical component is released under the MIL quality assessment system.

MIL 883-B

**REMARKS:**

MIL : Military specification or standard (USA)

Quality assessment :

The continuous surveillance of the manufacturer of a product to ensure that it conforms to the requirements of the specification to which it was made.

|                   |           |                       |            |
|-------------------|-----------|-----------------------|------------|
| <b>AAF371-001</b> | <b>01</b> | <b>M..8</b>           | <b>A58</b> |
|                   | simple    | non-quantitative code |            |

**adjuster placement**      **adjuster-place**

Code of the placement of an adjuster on an electric, electronic component for placement on printed-circuit boards.

|        |          |         |
|--------|----------|---------|
| BACK   | = back   | +Y axis |
| BOTTOM | = bottom | -Z axis |
| FRONT  | = front  | -Y axis |
| LEFT   | = left   | -X axis |
| RIGHT  | = right  | +X axis |
| TOP    | = top    | +Z axis |

|                   |           |                       |            |
|-------------------|-----------|-----------------------|------------|
| <b>AAF372-001</b> | <b>01</b> | <b>M..8</b>           | <b>A58</b> |
|                   | simple    | non-quantitative code |            |

**preformed lead**      **preformed lead**

Code of the preforming of leads to create a distance between the component and the seating plane.

|          |                 |
|----------|-----------------|
| BENT     | = bent (90 deg) |
| CROPPED  | = cropped       |
| FLANGE   | = with flange   |
| SHOULDER | = shoulder      |
| SNAPIN   | = snap-in       |
| SPACED   | = spaced        |
| STRAIGHT | = straight      |

|                   |           |                 |            |
|-------------------|-----------|-----------------|------------|
| <b>AAF373-001</b> | <b>01</b> | <b>NR1..4</b>   | <b>Q56</b> |
|                   | level nom | integer measure |            |
|                   |           | 1               |            |

**number of studs**      **N\_std**  
N<sub>std</sub>

The number of studs on an electric/electronic or electromechanical component designed for fastening.

**number of pitches (x-axis)**      **N<sub>p</sub>(x)**  
N<sub>p</sub>(x)

The number of pitches between the terminals of an electric/electronic or electromechanical component parallel to the x-coordinate.

|                   |           |                 |            |
|-------------------|-----------|-----------------|------------|
| <b>AAF375-001</b> | <b>01</b> | <b>NR1..4</b>   | <b>Q56</b> |
|                   | level nom | integer measure |            |
|                   |           | 1               |            |

**number of pitches (y-axis)**      **N<sub>p</sub>(y)**  
N<sub>p</sub>(y)

The number of pitches between the terminals of an electric/electronic or electromechanical component parallel to the y-coordinate.

|                   |           |                       |            |
|-------------------|-----------|-----------------------|------------|
| <b>AAF376-001</b> | <b>01</b> | <b>M..3</b>           | <b>A58</b> |
|                   | simple    | non-quantitative code |            |

**terminal cross-section shape**      **term-cross-shp**

Code of the cross-section shape of the terminals of an electric/electronic or electromechanical component.

|     |               |
|-----|---------------|
| CIR | = circular    |
| REC | = rectangular |

|                   |           |              |            |
|-------------------|-----------|--------------|------------|
| <b>AAF388-001</b> | <b>01</b> | <b>M..17</b> | <b>A58</b> |
|                   | simple    | string       |            |

**case size**      **case size**

Combination of the reference to a coding system for case sizes and the code of a specific case size within that system of a component.

**REMARKS:**

Example of a format for the reference to a JEDEC publication: JESD30(PLCC)

**AAF389-001 01 NR1..4 H07**  
level max integer measure  
W

**non-rep peak reverse power diss P\_ZSM**  
P<sub>ZSM</sub>  
P

The maximum non-repetitive peak reverse power dissipation (in W) of a stabilising diode at an exponential current function with specified front time, time to half-value and junction temperature prior to the application of the pulse.

AAE271-005 = junction temperature  
AAE332-005 = virtual front time  
AAE333-005 = virtual time to half-value

REMARKS:  
Current pulse according to the specification given in IEC 60060-1, section 8 (1989).

**AAF390-002 01 X..8 A56**  
simple non-quantitative code

**type of inductor inductor-type**

Code identifying the function or application for which the inductor has been developed initially.

ANT = antenna inductors  
CHOKE = choke  
COIL = coil  
DFL = deflection coil  
LINUNIT = linearity control unit  
SOL = solenoids

**AAF391-001 02 X..3 A56**  
simple non-quantitative code

**connect-node code conn-node code**

Code of the type of connect node of a component

E = electrical  
F = functional  
L = linkage  
M = matter (material)  
MG = gaseous  
ML = liquid  
MS = solid  
O = optical fibre  
W = wave propagation

**AAF392-001 01 X..8 A58**  
simple non-quantitative code

**project view code proj-view code**

Coded abbreviation of the two dimensional projection view of an item.

ABOVE = view from above  
BELOW = view from below  
FRONT = view from the front  
LEFT = view from the left  
REAR = view from the rear  
RIGHT = view from the right

REMARKS:  
The reference point for all projection views shall be defined as the centre of the view from the front at the seating plane.

**AAF393-001 04 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**x-coordinate of the reference point x-coor ref pt**  
x-coor ref point

The value as specified by level (miNoMax) of the distance on the x-axis (in m) of the reference point to the zero-point.

**AAF394-001 04 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**y-coordinate of the reference point y-coor ref pt**  
y-coor ref point

The value as specified by level (miNoMax) of the distance on the y-axis (in m) of the reference point to the zero-point.

**AAF395-001 04 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**z-coordinate of the reference point z-coor ref pt**  
z-coor ref point

The value as specified by level (miNoMax) of the distance on the z-axis (in m) of the reference point to the zero-point.

**AAF396-001 01** **NR2..3.3** **T03**  
level nom real measure  
1

**scale**

**scale**  
scale

The value of the denominator of the ratio of the real things magnitude to the magnitude of the model.

**AAF397-001 01** **NR3..3.3ES2** **T05**  
level nom real measure  
 $m^2$

**net area**

**net area**  
net area

The value of the area (in  $m^2$ ) of a two-dimensional plane defining the effective physical contour of a geometrical object.

**AAF398-001 02** **NR3..3.3ES2** **T05**  
level nom real measure  
 $m^2$

**gross area**

**gross area**  
gross area

The value of the area (in  $m^2$ ) of a two-dimensional plane associated with a geometrical object due to installation, protection, operation, service and maintenance reasons.

REMARKS:

- It encloses completely the net area of the geometrical object.
- The gross area is defined as a plane normally not possible to be occupied by other geometrical objects.

**AAF399-001 01** **NR3..3.3ES2** **T06**  
level nom real measure  
 $m^3$

**net space**

**net space**  
net space

The value of the volume (in  $m^3$ ) of a three-dimensional space defining the effective physical contours of a geometrical object.

**AAF400-001 02** **NR3..3.3ES2** **T06**  
level nom real measure  
 $m^3$

**gross space**

**gross space**  
gross space

The value of the volume (in  $m^3$ ) of a three-dimensional space associated with a geometrical object due to installation, protection, operation, service and maintenance reasons.

REMARKS:

- It encloses completely the net space of the geometrical object.
- The gross space is defined as a plane normally not possible to be occupied by other geometrical objects.

**AAF401-001 02** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**x-coor preferred mounting position** **x-coor pref pos**

x-coor pref pos

The value of the distance (in m) on the x-axis of the direction of the preferred mounting position of a component.

**AAF402-001 02** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**x-coor preferred mounting position** **y-coor pref pos**

y-coor pref pos

The value of the distance (in m) on the y-axis of the direction of the preferred mounting position of a component.

**AAF403-001 02** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**z-coor preferred mounting position** **z-coor pref pos**

z-coor pref pos

The value of the distance (in m) on the z-axis of the direction of the preferred mounting position of a component.

**AAF404-001 01 NR2..3.3 T01**  
level nom real measure  
deg

**mounting deviation y/z** **mount dev y/z**  
mount dev y/z

Specification of the absolute value of the angle (in deg), indicating the maximum rotation deviation from the y-axis within the y/z plane of the three-dimensional coordinate system, under which the device fulfils its terms of operation.

**AAF405-001 01 NR2..3.3 T01**  
level nom real measure  
deg

**mounting deviation y/x** **mount dev y/x**  
mount dev y/x

Specification of the absolute value of the angle (in deg), indicating the maximum rotation deviation from the y-axis within the y/x plane of the three-dimensional coordinate system, under which the device fulfils its terms of operation.

**AAF406-001 02 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**x-coordinate position** **x-coor pos-loc**  
**location** x-coor pos-loc

The value as specified by level (miNoMax) of the length (in m) of the x-coordinate of the location of a point on the symmetry-axis of a constructive solid geometry primitive.

**AAF407-001 02 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**y-coordinate position** **y-coor pos-loc**  
**location** y-coor pos-loc

The value as specified by level (miNoMax) of the length (in m) of the y-coordinate of the location of a point on the symmetry-axis of a constructive solid geometry primitive.

**AAF408-001 02 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**z-coordinate position** **z-coor pos-loc**  
**location** z-coor pos-loc

The value as specified by level (miNoMax) of the length (in m) of the z-coordinate of the location of a point on the symmetry-axis of a constructive solid geometry primitive.

**AAF409-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**cylinder radius** **r\_cyl**  
r<sub>cyl</sub>

The value of the radius (in m) of a cylinder.

**AAF410-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**cylinder height** **h\_cyl**  
h<sub>cyl</sub>

The value as specified by level (miNoMax) of the distance (in m) between the two planar circular faces of a cylinder.

**AAF411-001 02 NR2 S..3.3 T01**  
level nom real measure  
deg

**angle axis to x-axis** **\$a\_x**  
α<sub>x</sub>

The value of the angle (in deg) between the orientation of the axis of a constructive solid geometry primitive and the X-axis of the placement coordinate system.

**AAF412-001 02 NR2 S..3.3 T01**  
level nom real measure  
deg

**angle axis to y-axis** **\$a\_y**  
α<sub>y</sub>

The value of the angle (in deg) between the orientation of the axis of a constructive solid geometry primitive and the Y-axis of the placement coordinate system.



**AAF413-001 02 NR2 S..3.3 T01**  
level nom real measure  
deg

**angle axis to z-axis** **\$a\_z**  
 $\alpha_z$

The value of the angle (in deg) between the orientation of the axis of a constructive solid geometry primitive and the Z-axis of the placement coordinate system.

**AAF414-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**cone radius** **r\_cone**  
 $r_{\text{cone}}$

The value of the radius (in m) of the cone on the axis at the top of a right circular cone.

**AAF415-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**cone height** **h\_cone**  
 $h_{\text{cone}}$

The value as specified by level (miNoMax) of the distance (in m) between the two planar circular faces of a right circular cone, if the radius is greater than zero: or from the base to the apex if the radius equals zero.

**AAF416-001 01 NR2..3.3 T01**  
level nom real measure  
deg

**semi angle** **\$a\_semi**  
 $\alpha_{\text{semi}}$

The value of the angle (in deg) between the axis of the cone and the generator of the conical surface of a right circular cone.

**AAF417-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**sphere radius** **r\_sphere**  
 $r_{\text{sphere}}$

The value of the length of the radius (in m) of a sphere.

**AAF418-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**x-coordinate of centre** **x-c\_sphere**  
 $X_{\text{Csphere}}$

The value as specified by level (miNoMax) of the distance (in m) on the x-axis of the centre of a sphere.

**AAF419-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**y-coordinate of centre** **y-c\_sphere**  
 $Y_{\text{Csphere}}$

The value as specified by level (miNoMax) of the distance (in m) on the y-axis of the centre of a sphere.

**AAF420-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**z-coordinate of centre** **z-c\_sphere**  
 $Z_{\text{Csphere}}$

The value as specified by level (miNoMax) of the distance (in m) on the z-axis of the centre of a sphere.

**AAF421-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**major radius of torus** **r\_(major-torus)**  
 $r_{(\text{major-torus})}$

The value as specified by level (miNoMax) of the radius (in m) of the directrix of a torus.

**AAF422-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**minor radius of torus** **r\_(minor-torus)**  
 $r_{(\text{minor-torus})}$

The value as specified by level (miNoMax) of the radius (in m) of the generatrix of a torus.

**AAF423-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**wedge x-size** **x\_wedge**  
 $X_{\text{wedge}}$

The value as specified by level (miNoMax) of the length (in m) of the right angular wedge along the placement X-axis.

**AAF424-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**wedge y-size**   **y\_wedge**  
 $y_{\text{wedge}}$

The value as specified by level (miNoMax) of the length (in m) of the right angular wedge along the placement Y-axis.

**AAF429-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**edge-length**   **l\_edge**  
 $l_{\text{edge}}$

The value as specified by level (miNoMax) of the length (in m) of the edge of a N-edged regular column.

**AAF425-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**wedge z-size**   **z\_wedge**  
 $z_{\text{wedge}}$

The value as specified by level (miNoMax) of the length (in m) of the right angular wedge along the placement Z-axis.

**AAF430-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**internal radius**   **r\_inner**  
 $r_{\text{inner}}$

The value as specified by level (miNoMax) of the length (in m) of the inner radius of a right circular tube.

**AAF426-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**major edge**   **edge\_major**  
 $\text{edge}_{\text{major}}$

The value as specified by level (miNoMax) of the length (in m) of the edge of the square base plane of a right angular pyramid.

**AAF431-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**external radius**   **r\_outer**  
 $r_{\text{outer}}$

The value as specified by level (miNoMax) of the length (in m) of the outer radius of a right circular tube.

**AAF427-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**minor edge**   **edge\_minor**  
 $\text{edge}_{\text{minor}}$

The value as specified by level (miNoMax) of the length (in m) of the edge of the square top plane of a right angular truncated pyramid.

**AAF432-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**minor radius**   **r\_minor**  
 $r_{\text{minor}}$

The value as specified by level (miNoMax) of the length (in m) of the radius of the circular plane of a spherical segment.

**AAF428-001**   **01**   **NR3..3.3ES2**   **T03**  
 level miNoMax   real measure  
 m

**primitive height**   **h\_prim**  
 $h_{\text{prim}}$

The value as specified by level (miNoMax) of the distance (in m) between the apex and the base plane or between the two parallel planes of a right constructive solid geometry primitive.

**AAF433-001**   **01**   **M..175**   **A56**  
 simple   string

**installation instruction**   **install-instruc**

The text giving additional information with respect to the installation of a component.

**AAF434-001**   **01**   **NR3..3.3ES2**   **T03**  
 level nom   real measure  
 m

**bending radius**   **r\_bend**  
 $r_{\text{bend}}$

The value, as specified by the manufacturer, of the maximum allowed radius (in m) when bending a conductor or connector into a curve.

**AAF435-001**    **01**    **M..3**    **A58**  
                          simple    non-quantitative code

**terminal connection type      term-conn-type**

Code of the type of connection a terminal or connector is being designed for

- 1      = soldered
- 10    = flat
- 2      = welded
- 5      = screwed
- 6      = wire-wrapped
- 7      = termi-point
- 8      = insulation displacement connection

**AAF436-001**    **01**    **NR2..3.3**    **T07**  
                          level nom    real measure  
                          1

**simultaneity factor      F\_simult**  
                          F<sub>simult</sub>

The value of the ratio of 1) the effective time of handling and 2) the maximum available time of handling of a component.

**AAF437-001**    **01**    **NR1..4**    **Q56**  
                          level nom    integer measure  
                          1

**column type      n\_column**  
                          number of columns    n<sub>column</sub>

The value indicating the number of corners defining the column type.

**AAF440-001**    **01**    **X..8**    **A52**  
                          simple    non-quantitative code

**features      features**

Code of a main feature class

CPLX = complex number value  
 TOL    = tolerated value

**AAF441-001**    **01**    **X..8**    **A52**  
                          simple    non-quantitative code

**complex numbers      complex nos**

Code of a feature class containing values expressed as complex numbers.

ADM    = admittance  
 IMP    = impedance

**AAF442-001**    **01**    **X..8**    **A52**  
                          simple    non-quantitative code

**toleranced values      tol values**

Code of a feature class containing values with tolerances.

TOLCAP    = toleranced capacitance  
 TOLRES    = toleranced resistance

**AAF443-001**    **01**    **NR2 S..3.3**    **R71**  
                          level nom    real measure  
                          %

**symmetric tolerance      %tol**  
                          percentage tolerance    %tol

The percentage tolerance (in %) on the nominal value of a characteristic property where both positive and negative tolerance values are equal.

**AAF444-001**    **01**    **NR2 S..3.3**    **R71**  
                          level nom    real measure  
                          %

**negative tolerance      %tol-**  
                          %tol-

The negative value of the percentage tolerance (in %) on the nominal value of a characteristic property where positive and negative tolerance values are unequal.

**AAF445-001**    **01**    **NR2 S..3.3**    **R71**  
                          level nom    real measure  
                          %

**positive tolerance      %tol+**  
                          %tol+

The positive value of the percentage tolerance (in %) on the nominal value of a characteristic property where positive and negative tolerance values are unequal.

**AAF446-001**    **01**    **NR3..3.3ES2**    **E09**  
                          level nom    real measure  
                          F

**capacitance      C**  
                          C

The nominal value of the capacitance (in F) of an electric component having a capacitance property.

**AAF447-001 01 NR3..3.3ES2 E09**  
level nom real measure  
F

**symmetric capacitance tolerance C\_tol**  
C<sub>tol</sub>

The absolute tolerance (in F) on the nominal value of the capacitance of an electric component where both positive and negative tolerance values are equal.

**AAF448-001 01 NR3..3.3ES2 E09**  
level nom real measure  
F

**negative capacitance tolerance C\_tol-**  
C<sub>tol-</sub>

The negative value of the absolute tolerance (in F) on the nominal value of the capacitance of an electric component where positive and negative tolerance values are unequal.

**AAF449-001 01 NR3..3.3ES2 E09**  
level nom real measure  
F

**positive capacitance tolerance C\_tol+**  
C<sub>tol+</sub>

The positive value of the absolute tolerance (in F) on the nominal value of the capacitance of an electric component where positive and negative tolerance values are unequal.

**AAF450-001 01 NR3..3.3ES2 E33**  
level nom real measure  
Ω

**resistance**

R  
P

The nominal value of the resistance (in ohms) of an electric component having a resistance property.

**AAF451-001 01 NR3..3.3ES2 E33**  
level nom real measure  
Ω

**symmetric resistance tolerance R\_tol**  
R<sub>tol</sub>

The absolute tolerance (in ohms) on the nominal value of the resistance of an electric component where both positive and negative tolerance values are equal.

**AAF452-001 01 NR3..3.3ES2 E33**  
level nom real measure  
Ω

**negative resistance tolerance R\_tol-**  
R<sub>tol-</sub>

The negative value of the absolute tolerance (in ohms) on the nominal value of the resistance of an electric component where positive and negative tolerance values are unequal.

**AAF453-001 01 NR3..3.3ES2 E33**  
level nom real measure  
Ω

**positive resistance tolerance R\_tol+**  
R<sub>tol+</sub>

The positive value of the absolute tolerance (in ohms) on the nominal value of the resistance of an electric component where positive and negative tolerance values are unequal.

**AAF454-001 01 NR1 S1..3 E43**  
level miNoMax integer measure  
deg

**phase angle**

\$f  
φ

The value as given by level (miNoMax) of the phase angle (in deg) of a complex electrical quantity.

**AAF455-001 01 NR3 S..3.3ES2 E43**  
level miNoMax real measure  
rad

**phase angle**

\$f  
φ

The value as given by level (miNoMax) of the phase angle (in rad) of a complex electrical quantity.

**AAF456-001 01 NR3..3.3ES2 E44**  
level miNoMax real measure  
Ω

**modulus of impedance Z**  
absolute value of impedance Z

The modulus or absolute value as given by level (miNoMax) of the impedance (in ohms) of an electric component having an impedance property.

**AAF457-001 01 NR3..3.3ES2 E44**  
level miNoMax real measure  
 $\Omega$

**resistance**

**R**  
R

The reactive or imaginary part as given by level (miNoMax) of the impedance (in ohms) of an electric component having an impedance property.

**AAF458-001 01 NR3..3.3ES2 E44**  
level miNoMax real measure  
 $\Omega$

**reactance**

**S**  
S

The resistive or real part as given by level (miNoMax) of the impedance (in ohms) of an electric component having an impedance property.

**AAF459-001 01 NR3..3.3ES2 E45**  
level miNoMax real measure  
S

**modulus of admittance Y**  
absolute value of admittance Y

The modulus or absolute value as given by level (miNoMax) of the admittance (in S) of an electric component having an admittance property.

**AAF460-001 01 NR3..3.3ES2 E45**  
level miNoMax real measure  
S

**conductance**

**G**  
G

The reactive or imaginary part as given by level (miNoMax) of the admittance (in S) of an electric component having an admittance property.

**AAF461-001 01 NR3..3.3ES2 E45**  
level miNoMax real measure  
S

**susceptance**

**B**  
B

The resistive or real part as given by level (miNoMax) of the admittance (in S) of an electric component having an admittance property.

**AAF462-001 01 E09**  
class instance AAA238-001

**toleranced capacitance C**  
C

The value of the capacitance of a fixed capacitor together with its tolerances at specified frequency and at reference conditions.

AAE029-005 = frequency  
AAE995-005 = reference conditions

**AAF463-001 01 E33**  
class instance AAA239-001

**toleranced resistance R**  
R

The value of the resistance of a fixed linear resistor together with its tolerances at specified reference conditions.

AAE995-005 = reference conditions

**AAF464-001 01 M..8 A56**  
simple non-quantitative code

**connector part type connector part**

Code of the type of a connector part.

ACCY = connector accessory  
CONTACT = connector contact  
INSERT = connector insert  
SHELL = connector shell  
TOOL = connector tool

**AAF465-001 01 M..80 A56**  
simple string

**accessory type accessory**

Description of the type of connector accessory.

**AAF466-001 01 M..80 A56**  
simple string

**tool type tool**

Description of the type of tool to be used with a connector.

**AAF467-001 01 M..80 A56**  
simple string

**shell type shell**  
housing type

Description of the type of connector shell

|                                                                                                                                                                        |                            |                                         |            |                                                                                                                                                                                                    |                            |                                         |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------|------------|
| <b>AAF468-001</b>                                                                                                                                                      | <b>01</b><br>simple        | <b>M..80</b><br>string                  | <b>A56</b> | <b>AAG003-001</b>                                                                                                                                                                                  | <b>01</b><br>level miNoMax | <b>NR3..3.3ES2</b><br>m<br>real measure | <b>T03</b> |
| <b>insert type</b>                                                                                                                                                     |                            | <b>insert</b>                           |            | <b>package height</b>                                                                                                                                                                              |                            | <b>A_2</b>                              |            |
| Description of the type of connector insert                                                                                                                            |                            |                                         |            | package thickness                                                                                                                                                                                  |                            |                                         |            |
|                                                                                                                                                                        |                            |                                         |            | The distance (in m) as specified by level (miNoMax) of the furthest part of the component above the base plane, measured in a direction perpendicular to the plane.                                |                            |                                         |            |
| <b>AAF469-001</b>                                                                                                                                                      | <b>01</b><br>simple        | <b>M..80</b><br>string                  | <b>A57</b> | BS3934 issue 1 : 1975                                                                                                                                                                              |                            |                                         |            |
| <b>insert material</b>                                                                                                                                                 |                            | <b>insert material</b>                  |            | DAE001-001 Package length, width and height                                                                                                                                                        |                            |                                         |            |
| Description of the type of material of which a connector insert is made.                                                                                               |                            |                                         |            |                                                                                                                                                                                                    |                            |                                         |            |
| <b>AAG000-001</b>                                                                                                                                                      | <b>01</b><br>simple        | <b>X..3</b><br>non-quantitative code    | <b>A52</b> | <b>AAG004-001</b>                                                                                                                                                                                  | <b>01</b><br>level miNoMax | <b>NR3..3.3ES2</b><br>m<br>real measure | <b>T03</b> |
| <b>geometry type</b>                                                                                                                                                   |                            | <b>geometry type</b>                    |            | <b>terminal circle diameter</b> \$fa<br>Øa                                                                                                                                                         |                            |                                         |            |
| Code of the type of geometry possessed by an electric-electronic component.                                                                                            |                            |                                         |            | The diameter (in m) as specified by level (miNoMax) of the circle upon which the terminal positions are located.                                                                                   |                            |                                         |            |
| DIE = Die devices<br>PAK = Package outlines                                                                                                                            |                            |                                         |            | NOTE<br>Where there is more than one terminal circle present, Øa is the diameter of the largest circle.                                                                                            |                            |                                         |            |
| <b>AAG001-001</b>                                                                                                                                                      | <b>01</b><br>level miNoMax | <b>NR3..3.3ES2</b><br>m<br>real measure | <b>T03</b> | BS3934 issue 1 : 1975                                                                                                                                                                              |                            |                                         |            |
| <b>seated height</b>                                                                                                                                                   |                            | <b>A</b>                                |            | DAE004-001 Cylindrical package dimensions                                                                                                                                                          |                            |                                         |            |
| mounted height                                                                                                                                                         |                            | A                                       |            |                                                                                                                                                                                                    |                            |                                         |            |
| The distance (in m) as specified by level (miNoMax) of the furthest part of the component above the seating plane, measured in a direction perpendicular to the plane. |                            |                                         |            | <b>AAG005-001</b>                                                                                                                                                                                  |                            |                                         |            |
| BS3934-1: 1992                                                                                                                                                         |                            |                                         |            | <b>01</b><br>level miNoMax                                                                                                                                                                         |                            | <b>NR3..3.3ES2</b><br>m<br>real measure |            |
| DAE001-001 Package length, width and height                                                                                                                            |                            |                                         |            | <b>stand-off major dimension</b>                                                                                                                                                                   |                            | <b>B</b>                                |            |
|                                                                                                                                                                        |                            |                                         |            | shoulder width                                                                                                                                                                                     |                            | B                                       |            |
|                                                                                                                                                                        |                            |                                         |            | The major dimension (in m) as specified by level (miNoMax) of the cross-section of the stand-off.                                                                                                  |                            |                                         |            |
| <b>AAG002-001</b>                                                                                                                                                      | <b>01</b><br>level miNoMax | <b>NR3..3.3ES2</b><br>m<br>real measure | <b>T03</b> | NOTE<br>This dimension applies to a separate stand-off or to the width of the wider section of shouldered terminations which have the effect of standing the component off from the seating plane. |                            |                                         |            |
| <b>stand-off height</b>                                                                                                                                                |                            | <b>A_1</b>                              |            | BS3934 issue 1 : 1975                                                                                                                                                                              |                            |                                         |            |
| clearance                                                                                                                                                              |                            | A <sub>1</sub>                          |            | DAE005-001 In-line package dimensions                                                                                                                                                              |                            |                                         |            |
| The perpendicular distance (in m) as specified by level (miNoMax) between the seating plane and the base plane.                                                        |                            |                                         |            |                                                                                                                                                                                                    |                            |                                         |            |
| BS3934 issue 1 : 1975                                                                                                                                                  |                            |                                         |            |                                                                                                                                                                                                    |                            |                                         |            |
| DAE001-001 Package length, width and height                                                                                                                            |                            |                                         |            |                                                                                                                                                                                                    |                            |                                         |            |

**AAG006-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**stand-off minor dimension B<sub>1</sub>**  
shoulder thickness B<sub>1</sub>

The minor dimension (in m) as specified by level (miNoMax) of the cross-section of the stand-off.

**NOTE**

This dimension applies to a separate stand-off or to the thick-ness of the wider section of shouldered terminations which have the effect of standing the component off from the seating plane.

BS3934 issue 1 : 1975

**AAG007-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**stand-off diameter \$fB**  
ØB

The diameter (in m) as specified by level (miNoMax) of the cross-section of the stand-off.

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**AAG008-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal width b**  
lead width b

The width (in m) as specified by level (miNoMax) of a square terminal or the length of the major axis of a terminal with a rectangular cross-section.

**NOTE**

This dimension applies to that part of the terminal which is or may be used for connection to the circuit in which it is mounted.

BS3934 issue 1 : 1975

DAE005-001 In-line package dimensions

**AAG009-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal diameter \$fb**  
lead diameter Øb

The diameter (in m) as specified by level (miNoMax) of the circumscribed circle containing the terminal.

BS3934 issue 1 : 1975

**REMARKS:**

The terminal need not have a circular cross-section.

DAE009-001 Lead lengths and diameters

**AAG010-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal diameter \$fb<sub>0</sub>**  
lead diameter Øb<sub>0</sub>

The diameter (in m) as specified by level (miNoMax) of the circumscribed circle containing the terminal.

**NOTE**

Øb<sub>0</sub> refers to the terminal diameter over the terminal length defined by L<sub>0</sub>.

BS3934 issue 1 : 1975

**REMARKS:**

The terminal need not have a circular cross-section.

DAE009-001 Lead lengths and diameters

**AAG011-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal diameter \$fb<sub>2</sub>**  
lead diameter Øb<sub>2</sub>

The diameter (in m) as specified by level (miNoMax) of the circumscribed circle containing the terminal.

**NOTE**

Øb<sub>2</sub> refers to the terminal diameter over the terminal length defined by L<sub>2</sub> – L<sub>1</sub>.

BS3934 issue 1 : 1975

**REMARKS:**

The terminal need not have a circular cross-section.



**AAG012-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**terminal thickness** **c**  
 lead thickness c

The length (in m) as specified by level (miNoMax) of the minor axis of a terminal with a rectangular cross-section.

#### NOTE

This dimension applies to that part of the terminal which is or may be used for connection to the circuit in which it is mounted.

BS3934 issue 1 : 1975

DAE012-001 Terminal splay dimensions

**AAG013-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**package length** **D**  
 D

The major dimension (in m) as specified by level (miNoMax) of the package, excluding terminals presented for mounting in the length direction, measured in a plane parallel to the seating plane.

#### NOTE

If terminals presented for mounting in the width direction extend beyond the ends of the package body the package length includes the width of such terminals.

BS3934 issue 1 : 1975

#### REMARKS:

If terminals are present on one or two sides of the package only, they are deemed to extend in the width direction.

DAE001-001 Package length, width and height

**AAG014-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**package diameter** **\$fD**  
 ØD

The major diameter (in m) as specified by level (miNoMax) of the package, excluding terminals, measured in a plane parallel to the seating plane.

BS3934 issue 1 : 1975

DAE004-001 Cylindrical package dimensions

**AAG015-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**stand-off spacing** **d**  
 d

The linear spacing (in m) as specified by level (miNoMax) between true positions of centres of stand-offs.

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**AAG016-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**package width** **E**  
 E

The minor dimension (in m) as specified by level (miNoMax) of the package, excluding terminals, measured in a plane parallel to the seating plane.

BS3934 issue 1 : 1975

#### REMARKS:

If terminals are present on one or two sides of the package only, they are deemed to extend in the width direction.

DAE001-001 Package length, width and height

**AAG017-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**terminal spacing** **e**  
 lead spacing e

The linear spacing (in m) as specified by level (miNoMax) between the true positions of terminal centres.

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DAE005-001 In-line package dimensions

**AAG018-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**flange zone height** **F**  
 F

The overall dimension (in m) as specified by level (miNoMax) of the flange zone, including any fillet, measured in a perpendicular direction from the base plane.

BS3934 issue 1 : 1975

**AAG019-001**    **01**    **NR3..3.3ES2**    **T03**  
                          level miNoMax    real measure  
                                                  m

**flange height**    **F<sub>1</sub>**  
 flange thickness    **F<sub>1</sub>**

The overall dimension (in m) as specified by level (miNoMax) of the flange zone, excluding any fillet, measured in a perpendicular direction from the base plane.

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**AAG020-001**    **01**    **NR3..3.3ES2**    **T03**  
                          level miNoMax    real measure  
                                                  m

**package length zone**    **G<sub>D</sub>**  
                                          **G<sub>D</sub>**

The length (in m) as specified by level (miNoMax) of a zone in the direction of the package length which includes the package length, package irregularities and the uncontrolled part of any terminals which are presented for mounting in the length direction.

BS3934 issue 1 : 1975

**AAG021-001**    **01**    **NR3..3.3ES2**    **T03**  
                          level miNoMax    real measure  
                                                  m

**package width zone**    **G<sub>E</sub>**  
                                          **G<sub>E</sub>**

The length (in m) as specified by level (miNoMax) of a zone in the direction of the package width which includes the package width, package irregularities and the uncontrolled part of any terminals which are presented for mounting in the width direction.

BS3934 issue 1 : 1975

DAE021-001 Package overall widths

**AAG022-001**    **01**    **NR3..3.3ES2**    **T03**  
                          level miNoMax    real measure  
                                                  m

**package diameter zone**    **\$fG**  
                                          **ØG**

The diameter (in m) as specified by level (miNoMax) of a zone which includes the package diameter, package irregularities and the uncontrolled part of any terminals which are presented for mounting radially.

BS3934 issue 1 : 1975

**AAG023-001**    **01**    **NR3..3.3ES2**    **T03**  
                          level miNoMax    real measure  
                                                  m

**overall length**    **H<sub>D</sub>**  
                                          **H<sub>D</sub>**

The largest overall dimension (in m) as specified by level (miNoMax) in the direction of the package length which includes the package length and any terminals which are presented for mounting in the length direction.

BS3934 issue 1 : 1975

**AAG024-001**    **01**    **NR3..3.3ES2**    **T03**  
                          level miNoMax    real measure  
                                                  m

**overall width**    **H<sub>E</sub>**  
                                          **H<sub>E</sub>**

The largest overall dimension (in m) as specified by level (miNoMax) in the direction of the package width which includes the package width and any terminals which are presented for mounting in the width direction.

BS3934 issue 1 : 1975

DAE021-001 Package overall widths

**AAG025-001**    **01**    **NR3..3.3ES2**    **T03**  
                          level miNoMax    real measure  
                                                  m

**overall diameter**    **\$fH**  
                                          **ØH**

The largest overall diameter (in m) as specified by level (miNoMax) which includes all terminals which are presented for mounting radially.

BS3934 issue 1 : 1975

**AAG026-001**    **01**    **NR3..3.3ES2**    **T03**  
                          level miNoMax    real measure  
                                                  m

**index height**    **h**  
 index depth    **h**

The height or depth (in m) as specified by level (miNoMax) of an index feature.

BS3934 issue 1 : 1975

**AAG027-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**index width** j  
 j

The width (in m) as specified by level (miNoMax) of an index feature.

BS3934 issue 1 : 1975

DAE004-001 Cylindrical package dimensions

**AAG028-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**index length** k  
 k

The length (in m) as specified by level (miNoMax) of an index feature.

**NOTE**

On cylindrical packages, the index length (e.g. tab) is measured from the overall diameter \*D of the device.

BS3934 issue 1 : 1975

DAE004-001 Cylindrical package dimensions

**AAG029-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**terminal length** L  
 lead length L

The length (in m) as specified by level (miNoMax) of terminal available for mounting measured from the seating plane.

BS3934 issue 1 : 1975

DAE009-001 Lead lengths and diameters

**AAG030-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**terminal length** L<sub>0</sub>  
 lead length L<sub>0</sub>

The length of terminal (in m) as specified by level (miNoMax) available for mounting measured from the seating plane.

**NOTE**

L<sub>0</sub> refers to that part of the terminal over which the diameter Øb<sub>0</sub> is closely controlled.

BS3934 issue 1 : 1975

DAE009-001 Lead lengths and diameters

**AAG031-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**terminal length** L<sub>1</sub>  
 lead length L<sub>1</sub>

The length (in m) as specified by level (miNoMax) of terminal available for mounting measured from the seating plane.

**NOTE**

L<sub>1</sub> refers to that part of the terminal over which the diameter Øb<sub>1</sub> is closely controlled.

BS3934 issue 1 : 1975

DAE009-001 Lead lengths and diameters

**AAG032-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**terminal length** L<sub>2</sub>  
 lead length L<sub>2</sub>

The length (in m) as specified by level (miNoMax) of terminal available for mounting measured from the seating plane.

**NOTE**

L<sub>2</sub> refers to that part of the terminal over which the diameter Øb<sub>2</sub> is closely controlled.

BS3934 issue 1 : 1975

**AAG033-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal length** **L\_D**  
lead length L<sub>D</sub>

The length (in m) as specified by level (miNoMax) of controlled terminal zone for mounting measured from the end of the terminal in the direction of the package length.

BS3934 issue 1 : 1975

**AAG034-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal length** **L\_E**  
lead length L<sub>E</sub>

The length (in m) as specified by level (miNoMax) of controlled terminal zone for mounting measured from the end of the terminal in the direction of the package width.

BS3934 issue 1 : 1975

DAE021-001 Package overall widths

**AAG035-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**mounted length** **M\_D**  
M<sub>D</sub>

The overall length, (in m) as specified by level (miNoMax), in the package length direction which includes the package length and any terminals which are bent to be perpendicular to the seating plane.

BS3934 issue 1 : 1975

**AAG036-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**mounted width** **M\_E**  
M<sub>E</sub>

The overall width, (in m) as specified by level (miNoMax), in the package width direction which includes the package width and any terminals which are bent to be perpendicular to the seating plane.

BS3934 issue 1 : 1975

DAE012-001 Terminal splay dimensions

**AAG037-002 01 NR1..4 Q56**  
level Nom integer measure

**quantity of terminal positions n**  
number of potential terminals n

The total quantity of potential terminal positions in accordance with the specified terminal designation system.

BS3934 issue 1 : 1975

REMARKS:  
The actual quantity of terminals present may be less than n.

DAE004-001 Cylindrical package dimensions

**AAG038-001 01 NR1..4 Q56**  
level Max integer measure

**quantity of missing terminals n\_1**  
n<sub>1</sub>

The maximum quantity of potential terminal positions which can be unoccupied.

BS3934 issue 1 : 1975

**AAG039-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**mounting hole diameter** **\$fp**  
Øp

The diameter (in m) as specified by level (miNoMax) of the hole in the package used for mounting.

BS3934 issue 1 : 1975

DAE042-001 Oval flange-mount package dimensions

**AAG040-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal emergence height Q**  
Q

The distance (in m) as specified by level (miNoMax) from the seating plane to the underside of the terminals where they emerge from the package.

BS3934 issue 1 : 1975

DAE040-001 Terminal emergence height

**AAG041-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal emergence dimension** **Q<sub>1</sub>**  
Q<sub>1</sub>

The distance (in m) as specified by level (miNoMax) from the seating plane to the underside of the terminals where they emerge from the package.

BS3934 issue 1 : 1975

**AAG042-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**mounting hole separation** **q**  
q

The distance (in m) as specified by level (miNoMax) between the centres of two mounting holes.

BS3934 issue 1 : 1975

DAE042-001 Oval flange-mount package dimensions

**AAG043-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**curve radius** **r**  
r

The radius (in m) as specified by level (miNoMax) of a curve forming a part of the package outline.

BS3934 issue 1 : 1975

**AAG044-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal reference position** **S**  
S

The distance (in m) as specified by level (miNoMax) from a reference line to the centre of a terminal position.

BS3934 issue 1 : 1975

**AAG045-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal reference position** **s**  
s

The distance (in m) as specified by level (miNoMax) from a line through the centres of two terminal positions to the centre of the mounting hole which is furthest from the line.

BS3934 issue 1 : 1975

DAE042-001 Oval flange-mount package dimensions

**AAG046-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**package overhang** **Z**  
Z

The distance (in m) as specified by level (miNoMax) from the end terminal true position to the extremity of the package.

BS3934 issue 1 : 1975

REMARKS:

In the case where the terminals extend beyond the package, Z shall be specified as zero. Negative dimensions shall not be used.

DAE005-001 In-line package dimensions

**AAG047-001 01 NR2..3.3 T01**  
level miNoMax real measure  
deg

**index datum angle** **\$a**  
α

The angular spacing (in degrees) as specified by level (miNoMax) between the index feature and the first terminal true position on a terminal circle.

BS3934 issue 1 : 1975

DAE004-001 Cylindrical package dimensions

**AAG048-001 01 NR2..3.3 T01**  
level miNoMax real measure  
deg

**index datum angle** **\$a\_A**  
 $\alpha_A$

The angular spacing (in degrees) as specified by level (miNoMax) between the index feature and the first terminal true position on the terminal circle with the largest diameter.

BS3934 issue 1 : 1975

**AAG049-001 01 NR2..3.3 T01**  
level miNoMax real measure  
deg

**angular terminal spacing** **\$b**  
 $\beta$

The angular spacing (in degrees) as specified by level (miNoMax) between true positions of terminal centres on a terminal circle.

BS3934 issue 1 : 1975

DAE004-001 Cylindrical package dimensions

**AAG050-001 01 NR2..3.3 T01**  
level miNoMax real measure  
deg

**angular terminal spacing** **\$b\_A**  
 $\beta_A$

The angular spacing (in degrees) as specified by level (miNoMax) between true positions of terminal centres on the terminal circle with the largest diameter.

BS3934 issue 1 : 1975

**AAG051-001 01 NR2..3.3 T01**  
level miNoMax real measure  
deg

**angular terminal spread** **\$h**  
 $\theta$

The angle (in degrees) as specified by level (miNoMax) between the terminal and the seating plane.

BS3934 issue 1 : 1975

DAE012-001 Terminal splay dimensions

**AAG052-001 01 NR2..3.3 T01**  
level miNoMax real measure  
deg

**terminal seating angle** **\$h\_1**  
 $\theta_1$

The angle (in degrees) as specified by level (miNoMax) between the terminal and the seating plane.

BS3934 issue 1 : 1975

**AAG053-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal row spacing** **\$e\_E**  
lead row spacing  $e_E$

The distance (in m) as specified by level (miNoMax) between lines parallel to the package length and passing through the true centres of terminal positions, measured in a direction parallel to the package width.

**NOTE**

For surface-mount packages, this measurement refers to the centres of the lands on which the package is mounted.

**AAG054-001 02 X 4 A58**  
simple non-quantitative code

**terminal variant code** **terminal var**

The code of the name which identifies a particular variant of the shape of the terminals on a package.

T000 = standard form  
T001 = straight leads  
T002 = formed leads  
T003 = leads on a circle  
T004 = straight leads in line  
T005 = formed leads in line  
T006 = leads on a square grid  
T007 = offset leads  
T008 = straight tags  
T009 = round pins  
T010 = rectangular pins  
T011 = straight flat leads  
T012 = solder balls  
T013 = one fixed tag  
T014 = two fixed tags  
T015 = one lead with tag  
T016 = two leads with tags  
T017 = three leads with tag  
T018 = one lead no tag  
T019 = strip leads  
T020 = multiple leads  
T021 = three leads  
T022 = two leads, stub and tab  
T023 = straight V-section leads

IEC 60191-4 (1999)

**AAG055-001 02 X 4 A57**  
simple non-quantitative code

**body variant code body variant**

The code of the name which identifies a particular variant of the shape of the body on a package.

B000 = standard form  
B001 = bumped package  
B002 = non-bumped package  
B003 = plain cylindrical  
B004 = top hat package  
B005 = clamp mount package  
B006 = stud mount package  
B007 = cavity up  
B008 = cavity down  
B009 = non-cavity package (moulded)  
B010 = cavity package (ceramic)

IEC 60191-4 (1999)

**AAG056-001 01 A 1 A58**  
simple non-quantitative code

**terminal position code terminal pos**

A prefix to the IEC 60191-4 code which identifies the position of the terminals on the package body.

A = axial  
B = bottom  
D = double  
E = end  
L = lateral  
P = perpendicular  
Q = quad  
R = radial  
S = single  
T = triple  
U = upper  
Z = zig-zag

IEC 60191-4 (1999)

**AAG057-001 01 A 2 A58**  
simple non-quantitative code

**package style code package style**

The IEC 60191-4 code which identifies the general physical form of the package.

BD = bead  
CC = chip carrier  
CP = clamped  
CY = cylindrical  
DB = disc  
FM = flange mount  
FO = fibre-optic  
FP = flat pack  
GA = grid array  
IP = in line  
LF = long-form  
MA = microelectronic  
MP = power module  
MW = microwave  
PF = press-fit  
PM = Post mount  
RC = rectangular  
SO = small outline  
SS = special shape  
UC = uncased chip  
VP = vertical surface-mount

IEC 60191-4 (1999)

**AAG058-001 01 A 1 A58**  
simple non-quantitative code

**terminal shape code terminal shape**  
lead form code

A suffix to the IEC 60191-4 code which identifies the form or shape of the terminals.

**NOTE**

If more than one terminal is used, the code to be used shall be that for the terminal which carries the principal current.

A = screw  
B = butt  
C = C-bend  
D = solder lug  
E = faston plug  
F = flat  
G = gull wing  
H = high current cable  
I = insulated  
J = J-bend  
L = L-bend  
N = no lead  
P = pin or peg  
Q = quick-connect  
R = wrap-around  
S = S-bend  
T = through-hole  
U = J-inverted  
W = wire  
Y = screw

IEC 60191-4 (1999)



**AAG059-001 01 NR1..4 Q56**  
level Nom integer measure

**actual quantity of termination** **n\_2**  
actual terminal number  $n_2$

The actual quantity of potential terminal positions which are occupied.

**AAG061-001 01 M..32 A58**  
simple string

**IEC 60191 code IEC 60191 code**

A code used to identify the physical features of a component package which, when used with an optional suffix can provide a unique reference to a package and associated dimension set.

#### NOTE

The code is made up of seven fields with separators :body shape (optional)- (hyphen separator)body material (optional)terminal position (optional)package style (mandatory)- (hyphen separator)terminal shape (optional)terminal count (optional)/.

IEC 60191-4 (1999)

#### REMARKS:

The body material prefix may only be used if the terminal position prefix is also present. Hyphen and solidus separators are only used when the relevant prefixes and suffixes are present.

**AAG062-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**package diameter** **\$fD\_1**  
 $\varnothing D_1$

A diameter (in m) as specified by level (miNoMax) of a package, excluding terminals, measured in a plane parallel to the seating plane.

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#### REMARKS:

$\varnothing D_1$  is usually smaller than  $\varnothing D$

DAE119-001 Dimensions of packages with tags

**AAG063-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**flange length** **D\_1**  
 $D_1$

The length (in m) as specified by level (miNoMax) of a flange measured in the direction of the package length.

**AAG064-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**mounting hole position** **q\_1**  
 $q_1$

The distance (in m) as specified by level (miNoMax) of the centre of a mounting hole from a reference line on the package.

**AAG065-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**stand-off length** **L\_1**  
shoulder length  $L_1$

The length (in m) as specified by level (miNoMax) of a stand-off feature.

#### NOTE

This dimension applies to a separate stand-off or to the length of the wider section of shouldered terminations which have the effect of standing the component off from the seating plane.

**AAG066-001 01 M 7 A58**  
simple string

**drawing reference code drawing ref**

Reference to the identity of the drawing on which the dimension set is based.

**NOTE**

The drawing reference code is made up of four fields with one separator :terminal position (one letter)package style (two letters)- (hyphen separator)terminal shape (one letter)numeric sequence code (two digits).

IEC 60191-4 (1999)

**AAG067-001 01 M..35 A61**  
simple string

**source document identification source doc**

Reference to the identifier for the document from which a dimension set was taken.

**NOTE**

The document may be a manufacturer's data sheet or data book or it may be a specification such as IECQ, CECC or MIL.

**AAG068-001 01 M..7 A61**  
simple string

**source document page source page**

The number of the page in the source document on which the dimension set is given.

**AAG069-001 01 M..35 A58**  
simple string

**manufacturer package code manuf code**

The code by which the manufacturer identifies the package style or a specific dimension set.

**NOTE**

If necessary, a code may be supplemented by descriptive text to distinguish variants.

**AAG070-001 01 M..17 A58**  
simple string

**standard package code standard code**

The code of a standard dimension set taken from a standards document.

**REMARKS:**

See AAG071 for identity of the standards document

**AAG071-001 01 M..17 A61**  
simple string

**standards document reference standards ref**

The identity of a standards document that contains lists of dimension sets for electric or electronic components.

**NOTE**

The standard may be international, such as IEC 60191, or a corresponding national standard, such as JEDEC JESD 95, BS 3934, etc.

**AAG072-001 02 A..8 A58**  
simple non-quantitative code

**termination count count sequence sequence**

The direction of the sequence of numbering of the terminals of a component when viewed from the top.

CW = clockwise

ACW = anti-clockwise

**REMARKS:**

The terminal positions should normally be numbered progressively in an anti-clockwise direction as viewed from the top. The terminal number 1 is then the first terminal position anti-clockwise from the index mark.(Ref : BS 3934-1 : 1992)

**AAG073-001 02 A 1 A56**  
simple non-quantitative code

**surface-mount flag SMD flag**

A flag to indicate whether the package is intended for surface-mount applications.

Y = yes

N = no

**AAG074-001 01 M 10 A31**  
simple string

**date of creation of record creation date**

The date on which the record containing the dimension set was first created in the current format.

**REMARKS:**

The date format shall be yyyy/mm/dd.

**AAG075-001 01 M..35 A41**  
simple string

**identification of creator creator ID**

The identity of the person or organisation who was first responsible for creating the record for the dimension set in the current form.

**AAG076-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal width** **b<sub>p</sub>**  
lead width  $b_p$

The width (in m) as specified by level (miNoMax) of the metallized area of the terminal pad on a surface-mount package.

**NOTE**

This dimension applies to that part of the terminal which is or may be used for connection to the circuit in which it is mounted.

**AAG077-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal length** **L<sub>p</sub>**  
lead length  $L_p$

The length (in m) as specified by level (miNoMax) of the metallized area of the terminal pad on a surface-mount package.

**NOTE**

This dimension applies to that part of the terminal which is or may be used for connection to the circuit in which it is mounted.

**AAG078-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**lid height** **A<sub>3</sub>**  
 $A_3$

The height (in m) as specified by level (miNoMax) of a lid on the top of a package which encloses a cavity below.

DAE001-001 Package length, width and height

**AAG079-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**other index length** **k<sub>1</sub>**  
 $k_1$

The length (in m) as specified by level (miNoMax) of a second index feature.

**NOTE**

This represents the length of a feature which, when taken with other index features on the package, allows for identification of package orientation.

**AAG080-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal row spacing** **e<sub>D</sub>**  
lead row spacing  $e_D$

The distance (in m) as specified by level (miNoMax) between lines parallel to the package width and passing through the true centres of terminal positions, measured in a direction parallel to the package length.

**NOTE**

For surface-mount packages, this measurement refers to the centres of the lands on which the package is mounted.

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**AAG081-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**lid length** **D<sub>1</sub>**  
 $D_1$

The length (in m) as specified by level (miNoMax) of a lid on the top of a package which encloses a cavity below.

DAE001-001 Package length, width and height

**AAG082-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**lid width** **E<sub>1</sub>**  
 $E_1$

The width (in m) as specified by level (miNoMax) of a lid on the top of a package which encloses a cavity below.

DAE001-001 Package length, width and height

**AAG083-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**larger flange radius** **r<sub>1</sub>**  
 $r_1$

The larger of the two radii (in m) as specified by level (miNoMax) of a flange having an oval shape.

DAE042-001 Oval flange-mount package dimensions

**AAG084-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**smaller flange radius** **r\_2**  
r<sub>2</sub>

The smaller of the two radii (in m) as specified by level (miNoMax) of a flange having an oval shape.

DAE042-001 Oval flange-mount package dimensions

**AAG085-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**flange overall length** **U\_1**  
U<sub>1</sub>

The overall length (in m) as specified by level (miNoMax) of the mounting flange.

DAE042-001 Oval flange-mount package dimensions

**AAG086-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**flange overall width** **U\_2**  
U<sub>2</sub>

The overall width (in m) as specified by level (miNoMax) of the mounting flange.

DAE042-001 Oval flange-mount package dimensions

**AAG087-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal row spacing** **e\_A**  
e<sub>A</sub>

The distance (in m) as specified by level (miNoMax) between the centres of two parallel rows of terminals when mounted.

DAE012-001 Terminal splay dimensions

**AAG088-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal row splay** **e\_B**  
e<sub>B</sub>

The distance (in m) as specified by level (miNoMax) between the centres of the ends of two parallel rows of terminals prior to mounting.

REMARKS:

For DIP packages, components are often supplied with the terminations splayed. For limits to the splay angle, see AXD051.

DAE012-001 Terminal splay dimensions

**AAG089-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**package length** **G**  
G

The overall length (in m) as specified by level (miNoMax) of a package excluding terminals and slugs.

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**AAG090-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**overall length** **H**  
H

The overall length (in m) as specified by level (miNoMax) of a package including terminals.

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**AAG091-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**bent terminal spacing** **e**  
e

The distance (in m) as specified by level (miNoMax) between centres to which the leads of an axial-leaded package may be bent.

**AAG092-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**package height zone** **G\_A**  
G<sub>A</sub>

The overall height (in m) as specified by level (miNoMax) of a zone which includes the package height, package irregularities and the uncontrolled part of any terminals presented in the height direction.

DAE092-002 Cylindrical stud-mount package dimensions

**AAG093-002 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**stud thread diameter** **%fM**  
Øm

The diameter (in m) as specified by level (miNoMax) of a threaded stud used for mounting the package.

DAE092-002 Cylindrical stud-mount package dimensions

**AAG094-002 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal thread diameter** **%fm**  
Øm

The diameter (in m) as specified by level (miNoMax) of a threaded terminal.

DAE092-002 Cylindrical stud-mount package dimensions

**AAG095-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**stud length** **N**  
N

The length (in m) as specified by level (miNoMax) of a threaded stud used for mounting the package.

DAE092-002 Cylindrical stud-mount package dimensions

**AAG096-001 01 M..17 A58**  
simple string

**stud thread** **stud thread**

The designation of the thread of a stud used for mounting the package.

**AAG097-001 01 M..17 A58**  
simple string

**terminal thread** **term thread**

The designation of the thread of a terminal.

**AAG098-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**main terminal length** **Q\_1**  
Q<sub>1</sub>

The distance (in m) as specified by level (miNoMax) of the end of the longer of two terminal leads from a reference plane.

REMARKS:  
Q<sub>1</sub> is longer than Q<sub>2</sub>

**AAG099-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**secondary terminal length** **Q\_2**  
Q<sub>2</sub>

The distance (in m) as specified by level (miNoMax) of the end of the shorter of two terminal leads from a reference plane.

REMARKS:  
Q<sub>2</sub> is shorter than Q<sub>1</sub>.

**AAG100-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**main overall length** **G\_1**  
G<sub>1</sub>

The longest overall length (in m) as specified by level (miNoMax) of a package measured from a reference plane excluding terminals but including slugs.

REMARKS:  
G<sub>1</sub> is longer than G<sub>2</sub>.

**AAG101-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**secondary overall length G<sub>2</sub>**  
 G<sub>2</sub>

A shorter overall length (in m) as specified by level (miNoMax) of a package measured from a reference plane excluding terminals but including slugs.

REMARKS:  
 G<sub>2</sub> is shorter than G<sub>1</sub>.

**AAG102-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**slug diameter \$fM**  
 ØM

The diameter (in m) as specified by level (miNoMax) of a slug.

**AAG103-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**slug width M<sub>1</sub>**  
 M<sub>1</sub>

The width (in m) as specified by level (miNoMax) of a slug.

**AAG104-001 01 M..20 A58**  
 simple string

**drawing sequence code drawing ID**  
 drawing suffix

A suffix to the drawing code which serves to identify a particular dimension set related to the drawing.

REMARKS:  
 The suffix is a serial numeric, separated from the drawing reference by a solidus : thus BCY-W01/24

**AAG105-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**bent terminal spacing Q**  
 Q

The distance (in m) as specified by level (miNoMax) between the centres of terminal leads of an axial-leaded package after the leads have been bent at right angles.

NOTE  
 It is assumed that the leads are bent symmetrically and equidistant from the ends of the body of the package.

**AAG107-001 01 M..175 A58**  
 simple string

**terminal pattern terminal pat**

The pattern of terminals on a grid array.

NOTE  
 The terminal pattern is expressed as a sequence of 1s and 0s to represent the presence or absence respectively of terminals on a regular rectangular array.

**AAG108-001 01 NR3..3.3ES2 T03**  
 level miNoMax real measure  
 m

**terminal reference position S<sub>1</sub>**  
 S<sub>1</sub>

The distance (in m) as specified by level (miNoMax) from a reference line to the centre of a terminal position.

DAE042-001 Oval flange-mount package dimensions

**AAG109-001 01 NR1..4 Q56**  
 level Nom integer measure

**quantity of terminal positions n<sub>D</sub>**  
 n<sub>D</sub>

The quantity of terminal positions in a row in a direction parallel to the length.

**AAG110-001 01 NR1..4 Q56**  
 level Nom integer measure

**quantity of terminal positions n<sub>E</sub>**  
 n<sub>E</sub>

The quantity of terminal positions in a row in a direction parallel to the width.

**AAG111-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal length**

**l**  
l

The length (in m) as specified by level (miNoMax) of a terminal measured away from the body in the direction of the body length.

**NOTE**

The symbol l is generally used for the length of terminals which are not rigid.

**AAG115-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**index terminal length**

**L<sub>1</sub>**  
L<sub>1</sub>

The length (in m) as specified by level (miNoMax) of a terminal which is longer than other terminals and is intended as an index reference

**REMARKS:**

An index terminal normally indicates terminal 1

**AAG112-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal reference position** **S<sub>E</sub>**  
S<sub>E</sub>

The distance (in m) as specified by level (miNoMax) from a reference line to the centre of a terminal position measured in a direction parallel to the package length.

**AAG116-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**package diameter**

**\$fD<sub>2</sub>**  
ØD<sub>2</sub>

The diameter (in m) as specified by level (miNoMax) of a package, excluding terminals, measured in a plane parallel to the seating plane.

BS3934 issue 1 : 1975

**REMARKS:**

ØD<sub>2</sub> is usually smaller than ØD<sub>1</sub>.

**AAG113-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal reference position** **S<sub>D</sub>**  
S<sub>D</sub>

The distance (in m) as specified by level (miNoMax) from a reference line to the centre of a terminal position measured in a direction parallel to the package width.

**AAG117-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**tag hole width**

**t**  
t

The smallest dimension (in m) as specified by level (miNoMax) of a non-circular hole in a terminal tag or slug.

BS3934 issue 1 : 1975

**AAG114-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**flange width**

**E<sub>1</sub>**  
E<sub>1</sub>

The dimension (in m) as specified by level (miNoMax) of a flange measured in the direction of the package width.

**AAG118-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**tag hole diameter**

**\$ft**  
Øt

The diameter (in m) as specified by level (miNoMax) of the hole in a terminal lug or slug

BS3934 issue 1 : 1975



**AAG119-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**tag hole diameter** **\$ft\_1**  
 $\varnothing_{t_1}$

The diameter (in m) as specified by level (miNoMax) of the hole in a terminal lug or slug.

REMARKS:

$\varnothing_{t_1}$  is normally larger than  $\varnothing_{t_2}$ .

DAE119-001 Dimensions of packages with tags

**AAG120-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**tag hole diameter** **\$ft\_2**  
 $\varnothing_{t_2}$

The diameter (in m) as specified by level (miNoMax) of the hole in a terminal lug or slug.

REMARKS:

$\varnothing_{t_2}$  is normally smaller than  $\varnothing_{t_1}$ .

DAE119-001 Dimensions of packages with tags

**AAG121-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**tag hole distance** **O**  
O

The distance (in m) as specified by level (miNoMax) between the seating plane and the centre of a hole in the tag of a terminal.

BS3934 issue 1 : 1975

**AAG122-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**tag hole distance** **O\_1**  
O<sub>1</sub>

The distance (in m) as specified by level (miNoMax) between the seating plane and the centre of a hole in the tag of a terminal.

DAE119-001 Dimensions of packages with tags

**AAG123-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**tag hole distance** **O\_2**  
O<sub>2</sub>

The distance (in m) as specified by level (miNoMax) between the seating plane and the centre of a hole in the tag of a terminal.

DAE119-001 Dimensions of packages with tags

**AAG124-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**height zone** **Q**  
Q

The height (in m) as specified by level (miNoMax) of a zone within which a flexible lead may be bent to emerge parallel to the seating plane.

DAE119-001 Dimensions of packages with tags

**AAG125-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**overall height** **H\_A**  
H<sub>A</sub>

The largest overall dimension (in m) as specified by level (miNoMax) in the direction of the package height which includes the package height and any terminals which are presented for mounting in the height direction.

**AAG129-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**terminal length** **I**  
lead length I

The length (in m) as specified by level (miNoMax) of a terminal available for mounting measured from the seating plane.

NOTE

The symbol I is generally used for the length of terminals which are not rigid and not in fixed positions.

BS3934 issue 1 : 1975

**AAG130-001 01 NR2..3.3 T01**  
level miNoMax real measure  
deg

**index angle \$b**  
 $\beta$

The angle (in degrees) as specified by level (miNoMax) of a chamfer used as an index feature.

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**AAG131-001 01 NR2..3.3 T03**  
level miNoMax real measure  
deg

**hexagon width H**  
across-flats dimension H

The distance (in m) as specified by level (miNoMax) between parallel opposite sides of a hexagonal feature.

**AAG133-001 01 NR3..3.3ES2 T03**  
level max real measure  
m

**non-threaded stud length N\_1**  
N<sub>1</sub>

The maximum length (in m) as specified by level of the non-threaded portion of a stud used for mounting the package.

DAE092-002 Cylindrical stud-mount package dimensions

**AAJ001-001 01 M..8 A57**  
simple non-quantitative code

**electrolytic capacitor type electrolytic**

Code of the type of electrolytic capacitor.

NAL = non-solid aluminium electrolytic  
NTAN = non-solid tantalum electrolytic  
SAL = solid aluminium electrolytic  
STAN = solid tantalum electrolytic

**AAJ002-001 01 M..8 A57**  
simple non-quantitative code

**variable capacitor type variable**

Code of the type of variable capacitor.

PRESET = pre-set capacitor  
TRIM = trimmer capacitor  
TUNE = tuning capacitor

**AAJ003-001 01 M..8 A57**  
simple non-quantitative code

**single resistor type resistor**

Code of the type of single linear resistor.

CHIP = fixed chip resistor  
FUS = fixed fusing resistor  
LP = fixed low-power resistor  
PREC = fixed precision resistor  
PWR = fixed power resistor  
THERM = fixed thermostat resistor

**AAJ004-001 01 M..8 A57**  
simple non-quantitative code

**NTC thermistor type NTC thermistor**

Code of the application type of a NTC thermistor.

CURR = current control NTC thermistor

**AAJ006-002 01 M..8 A57**  
simple non-quantitative code

**adjustability type adjust type**

Code of the type of potentiometer according to the means by which its value is adjusted.

LPROT = low-power rotary potentiometer  
PRECROT = rotary precision potentiometer  
PRESET = preset potentiometer  
PWRROT = power rotary potentiometer  
SLIDE = slide potentiometer

**AAJ007-001 01 A 1 A56**  
simple non-quantitative code

**built-in fuse built-in fuse**

An indication (Y or N) as to whether a solid tantalum capacitor contains a built-in fuse.

N = no built-in fuse  
Y = with built-in fuse

**AAJ008-001 01 M..8 A58**  
simple string

**size code size code**

The size code of a capacitor package intended for surface mounting.

NOTE  
The code is formed from the nominal length followed by the nominal width both expressed in units of 0,1mm.

|                                                                                                                                                                                                                                                    |                                        |                                  |     |                                                                                                                                                      |                    |                                    |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------|-----|
| AAJ009-001                                                                                                                                                                                                                                         | 01<br>simple                           | M..35<br>string                  | A55 | AAJ013-001                                                                                                                                           | 01<br>level nom    | NR2 S..3.3<br>real measure<br>%    | E33 |
| structure                                                                                                                                                                                                                                          | structure                              |                                  |     | tolerance of TC of resistance TC_tol                                                                                                                 |                    |                                    |     |
| Structure of a resistor intended for high-power applications                                                                                                                                                                                       |                                        |                                  |     | TCR tolerance TC <sub>tol</sub>                                                                                                                      |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | The nominal tolerance on temperature coefficient of resistance (in %) for a resistor used for temperature sensing.                                   |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | IEC60115-1, JIS C 5201-1                                                                                                                             |                    |                                    |     |
| AAJ010-001                                                                                                                                                                                                                                         | 01<br>level max                        | NR3..3.3ES2<br>real measure<br>V | E06 | AAJ014-001                                                                                                                                           | 01<br>level nom    | NR3..3.3ES2<br>real measure<br>m   | T03 |
| rated voltage                                                                                                                                                                                                                                      | V <sub>r</sub><br>V <sub>r</sub>       |                                  |     | potentiometer size D<br>D                                                                                                                            |                    |                                    |     |
| The maximum dc or ac rms voltage (in V) calculated from the square root of the product of the rated resistance and the rated dissipation which may be applied continuously to a resistor at any operating temperature below the rated temperature. |                                        |                                  |     | The nominal value of the major dimension (in m) of the body of a rotary potentiometer measured in a direction perpendicular to the operating shaft.  |                    |                                    |     |
| NOTE                                                                                                                                                                                                                                               |                                        |                                  |     |                                                                                                                                                      |                    |                                    |     |
| At high values of resistance, above the critical resistance value, the rated voltage may not be applicable because of the size and the construction of the resistor.                                                                               |                                        |                                  |     |                                                                                                                                                      |                    |                                    |     |
| IEC60115-1, JIS C 5201-1                                                                                                                                                                                                                           |                                        |                                  |     |                                                                                                                                                      |                    |                                    |     |
| AAJ011-001                                                                                                                                                                                                                                         | 01<br>level min                        | NR3..3.3ES2<br>real measure<br>W | E35 | AAJ015-001                                                                                                                                           | 01<br>level minMax | NR3..3.3ES2<br>real measure<br>N.m | K12 |
| fusing power                                                                                                                                                                                                                                       | P <sub>fuse</sub><br>P <sub>fuse</sub> |                                  |     | rotation torque T <sub>rot</sub><br>T <sub>rot</sub>                                                                                                 |                    |                                    |     |
| The minimum power (in W) that make will ensure that a fusing resistor blows in the specified period of time.                                                                                                                                       |                                        |                                  |     | The value as specified by level (minMax) of the torque (in N.m) required to operate the shaft of a rotary potentiometer.                             |                    |                                    |     |
| AAJ049-001 = fusing time                                                                                                                                                                                                                           |                                        |                                  |     | AAJ016-001                                                                                                                                           |                    |                                    |     |
| EIAJ RC-2124                                                                                                                                                                                                                                       |                                        |                                  |     | 01<br>simple                                                                                                                                         |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | M..8<br>non-quantitative code                                                                                                                        |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | A56                                                                                                                                                  |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | application type application                                                                                                                         |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | Code of the application class of a resistor or potentiometer.                                                                                        |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | REMARKS:                                                                                                                                             |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | A precision resistor is one with stable characteristics and, if a potentiometer, is capable of precise setting                                       |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | A component capable of dissipating powers up to 1 W is generally regarded as being a low-power type,                                                 |                    |                                    |     |
|                                                                                                                                                                                                                                                    |                                        |                                  |     | whilst one capable of dissipating powers of over 5 W is a high-power type. Between these values, the distinction between types depends on structure. |                    |                                    |     |
| AAJ012-002                                                                                                                                                                                                                                         | 01<br>simple                           | M..8<br>non-quantitative code    | A57 |                                                                                                                                                      |                    |                                    |     |
| fuse type                                                                                                                                                                                                                                          | fuse type                              |                                  |     |                                                                                                                                                      |                    |                                    |     |
| Code of the type of a fuse.                                                                                                                                                                                                                        |                                        |                                  |     |                                                                                                                                                      |                    |                                    |     |
| CUR = current-activated fuses                                                                                                                                                                                                                      |                                        |                                  |     |                                                                                                                                                      |                    |                                    |     |
| THERM = thermally-activated fuses                                                                                                                                                                                                                  |                                        |                                  |     |                                                                                                                                                      |                    |                                    |     |

**AAJ017-001 01** **M..8** **A58**  
simple non-quantitative code

**adjustment direction** **adjust dir**

Code for the direction of operation of a preset potentiometer relative to the surface on which it is mounted.

HORIZ = horizontal (side adjustment)  
VERT = vertical (top adjustment)

**AAJ018-001 01** **M..8** **A56**  
simple non-quantitative code

**sealing class** **sealing**

Code for the sealing provided to protect the slider contact area from the environment.

DUSTP = dust-proof seal  
OPEN = open – no sealing  
SEAL = fully sealed

**AAJ019-001 01** **NR3..3.3ES2** **T03**  
level nom real measure  
m

**slide length** **I\_sl**  
stroke length I<sub>sl</sub>

The nominal distance of travel (in m) of the moving contact actuator of a slider potentiometer.

**AAJ020-001 01** **NR3..3.3ES2** **K09**  
level minMax real measure  
N

**slide force** **F\_sl**  
F<sub>sl</sub>

The value as specified by level (minMax) of the force (in N) required to operate the adjuster of a slider potentiometer.

**AAJ021-001 01** **NR3..3.3ES2** **K09**  
level minMax real measure  
N

**lever stop force** **F\_st**  
F<sub>st</sub>

The value as specified by level (minMax) of the force (in N) required to over-ride the end stops of a slider potentiometer.

**AAJ022-001 01** **M..8** **A57**  
simple non-quantitative code

**PCB connector type** **PCB connector**

Code of the type of connector intended for use with PC boards.

BTB = Board-to-board  
BTC = board-to-cable  
EDGE = card edge connectors  
FPC = FPC/FFC  
JUMP = PCB jumper

**AAJ023-001 01** **M..8** **A57**  
simple non-quantitative code

**contact type** **contact**

Code of the type of connector contact.

CRIMP = crimped contact  
ID = insulation displacement contact  
SCREW = screwed contact  
SOLDER = soldered contact

**AAJ024-001 01** **M..8** **A57**  
simple non-quantitative code

**plug/jack type** **plug/jack**

Code of the type of plug or jack.

ASSY = plug assembly  
CMLPX = complex jack board  
CONC = concentric plug or jack  
PIN = pin plug or jack  
PWR = plug or jack for dc power

**AAJ025-001 01** **M..8** **A57**  
simple non-quantitative code

**concentric plug/jack type** **concentric**

Code of the type of concentric plug or jack.

JACK = concentric jack  
MULT = concentric multiple jack  
PLUG = concentric plug

**AAJ026-001 01** **M..8** **A57**  
simple non-quantitative code

**pin plug/jack type** **pin**

Code of the type of pin plug or jack.

JACK = pin jack  
MULT = pin multiple jack  
PLUG = pin plug  
SHLD = shielded pin jack

|                   |           |                       |            |
|-------------------|-----------|-----------------------|------------|
| <b>AAJ031-001</b> | <b>01</b> | <b>M..8</b>           | <b>A57</b> |
|                   | simple    | non-quantitative code |            |

| terminal type | terminal |
|---------------|----------|
|---------------|----------|

Code of the type of terminal.

ARRY = terminal array  
BRD = terminal board  
ROD = terminal rod  
SM = small terminal

AAJ032-001 01 M.8 A57  
simple non-quantitative code

small terminal type      ~~small terminal~~

Code of the type of small terminal.

GND = earth terminal  
LS = speaker terminal

**terminal array type**      **terminal array**

Code of the type of terminal array.

~~BLOCK~~ = block-type array  
~~HARM~~ = harmonica-type array

AAJ034-001 01 NR3..3.3ES2 F01

|                      |           |
|----------------------|-----------|
| fuse pre-arcing time | $t_{fus}$ |
|                      | $t_{fus}$ |
|                      | $t_{arc}$ |

The minimum time (in s) from the instant at which the fusing current is exceeded to the instant at which arcing begins.

AAE014-005 = ambient temperature

JIS C 6575

## JIS C 6575

JIS C 6575

IN = power inlet socket  
OUT = power outlet socket  
XOVER = power changeover socket

**AAJ035-001 01 NR3..3.3ES2 E35**  
level minMax real measure  
W/K

**dissipation factor**  $\frac{P_T}{P_r}$

The value as specified by level (minMax) of the power (in W) required to raise the temperature of a thermistor in a state of equilibrium by 1K.

**NOTE**

The dissipation factor is calculated by dividing the power dissipated (in W) in the thermistor by the resulting temperature rise (in K).

JIS C 2570

**AAJ036-001 01 M..8 A55**  
simple non-quantitative code

**active element active element**

Code for the active element in a thermally-activated fuse.

ELEM = thermal element  
PELL = thermal pellet

**AAJ037-001 01 M..8 A55**  
simple non-quantitative code

**termination style termination**

Code for the method of connecting a conductor to the contact of a connector.

A = screw  
C = crimp  
ID = insulation displacement  
M = surface mount  
P = press-in  
S = solder  
T = tab  
W = wrap

**AAJ038-001 01 M..8 A55**  
simple non-quantitative code

**coupling style coupling**  
connecting style

Code for the method by which two parts of a connector are coupled or locked together.

BAY = bayonet  
PUSH = push-pull  
SCREW = screw

**AAJ039-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**contact pitch**  $\frac{e}{e}$

The nominal distance (in m) between adjacent contacts in a row of a connector with contacts in a rectangular array

**AAJ040-001 01 NR3..3.3ES2 T03**  
level minMax real measure  
m

**circuit board thickness**  $\frac{t}{t}$   
card thickness

The value as specified by level (minMax) of the thickness of the circuit board to which a connector may be attached

**AAJ041-001 01 NR2 S..3.3 E06**  
level nom real measure  
dB

**voltage standing wave ratio VSWR**  
VSWR

The nominal value of the voltage standing wave ratio (in dB) of a radio-frequency connector or microwave component.

**AAJ042-001 01 NR3..3.3ES2 E06**  
level max real measure  
V

**connector rated voltage**  $\frac{V_r}{U_r}$

The maximum voltage (in V) that may exist between any two contacts or between any contact and the shell or casing of a connector.

**AAJ043-001 01 NR3..3.3ES2 E01**  
level max real measure  
A

**connector rated current**  $\frac{I_r}{I_r}$

The maximum total current (in A) that may be carried by a connector

**AAJ044-001 01 NR3..3.ES2 T03**  
 level miNoMax real measure  
 m

**connector diameter D**  
 D

The value as specified by level (miNoMax) of the overall diameter of a connector with a circular or near-circular cross-section.

**AAJ045-001 01 M..8 A56**  
 simple non-quantitative code

**direction of insertion insertion dir**

Code for the direction of insertion of a jack.

HORIZ = horizontal (parallel to mounting plane)  
 VERT = vertical (perpendicular to mounting plane)

**AAJ046-001 01 M..35 A58**  
 simple string

**package type package**  
 IC package

The type of package containing one or more integrated circuits for which a socket is intended.

**AAJ047-001 01 M..8 A58**  
 simple non-quantitative code

**switch type switch type**

Code of the type of switch included with a power socket.

DPDT = double pole, double throw  
 DPST = double pole, single throw  
 NONE = no switch  
 SPDT = single pole, double throw  
 SPST = single pole, single throw

**AAJ048-001 01 M..8 A57**  
 simple non-quantitative code

**fibre optic component fibre optic**

Code of the type of fibre optic component.

ATT = fibre optic attenuator  
 BRA = fibre optic branch  
 CAB = fibre optic cable  
 CONN = fibre optic connector  
 COUP = fibre optic coupler/splicer  
 DET = fibre optic detector  
 FIL = fibre optic filter  
 ISOL = fibre optic isolator  
 LENS = fibre optic lens  
 LINK = fibre optic link  
 MOD = fibre optic modulator  
 NETW = fibre optic network  
 SOURC = fibre optic light source  
 SWI = fibre optic switch  
 TXRX = fibre optic transmitter/receiver  
 WG = optical waveguide

**AAJ049-001 01 NR3..3.ES2 T07**  
 simple real measure  
 s

**fusing time @t\_fuse**  
 @t<sub>fuse</sub>

The time (in s) within which a fusing resistor should blow when a power not less than the specified fusing power is dissipated in it.

EIAJ RC-2124

**AAJ051-001 01 M..17 A55**  
 simple string

**electrolyte type electrolyte**

The physical form of the electrolyte in an electrolytic capacitor.

**AAJ052-001 01 M..17 A55**  
 simple string

**anode type anode type**

The porosity type of the anode in an electrolytic capacitor.



**AAJ053-001 01 NR3..3.3ES2 E06**  
level minMax real measure  
V

**category voltage**  $V_c$   
 $V_c$   
 $U_c$

The value as specified by level (minMax) of the category voltage range (in V) for a capacitor.

**NOTE**

The category voltage represents the range of permissible operating voltages at all temperatures within the category temperature range.

**AAJ054-001 01 NR3..3.3ES2 E06**  
level minMax real measure  
V

**surge voltage**  $V_{surge}$   
 $V_{surge}$   
 $U_{surge}$

The value as specified by level (minMax) of the surge voltage range (in V) for a capacitor.

**AAJ055-001 01 NR3..3.3ES2 H02**  
level minMax real measure  
Cel

**rated temperature**  $T_r$   
 $T_r$

The value as specified by level (minMax) of the rated temperature range (in Cel) for a capacitor.

**AAJ056-001 01 NR3..3.3ES2 H02**  
level minMax real measure  
Cel

**category temperature**  $T_c$   
 $T_c$

The value as specified by level (minMax) of the category temperature range (in Cel) for a component.

**NOTE**

The category temperature range is that range of ambient temperatures over which the component may be operated continuously.

**AAJ057-001 01 NR3 S..3.3ES2 E09**  
level miNoMax real measure  
%

**capacitance change with temperature**  $\Delta C/C$   
 $\Delta C/C$

The value as specified by level (miNoMax) of the variation of capacitance (in %) with temperature over a specified temperature range ( $T_1$  to  $T_2$ ).

AAE958-005 = temperature  $T_1$

AAE959-005 = temperature  $T_2$

**AAJ058-001 01 NR3..3.3ES2 E44**  
level miNoMax real measure  
 $\Omega$

**impedance of a capacitor**  $Z$   
 $Z$

The value as specified by level (miNoMax) of the modulus of the impedance (in ohms) of a capacitor at a specified frequency.

AAE029-005 = frequency

**AAJ059-001 01 M..8 A57**  
simple non-quantitative code

**filter type** **filter type**

Code of the type of filter.

ACT = active filter  
DIEL = dielectric filter  
LCR = LCR filter  
MECH = mechanical filter  
PIEZO = piezo-electric ceramic filter  
SAW = surface-acoustic-wave filter  
TRAP = trap  
XTL = quartz-crystal filter

**AAJ060-001 01 NR2..3.3 E06**  
level nom real measure  
V

**rated voltage**  $V_r$   
 $V_r$   
 $U_r$

The value of the nominal voltage (in V) applied across the terminals of a PTC thermistor at which the device is intended to operate.

**AAJ061-001 01 NR2..3.3 E06**  
level max real measure  
V

**maximum operating voltage V\_max**  
V<sub>max</sub>  
U<sub>max</sub>

The value of the maximum voltage (in V) that may be applied across the terminals of a PTC thermistor.

**AAJ062-001 01 NR3..3.3ES2 E01**  
level max real measure  
A

**maximum current I\_max**  
I<sub>max</sub>

The value of the maximum current (in A) that may be passed through a PTC thermistor at its rated voltage.

**AAJ063-001 01 NR3..3.3ES2 E49**  
level nom real measure  
W

**power consumption P\_I**  
P<sub>I</sub>

The value of the maximum power that may be dissipated in a PTC thermistor at ambient temperature and with rated voltage applied.

AAE014-005 = ambient temperature

**AAJ064-001 01 NR1..4 Q56**  
level nom integer measure  
1

**number of poles n\_p**  
n<sub>p</sub>

The number of electrically separate conductive paths that are controlled by a switch.

**AAJ065-001 01 NR3..3.3ES2 T03**  
level nom real measure  
m

**travel e\_tr**  
e<sub>tr</sub>

The nominal distance (in m) between adjacent positions of a switch with rectilinear operation.

**AAJ066-001 01 NR2..3.3 T01**  
level nom real measure  
deg

**angular travel \$a\_tr**  
\$alpha<sub>tr</sub>

The nominal angular distance (in deg) between adjacent positions of a switch with rotary operation

**AAJ067-001 01 NR2..3.3 A59**  
level miNoMax real measure  
1

**operating life n\_cyc**  
n<sub>cyc</sub>

The minimum number of operating cycles for which a switch is designed to undergo during its life.

**AAJ068-001 01 M..35 A58**  
simple string

**shaft style shaft style**

The style of the operating shaft of a switch with rotary action.

**AAJ069-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**shaft length L\_shaft**  
L<sub>shaft</sub>

The value as specified by level (miNoMax) of the length (in m) of the shaft of a switch having rotary action measured from the tip of the shaft to the mounting surface.

**AAJ070-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure  
m

**shaft diameter d\_shaft**  
d<sub>shaft</sub>

The value as specified by level (miNoMax) of the diameter (in m) of the shaft of a switch having rotary action.

|                                                                                                                                                                                                                                          |                        |                                      |            |                                                                                                                                                           |                            |                                         |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------|------------|
| <b>AAJ071-001</b>                                                                                                                                                                                                                        | <b>01</b><br>simple    | <b>M..70</b><br>string               | <b>A55</b> | <b>AAJ076-001</b>                                                                                                                                         | <b>01</b><br>level nom     | <b>NR2..3.3</b><br>real measure<br>%    | <b>E22</b> |
| <b>additional features</b>                                                                                                                                                                                                               |                        | <b>add features</b>                  |            | <b>inductance tolerance (%)</b> <b>L_tol%</b><br>L_tol%                                                                                                   |                            |                                         |            |
| Description of features that are incorporated in a switch in addition to the switching action                                                                                                                                            |                        |                                      |            | The nominal tolerance (in %) of the value of inductance of an inductor.                                                                                   |                            |                                         |            |
| REMARKS:<br>Additional features may include such items as indicator lamps, locking mechanisms, earthing terminal etc.                                                                                                                    |                        |                                      |            | REMARKS:<br>Used only in cases of equal positive and negative tolerance values.                                                                           |                            |                                         |            |
| <b>AAJ072-001</b>                                                                                                                                                                                                                        | <b>01</b><br>simple    | <b>M..70</b><br>string               | <b>A55</b> | <b>AAJ077-001</b>                                                                                                                                         | <b>01</b><br>level nom     | <b>NR2..3.3</b><br>real measure<br>%    | <b>E22</b> |
| <b>sealing</b>                                                                                                                                                                                                                           |                        | <b>sealing</b>                       |            | <b>inductance tolerance</b> <b>L_tol</b><br>L_tol                                                                                                         |                            |                                         |            |
| Description of the method of sealing of a switch.                                                                                                                                                                                        |                        |                                      |            | The nominal tolerance (in H) of the value of inductance of an inductor.                                                                                   |                            |                                         |            |
| <b>AAJ073-001</b>                                                                                                                                                                                                                        | <b>01</b><br>level nom | <b>NR2..3.3</b><br>real measure<br>s | <b>F02</b> | REMARKS:<br>Used only in cases of equal positive and negative tolerance values.                                                                           |                            |                                         |            |
| <b>thermal time-constant (power)</b>                                                                                                                                                                                                     |                        | <b>\$t_P</b>                         |            |                                                                                                                                                           |                            |                                         |            |
| The nominal time (in s) for the temperature of a thermistor element to change by 63,2 % of the difference between its initial and final temperatures following an abrupt change in the power dissipated at constant ambient temperature. |                        |                                      |            | <b>AAJ078-001</b>                                                                                                                                         | <b>01</b><br>simple        | <b>M..8</b><br>non-quantitative code    | <b>A57</b> |
| <b>image pickup device type</b>                                                                                                                                                                                                          |                        | <b>image pickup ty</b>               |            | <b>variable inductor type</b> <b>variable induct</b><br>Code of the type of a variable inductor.                                                          |                            |                                         |            |
| <b>AAJ074-001</b>                                                                                                                                                                                                                        | <b>01</b><br>simple    | <b>M..8</b><br>non-quantitative code | <b>A57</b> | ANT = antenna inductor<br>LF = low-frequency<br>RF = radio frequency                                                                                      |                            |                                         |            |
| Code of the type of an image pickup device.<br>CCDA = CCD area array sensor<br>CCDL = CCD linear array sensor<br>MOS = MOS sensor                                                                                                        |                        |                                      |            | <b>AAJ079-001</b>                                                                                                                                         | <b>01</b><br>level miNoMax | <b>NR3..3.3ES2</b><br>real measure<br>H | <b>E22</b> |
| <b>AAJ075-001</b>                                                                                                                                                                                                                        | <b>01</b><br>simple    | <b>M..8</b><br>non-quantitative code | <b>A57</b> | <b>minimum inductance</b> <b>L_min</b><br>L_min                                                                                                           |                            |                                         |            |
| <b>signal transformer type</b>                                                                                                                                                                                                           |                        | <b>signal transfor</b>               |            | The value as specified by level (miNoMax) of the minimum value of the range of values of inductance (in H) of a variable inductor at specified frequency. |                            |                                         |            |
| Code of the type of a signal transformer.<br>HYB = hybrid<br>LF = low-frequency<br>PUL = pulse<br>RF = radio frequency<br>ROT = rotary<br>WB = wide-band                                                                                 |                        |                                      |            | AAE029-005 = frequency                                                                                                                                    |                            |                                         |            |

**AAJ080-001 01 NR3..3.3ES2 E22**  
level miNoMax real measure  
H

**maximum inductance L\_max**  
L<sub>max</sub>

The value as specified by level (miNoMax) of the maximum value of the range of values of inductance (in H) of a variable inductor at specified frequency.

AAE029-005 = frequency

**AAJ081-001 01 M..8 A57**  
simple non-quantitative code

**spark gap type spark gap type**

Code of the type of spark gap.

AIR = air spark gap  
GAS = gas-filled spark gap

**AAJ082-001 01 NR2..3.3 E06**  
level nom real measure  
V

**dc breakdown voltage V\_BR**  
V<sub>BR</sub>  
U<sub>BR</sub>

The nominal value of the voltage (in V) at which a discharge occurs between the electrodes of a spark gap as the voltage is gradually increased.

#### NOTE

The dc breakdown voltage is measured with a rate of voltage increase between 100 V/s and 500 V/s

**AAJ083-001 01 NR2..3.3 E06**  
level nom real measure  
V

**breakdown voltage tolerance V\_BR(tol)**  
V<sub>BR(tol)</sub>  
U<sub>BR(tol)</sub>

The nominal value of the tolerance (in V) of the dc breakdown voltage of a spark gap.

#### REMARKS:

Used only in cases of equal positive and negative tolerance values.

**AAJ084-001 01 NR3..3.3ES2 E09**  
level max real measure  
F

**capacitance C\_gap**  
C<sub>gap</sub>

The maximum value of the capacitance (in F) between the electrodes of a spark gap at specified frequency and temperature.

AAE029-005 = frequency  
AAE685-005 = temperature

**AAJ085-001 01 NR2..3.3 E06**  
level max real measure  
V

**withstanding voltage V\_with**  
V<sub>with</sub>  
U<sub>with</sub>

The maximum value of the ac voltage that may be applied across the electrodes of a gas-filled spark gap without causing breakdown.

**AAJ086-001 01 NR2..3.3 E01**  
level max real measure  
A

**surge current I\_surge**  
I<sub>surge</sub>

The maximum value of the pulse current (in A) which can be passed through a gas-filled spark gap.

#### REMARKS:

Test measurements are made with pulse waveforms of 8 µs to 20 µs.

**AAJ087-001 01 NR3..3.3ES2 E33**  
level min real measure  
Ω

**insulation resistance R\_ins**  
R<sub>ins</sub>

The minimum resistance (in ohms) between one terminal or several terminals connected together and the case or enclosure of a component at specified voltage.

**AAJ088-001 01 M..8 A57 AAJ093-001 01 NR3..3.3ES2 T07**  
 simple non-quantitative code level min real measure s

**resonator type resonator type**

Code of the type of resonator.

CAV = cavity resonator  
 DIEL = dielectric resonator  
 LCR = LC/CR resonator  
 MECH = mechanical resonator  
 MR = magnetostrictive resonator  
 PIEZO = piezo-electric ceramic resonator  
 SAW = surface-acoustic-wave resonator  
 XTL = quartz-crystal resonator

**burst-mode cycle time t<sub>CK</sub>**

The minimum time interval (in s) that must elapse between successive read/write operations for a DRAM operating in burst mode.

**AAJ094-001 01 NR3..3.3ES2 T07**  
 level min real measure s

**random read/write cycle time t<sub>RC</sub>**

The minimum time interval (in s) that must elapse between successive random read/write operations for a DRAM.

**AAJ089-001 01 NR3..3.3ES2 F03**  
 level nom real measure Hz

**resonant frequency f<sub>0</sub>**

The nominal frequency (in Hz) at which a resonator produces its maximum response.

**AAJ095-001 01 NR3..3.3ES2 T07**  
 level max real measure s

**access time from RAS t<sub>RAC</sub>**

The maximum time interval (in s) between the application of the RAS Row Address Strobe) input pulse, other necessary inputs being already present, and the availability of valid data signals at an output of a DRAM.

**AAJ090-001 01 NR3..3.3ES2 E46**  
 level miNoMax 1 real measure

**quality factor Q**

The value as specified by level (miNoMax) of the quality factor of a resonator at a specified frequency.

AAE029-005 = frequency

**AAJ096-001 01 NR3..3.3ES2 T07**  
 level max real measure Hz

**clock frequency f<sub>CK</sub>**

The maximum time frequency (in Hz) of the clock signal applied to a DRAM.

**AAJ091-001 01 NR3..3.3ES2 T07**  
 level max real measure s

**access time from address t<sub>AA</sub>**

The maximum time interval (in s) between the application of the address input, other necessary inputs being already present, and the availability of valid data signals at an output of a DRAM.

**AAJ092-001 01 NR3..3.3ES2 T07**  
 level max real measure s

**access time from clock t<sub>AC</sub>**

The maximum time interval (in s) between the application of the clock pulse, other necessary inputs being already present, and the availability of valid data signals at an output of a DRAM.

**AAJ098-001 01 NR3 S..3.3ES2 T07**  
level min real measure  
s

**address set-up time** **t<sub>AS</sub>**  
t<sub>AS</sub>

The minimum time interval (in s) between application of a signal that is maintained at the address input terminal and a subsequent active transition of the corresponding timing pulse of a memory device at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

REMARKS:

For further information, refer to AAF212.

**AAJ101-001 01 NR3 S..3.3ES2 T07**  
level min real measure  
s

**input hold time** **t<sub>IH</sub>**  
t<sub>IH</sub>

The minimum time interval (in s) during which a signal must be retained at an input terminal after the subsequent active transition of the corresponding timing signal of a memory device at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

REMARKS:

For further information, refer to AAF213.

**AAJ099-001 01 NR3 S..3.3ES2 T07**  
level min real measure  
s

**address hold time** **t<sub>AH</sub>**  
t<sub>AH</sub>

The minimum time interval (in s) during which the address signal must be retained at an input terminal after the subsequent active transition of the corresponding timing signal of a memory device at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

REMARKS:

For further information, refer to AAF213.

**AAJ102-001 01 NR3 S..3.3ES2 T07**  
level min real measure  
s

**clock set-up time** **t<sub>CKS</sub>**  
t<sub>CKS</sub>

The minimum time interval (in s) between application of the clock signal that is maintained at an input terminal and a subsequent active transition of the corresponding timing pulse of a memory device at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

REMARKS:

For further information, refer to AAF212.

**AAJ100-001 01 NR3 S..3.3ES2 T07**  
level min real measure  
s

**input set-up time** **t<sub>IS</sub>**  
t<sub>IS</sub>

The minimum time interval (in s) between application of a signal that is maintained at an input terminal and a subsequent active transition of the corresponding timing pulse of a memory device at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

REMARKS:

For further information, refer to AAF212.

**AAJ103-001 01 NR3 S..3.3ES2 T07**  
level min real measure  
s

**clock hold time** **t<sub>CKH</sub>**  
t<sub>CKH</sub>

The minimum time interval (in s) during which the clock signal must be retained at an input terminal after the subsequent active transition of the corresponding timing signal of a memory device at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

REMARKS:  
For further information, refer to AAF213.

**AAJ104-001 01 NR3 S..3.3ES2 T07**  
level min real measure  
s

**output hold time** **t<sub>OH</sub>**  
t<sub>OH</sub>

The minimum time interval (in s) during which a signal is retained at an output terminal after the subsequent active transition of the corresponding timing signal of a memory device at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

REMARKS:  
For further information, refer to AAF213.

**AAJ105-001 01 NR3..3.3ES2 T07**  
level minMax real measure  
s

**transition time** **t<sub>T</sub>**  
t<sub>T</sub>

The limits to the value as specified by level (minMax) of the HIGH-to-LOW or LOW-to-HIGH level transition time (in s) which must be observed at the clock input of a memory device at specified supply voltage and in a temperature range between specified temperatures (T<sub>1</sub> and T<sub>2</sub>).

#### NOTE

The LOW voltage level is specified as VIL and the HIGH level as VIH.

AAE102-005 = supply voltage  
AAE958-005 = temperature T<sub>1</sub>  
AAE959-005 = temperature T<sub>2</sub>

**AAJ106-001 01 M..8 A57**  
simple non-quantitative code

**dielectric material** **dielectric**  
dielectric  
insulator

Code for the type of a dielectric material.

CER = ceramic  
CLO = cloth  
GLA = glass  
MIC = mica  
PAP = paper  
RUB = rubber  
WOO = wood

**AAJ107-001 01 M..8 A57**  
simple non-quantitative code

**printed wiring base material** **PW base**  
printed wiring base  
PW base

Code for the type of base material used in a printed wiring laminate.

GCN = glass cloth, non-woven core  
GCP = glass cloth, paper core  
GLF = glass fabric  
GMP = glass mod-and-un polyimide  
GTE = glass ismal/triaz/epox  
PER = paper base, epoxy resin  
PPR = paper base, phenolic resin  
SFF = synthetic fibre fabric

**AAJ108-001 01 NR3..3.3ES2 T03**  
level nom real measure

**copper thickness** **t<sub>Cu</sub>**  
Cu thickness t<sub>Cu</sub>

The nominal thickness (in m) of the copper cladding on a printed-wiring laminate.

**AAJ109-001 01 NR1..2 Q56**  
level nom integer measure

**number of layers** **n<sub>lay</sub>**  
n<sub>lay</sub>

The number of layers in a multilayer printed-wiring circuit.



**AAJ110-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure

**circuit length** **D**  
board length D

The length (in m) of a printed wiring circuit as given by level (miNoMax).

**AAJ111-001 01 NR3..3.3ES2 T03**  
level miNoMax real measure

**circuit width** **E**  
board width E

The width (in m) of a printed wiring circuit as given by level (miNoMax).

**AAJ112-001 01 NR3..3.3ES2 T03**  
level min real measure

**track width** **d<sub>w</sub>**  
d<sub>w</sub>

The minimum width (in m) of a conductive track on a printed wiring circuit.

**AAJ113-001 01 NR3..3.3ES2 T03**  
level min real measure

**track spacing** **d<sub>s</sub>**  
d<sub>s</sub>

The minimum spacing (in m) between adjacent conductive tracks on a printed wiring circuit.

**AAJ114-001 01 M..35 A57**  
simple string

**connector material** **con finish**  
connector finish

The material used to coat or finish the conducting strips forming connections at the edge of a printed wiring circuit.

**AAJ115-001 01 NR3..3.3ES2 T03**  
level nom real measure

**connector pitch** **e**  
e

The nominal distance (in m) between the centres of adjacent conducting strips forming connections at the edge of a printed wiring circuit.

**AAJ116-001 01 M..8 A55**  
simple non-quantitative code

**printed circuit type** **PW type**  
printed board type  
PC board type

Code for the type of printed wiring circuit or board.

BUP = build-up  
CER = ceramic-based  
DFR = double-sided flex-rigid  
MET = metal-based  
MFR = multi-layer flex-rigid  
MLF = multi-layer flexible  
MLR = multi-layer rigid  
SDF = single- or double-sided flexible  
SDR = single- or double-sided rigid

**AAJ117-001 01 M..8 A55**  
simple non-quantitative code

**microwave component type** **microwave type**

Code for the type of microwave component.

ATT = attenuator  
CIRC = circulator  
COAX = coaxial guide  
COUP = coupler  
DET = detector  
DIR = directional coupler  
DIV = divider/combiner  
ISO = isolator  
MIX = mixer  
PS = phase shifter  
RES = resonator  
SWI = switch  
TERM = terminator  
WAV = waveguide

**AAJ118-001 01 M..8 A55**  
simple non-quantitative code

**connection type** **connect type**

Code for the type of connection for a microwave component.

CONN = connector  
PIN = pin  
SL = strip-line  
SM = surface-mount  
WAV = waveguide

**AAJ119-001 01 NR1 S..4 E49**  
level miNoMax integer measure  
dB

**insertion loss**  
insertion loss

The value as specified by level (miNoMax) of the insertion loss (in dB) of a microwave component.

**AAJ122-001 01 NR3..3.3ES2 F03**  
level minMax real measure  
Hz

**frequency range**  
frequency band **f\_range**  
f<sub>range</sub>

The value as specified by level (minMax) of the frequencies (in Hz) over which a microwave component is designed to operate.

**AAJ120-001 01 NR1 S..4 E49**  
level miNoMax integer measure  
dB

**isolation**  
isolation

The value as specified by level (miNoMax) of the attenuation (in dB) provided in a direction opposite to that of the normal signal flow of a microwave component.

**AAJ123-001 01 M..8 A55**  
simple non-quantitative code

**potentiometer type** **POT type**

Code for the type of potentiometer.

MULT = multi-turn rotary  
SING = single-turn rotary

**AAJ121-001 01 NR3..3.3ES2 E35**  
level max real measure  
W

**maximum power handling** **P\_max**  
maximum power P<sub>max</sub>

The maximum value of the power (in W) which may be handled or transmitted by a microwave component.

**AAJ124-001 01 NR2..3.3 Q56**  
level nom real measure  
1

**number of turns** **n\_turn**  
n<sub>turn</sub>

The nominal value of the number of turns required to cover the full electrical range of a multi-turn rotary potentiometer.

## Annex D (normative)

### Drawings

#### D.1 Drawing definitions

The following table lists the drawings which are contained within this annex.

##### DAA001-001 01

##### ABD-W-T001

Bead package, straight axial wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA001.DXF |
| JPEG              | DAA001.JPG |
| Windows Meta-File | DAA001.WMF |

##### DAA002-001 01

##### BBD-W-T001

Bead package, straight bottom wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA002.DXF |
| JPEG              | DAA002.JPG |
| Windows Meta-File | DAA002.WMF |

##### DAA003-001 01

##### BBD-W-T002

Bead package, formed bottom wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA003.DXF |
| JPEG              | DAA003.JPG |
| Windows Meta-File | DAA003.WMF |

##### DAA004-001 01

##### BCY-W-T003

Cylindrical package, bottom leads on circle

|                   |            |
|-------------------|------------|
| DXF               | DAA004.DXF |
| JPEG              | DAA004.JPG |
| Windows Meta-File | DAA004.WMF |

##### DAA005-001 01

##### BCY-W-T004

Cylindrical package, straight in-line bottom leads

|                   |            |
|-------------------|------------|
| DXF               | DAA005.DXF |
| JPEG              | DAA005.JPG |
| Windows Meta-File | DAA005.WMF |

##### DAA006-001 01

##### BCY-W-T005

Cylindrical package, formed in-line bottom leads

|                   |            |
|-------------------|------------|
| DXF               | DAA006.DXF |
| JPEG              | DAA006.JPG |
| Windows Meta-File | DAA006.WMF |

##### DAA007-001 01

##### BCY-W-T006

Cylindrical package, bottom leads on square grid

|                   |            |
|-------------------|------------|
| DXF               | DAA007.DXF |
| JPEG              | DAA007.JPG |
| Windows Meta-File | DAA007.WMF |

##### DAA008-001 01

##### BCY-W-T007

Cylindrical package, offset in-line bottom leads

|                   |            |
|-------------------|------------|
| DXF               | DAA008.DXF |
| JPEG              | DAA008.JPG |
| Windows Meta-File | DAA008.WMF |

##### DAA009-001 01

##### ECY-R-T000

Cylindrical package, wrap-around terminals

|                   |            |
|-------------------|------------|
| DXF               | DAA009.DXF |
| JPEG              | DAA009.JPG |
| Windows Meta-File | DAA009.WMF |

##### DAA010-001 01

##### RCY-D-T001

Cylindrical package, straight radial tag leads

|                   |            |
|-------------------|------------|
| DXF               | DAA010.DXF |
| JPEG              | DAA010.JPG |
| Windows Meta-File | DAA010.WMF |

**DAA011-001 01**

**RCY-W-T001**

Cylindrical package, straight radial wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA011.DXF |
| JPEG              | DAA011.JPG |
| Windows Meta-File | DAA011.WMF |

**DAA012-001 01**

**ADB-W-T001**

Disc package, straight axial wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA012.DXF |
| JPEG              | DAA012.JPG |
| Windows Meta-File | DAA012.WMF |

**DAA013-001 01**

**BDB-W-T001**

Disc package, straight bottom wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA013.DXF |
| JPEG              | DAA013.JPG |
| Windows Meta-File | DAA013.WMF |

**DAA014-001 01**

**BDB-W-T002**

Disc package, formed bottom wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA014.DXF |
| JPEG              | DAA014.JPG |
| Windows Meta-File | DAA014.WMF |

**DAA015-001 01**

**BFM-P-T007**

Oval flange-mount package, offset bottom pins

|                   |            |
|-------------------|------------|
| DXF               | DAA015.DXF |
| JPEG              | DAA015.JPG |
| Windows Meta-File | DAA015.WMF |

**DAA016-001 01**

**BFM-P-T003**

Oval flange-mount package, bottom pins on circle

|                   |            |
|-------------------|------------|
| DXF               | DAA016.DXF |
| JPEG              | DAA016.JPG |
| Windows Meta-File | DAA016.WMF |

**DAA017-001 01**

**DFM-P-T009**

Flange-mount package, dual-in-line pins

|                   |            |
|-------------------|------------|
| DXF               | DAA017.DXF |
| JPEG              | DAA017.JPG |
| Windows Meta-File | DAA017.WMF |

**DAA018-001 01**

**SFM-T-T011**

Flange-mount package, single row, straight flat leads

|                   |            |
|-------------------|------------|
| DXF               | DAA018.DXF |
| JPEG              | DAA018.JPG |
| Windows Meta-File | DAA018.WMF |

**DAA019-001 01**

**SFM-T-T023**

Flange-mount package, single row, straight V-section leads

|                   |            |
|-------------------|------------|
| DXF               | DAA019.DXF |
| JPEG              | DAA019.JPG |
| Windows Meta-File | DAA019.WMF |

**DAA020-001 01**

**DFP-F-T001**

Dual flat pack, straight flat leads

|                   |            |
|-------------------|------------|
| DXF               | DAA020.DXF |
| JPEG              | DAA020.JPG |
| Windows Meta-File | DAA020.WMF |

**DAA021-001 01**

**BGA-B-T012**

Ball-grid array package, bottom terminals

|                   |            |
|-------------------|------------|
| DXF               | DAA021.DXF |
| JPEG              | DAA021.JPG |
| Windows Meta-File | DAA021.WMF |

**DAA022-001 01**

**DIP-P-T009**

Dual-in-line package, round pins

|                   |            |
|-------------------|------------|
| DXF               | DAA022.DXF |
| JPEG              | DAA022.JPG |
| Windows Meta-File | DAA022.WMF |

**DAA023-001 01****DIP-P-T010**

Dual-in-line package, rectangular pins

|                   |            |
|-------------------|------------|
| DXF               | DAA023.DXF |
| JPEG              | DAA023.JPG |
| Windows Meta-File | DAA023.WMF |

**DAA024-001 01****DIP-T-T000**

Dual-in-line package, standard through-hole leads

|                   |            |
|-------------------|------------|
| DXF               | DAA024.DXF |
| JPEG              | DAA024.JPG |
| Windows Meta-File | DAA024.WMF |

**DAA025-002 01****UPM-D-T013**

Stud-mount package, one fixed tag

|                   |            |
|-------------------|------------|
| DXF               | DAA025.DXF |
| JPEG              | DAA025.JPG |
| Windows Meta-File | DAA025.WMF |

**DAA026-002 01****UPM-D-T014**

Stud-mount package, two fixed tags

|                   |            |
|-------------------|------------|
| DXF               | DAA026.DXF |
| JPEG              | DAA026.JPG |
| Windows Meta-File | DAA026.WMF |

**DAA027-002 01****UPM-H-T015**

Stud-mount package, one flexible lead with tag

|                   |            |
|-------------------|------------|
| DXF               | DAA027.DXF |
| JPEG              | DAA027.JPG |
| Windows Meta-File | DAA027.WMF |

**DAA028-002 01****UPM-H-T016**

Stud-mount package, two flexible leads with tags

|                   |            |
|-------------------|------------|
| DXF               | DAA028.DXF |
| JPEG              | DAA028.JPG |
| Windows Meta-File | DAA028.WMF |

**DAA029-002 01****UPM-H-T017**

Stud-mount package, three flexible leads with tags

|                   |            |
|-------------------|------------|
| DXF               | DAA029.DXF |
| JPEG              | DAA029.JPG |
| Windows Meta-File | DAA029.WMF |

**DAA030-002 01****UPM-H-T018**

Stud-mount package, one flexible lead, no tag

|                   |            |
|-------------------|------------|
| DXF               | DAA030.DXF |
| JPEG              | DAA030.JPG |
| Windows Meta-File | DAA030.WMF |

**DAA031-001 01****ARC-D-T019**

Rectangular package, axial strip leads

|                   |            |
|-------------------|------------|
| DXF               | DAA031.DXF |
| JPEG              | DAA031.JPG |
| Windows Meta-File | DAA031.WMF |

**DAA032-001 01****ARC-W-T007**

Rectangular package, offset axial wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA032.DXF |
| JPEG              | DAA032.JPG |
| Windows Meta-File | DAA032.WMF |

**DAA033-001 01****BRC-W-T001**

Rectangular package, straight bottom wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA033.DXF |
| JPEG              | DAA033.JPG |
| Windows Meta-File | DAA033.WMF |

**DAA034-001 01****BRC-W-T002**

Rectangular package, formed bottom wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA034.DXF |
| JPEG              | DAA034.JPG |
| Windows Meta-File | DAA034.WMF |

**DAA035-001 01**

**ERC-M-T000**

Rectangular package, metallised ends

|                   |            |
|-------------------|------------|
| DXF               | DAA035.DXF |
| JPEG              | DAA035.JPG |
| Windows Meta-File | DAA035.WMF |

**DAA036-001 01**

**ERC-R-T000**

Rectangular package, wrap-around terminals

|                   |            |
|-------------------|------------|
| DXF               | DAA036.DXF |
| JPEG              | DAA036.JPG |
| Windows Meta-File | DAA036.WMF |

**DAA037-001 01**

**DSO-G-T020**

Dual small-outline package, multiple gull-wing leads

|                   |            |
|-------------------|------------|
| DXF               | DAA037.DXF |
| JPEG              | DAA037.JPG |
| Windows Meta-File | DAA037.WMF |

**DAA038-001 01**

**DSO-G-T021**

Small-outline package, three gull-wing leads

|                   |            |
|-------------------|------------|
| DXF               | DAA038.DXF |
| JPEG              | DAA038.JPG |
| Windows Meta-File | DAA038.WMF |

**DAA039-001 01**

**SSO-G-T022**

Small-outline package, two gull-wing leads, stub and tab

|                   |            |
|-------------------|------------|
| DXF               | DAA039.DXF |
| JPEG              | DAA039.JPG |
| Windows Meta-File | DAA039.WMF |

**DAA040-001 01**

**QCC-J-T000-B002**

Quad chip carrier, J-bend leads, non-bumped package

|                   |            |
|-------------------|------------|
| DXF               | DAA040.DXF |
| JPEG              | DAA040.JPG |
| Windows Meta-File | DAA040.WMF |

**DAA041-001 01**

**QCC-N-T000-B009**

Quad chip carrier, leadless non-cavity package (moulded)

|                   |            |
|-------------------|------------|
| DXF               | DAA041.DXF |
| JPEG              | DAA041.JPG |
| Windows Meta-File | DAA041.WMF |

**DAA042-001 01**

**QCC-N-T000-B010**

Quad chip carrier, leadless cavity package (ceramic)

|                   |            |
|-------------------|------------|
| DXF               | DAA042.DXF |
| JPEG              | DAA042.JPG |
| Windows Meta-File | DAA042.WMF |

**DAA043-001 01**

**ACY-W-T001-B003**

Cylindrical package, straight axial wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA043.DXF |
| JPEG              | DAA043.JPG |
| Windows Meta-File | DAA043.WMF |

**DAA044-001 01**

**ACY-W-T001-B004**

Top-hat package, straight axial wire leads

|                   |            |
|-------------------|------------|
| DXF               | DAA044.DXF |
| JPEG              | DAA044.JPG |
| Windows Meta-File | DAA044.WMF |

**DAA045-001 01**

**UCY-D-T000-B005**

Cylindrical package, top tag terminals, clamp mount

|                   |            |
|-------------------|------------|
| DXF               | DAA045.DXF |
| JPEG              | DAA045.JPG |
| Windows Meta-File | DAA045.WMF |

**DAA046-002 01****UCY-D-T000-B006**

Cylindrical package, top tag terminals, stud mount

|                   |            |
|-------------------|------------|
| DXF               | DAA046.DXF |
| JPEG              | DAA046.JPG |
| Windows Meta-File | DAA046.WMF |

**DAA050-001 01****PGA-P-T009-B007**

Pin-grid array package, cavity up

|                   |            |
|-------------------|------------|
| DXF               | DAA050.DXF |
| JPEG              | DAA050.JPG |
| Windows Meta-File | DAA050.WMF |

**DAA047-001 01****UCY-Y-T000-B005**

Cylindrical package, top screw terminals, clamp mount

|                   |            |
|-------------------|------------|
| DXF               | DAA047.DXF |
| JPEG              | DAA047.JPG |
| Windows Meta-File | DAA047.WMF |

**DAA051-001 01****PGA-P-T009-B008**

Pin-grid array package, cavity down

|                   |            |
|-------------------|------------|
| DXF               | DAA051.DXF |
| JPEG              | DAA051.JPG |
| Windows Meta-File | DAA051.WMF |

**DAA048-002 01****UCY-Y-T000-B006**

Cylindrical package, top screw terminals, stud mount

|                   |            |
|-------------------|------------|
| DXF               | DAA048.DXF |
| JPEG              | DAA048.JPG |
| Windows Meta-File | DAA048.WMF |

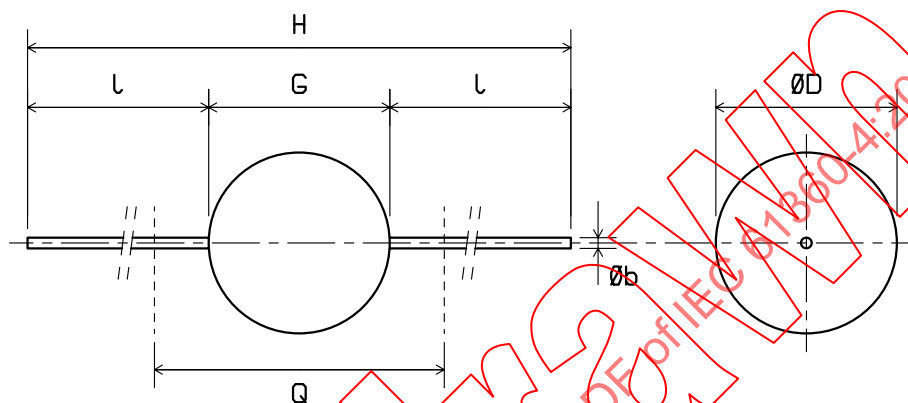
**DAA049-001 01****QFP-G-T000-B002**

Quad flat pack, gull-wing leads, non-bumped package

|                   |            |
|-------------------|------------|
| DXF               | DAA049.DXF |
| JPEG              | DAA049.JPG |
| Windows Meta-File | DAA049.WMF |



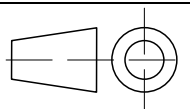
## D.2 Drawings



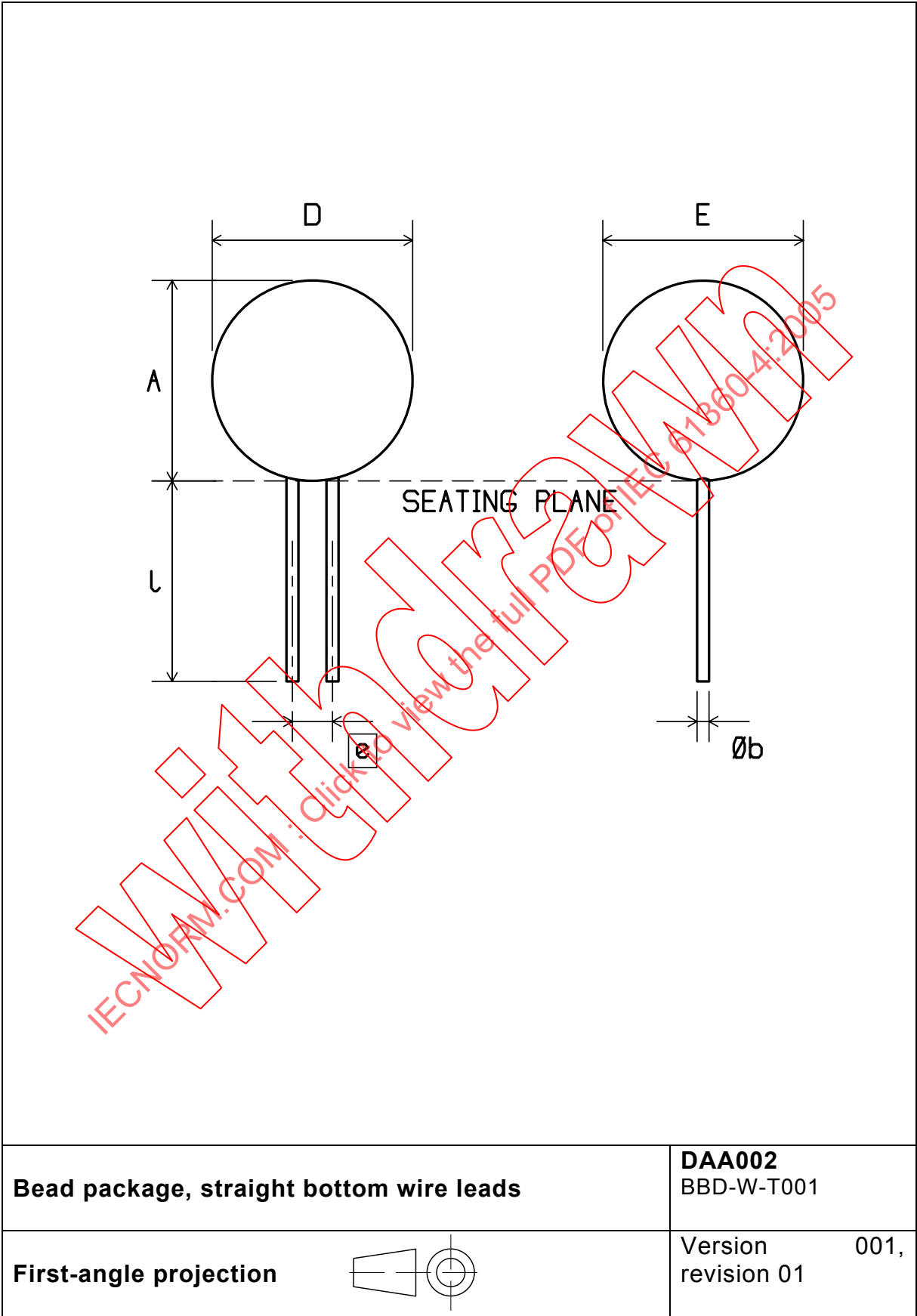
**Bead package, straight axial wire leads**

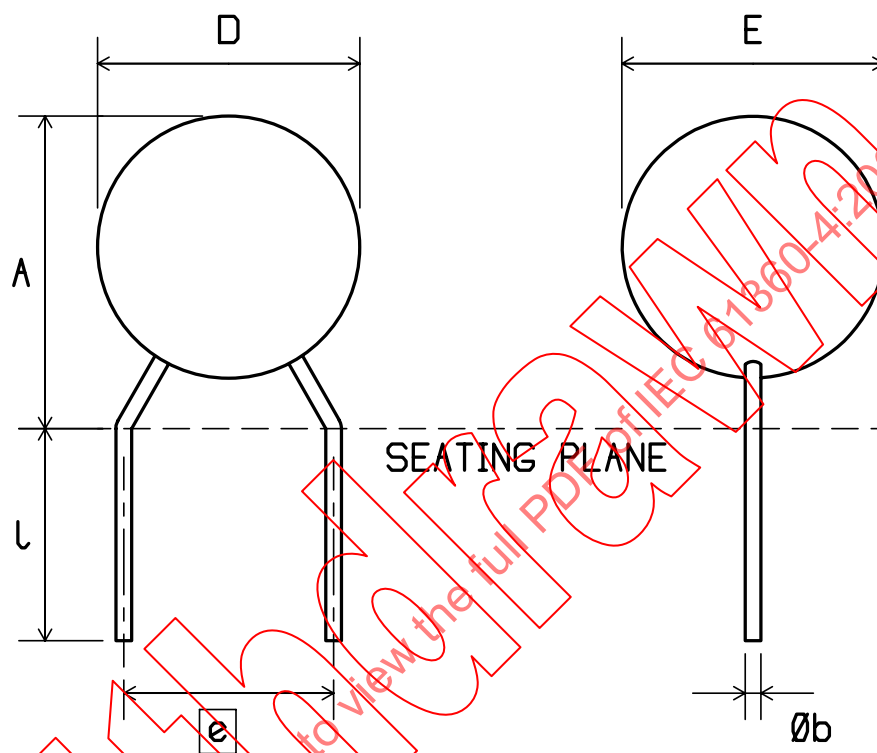
**DAA001**  
ABD-W-T001

**First-angle projection**



Version 001,  
revision 01

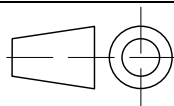




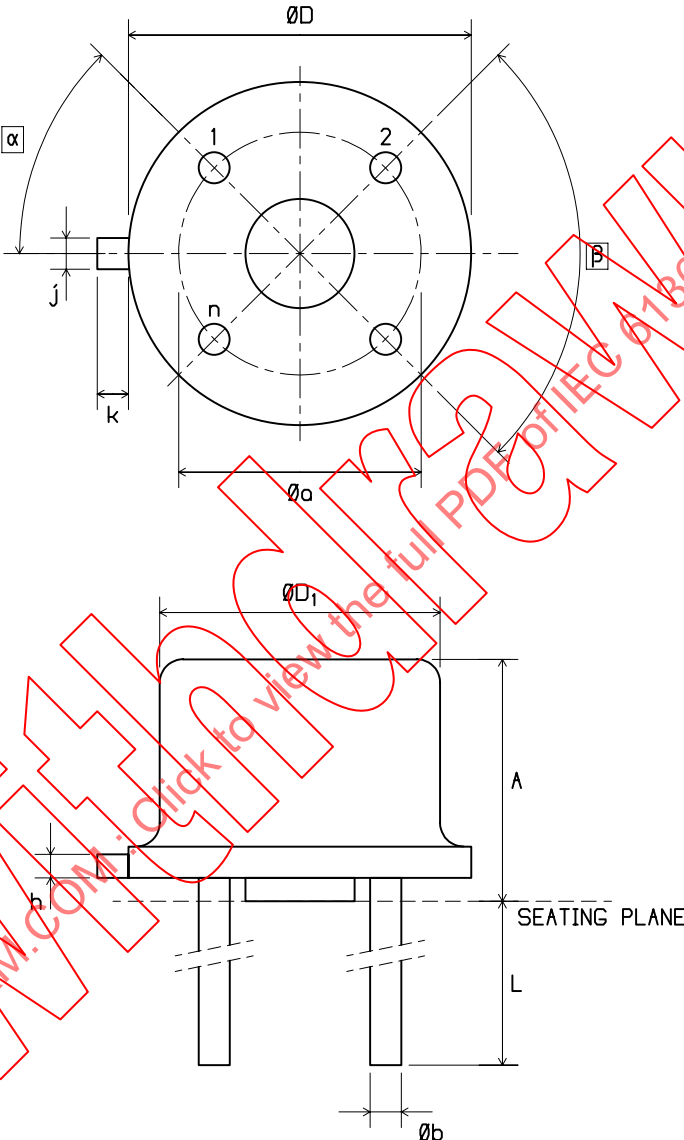
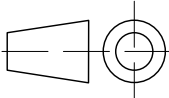
**Bead package, formed bottom wire leads**

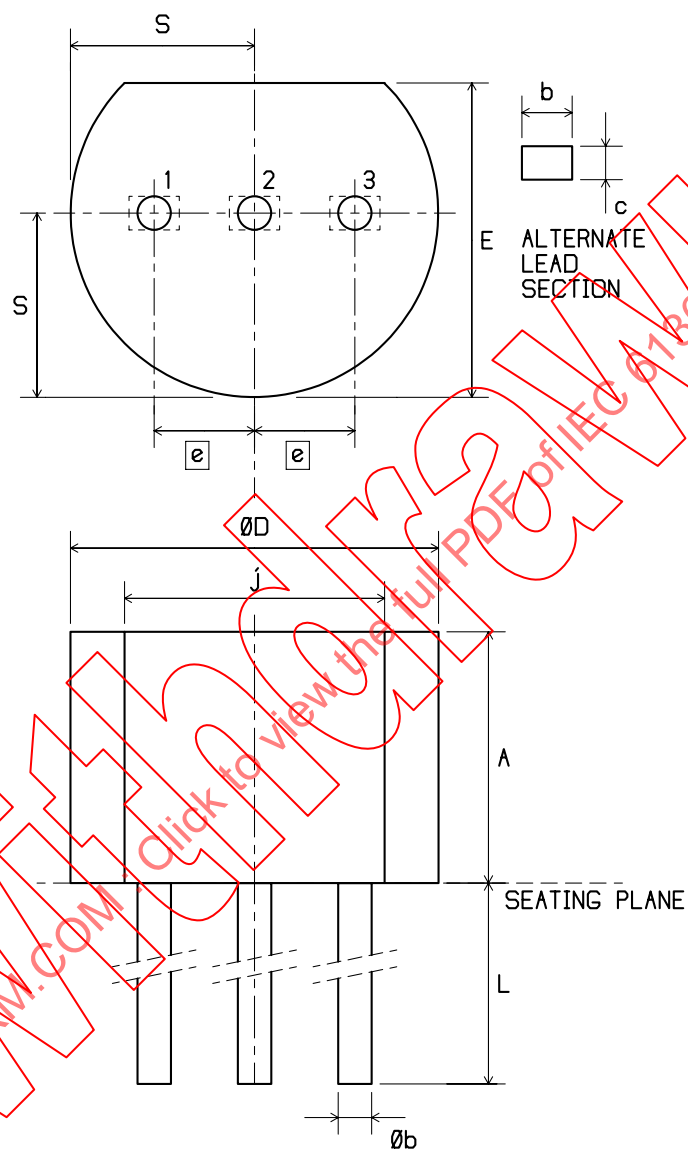
**DAA003**  
BBD-W-T002

**First-angle projection**



Version 001,  
revision 01

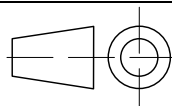
|                                                                                                            |                             |
|------------------------------------------------------------------------------------------------------------|-----------------------------|
|                         |                             |
| Cylindrical package, bottom leads on circle                                                                | <b>DAA004</b><br>BCY-W-T003 |
| First-angle projection  | Version 001,<br>revision 01 |



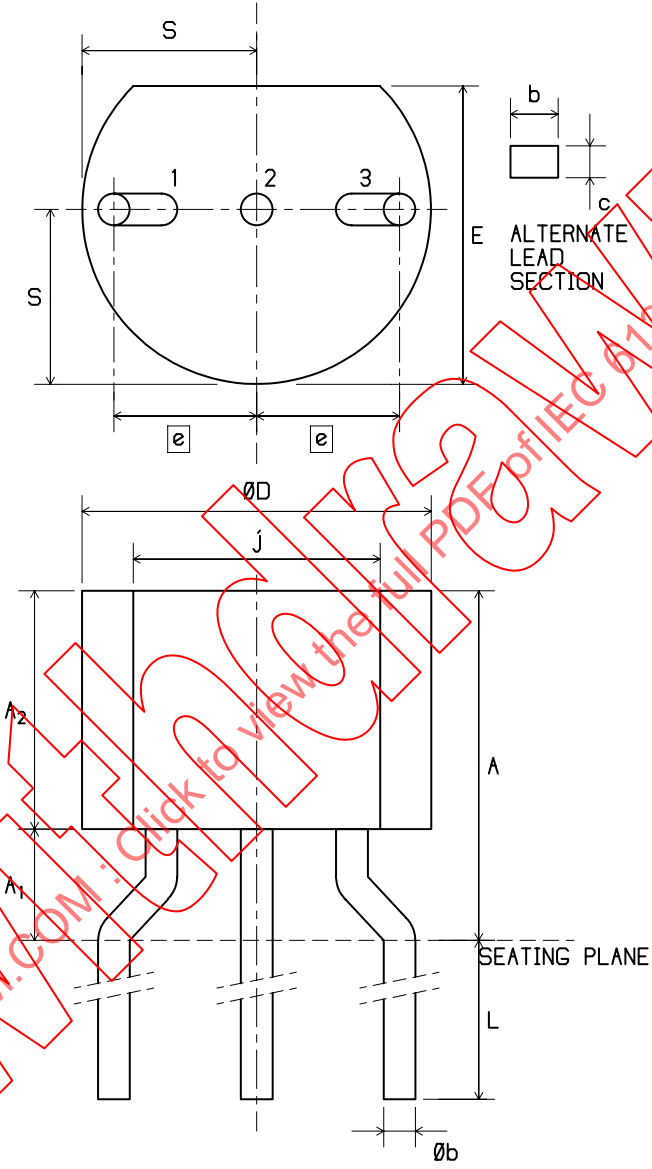
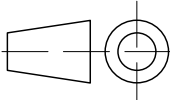
**Cylindrical package, straight in-line bottom leads**

**DAA005**  
BCY-W-T004

**First-angle projection**

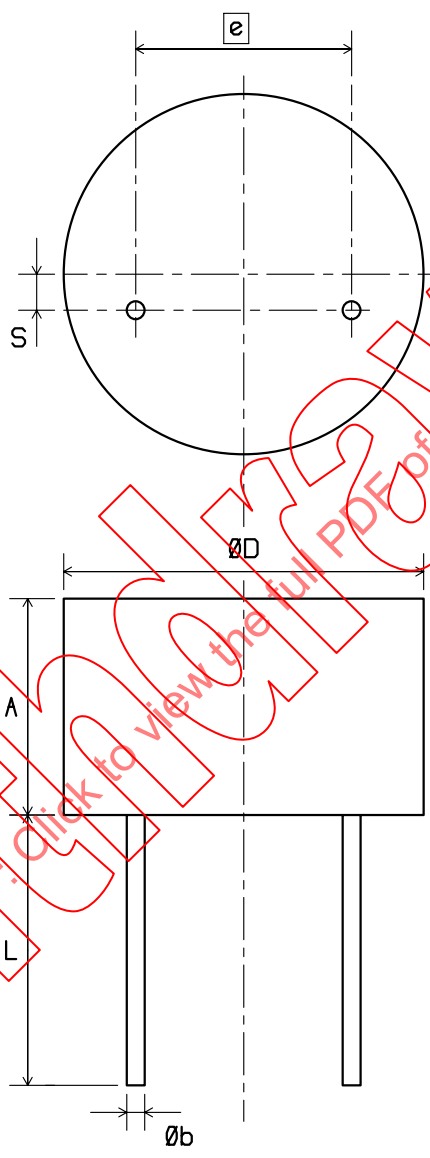
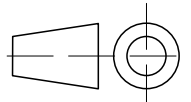


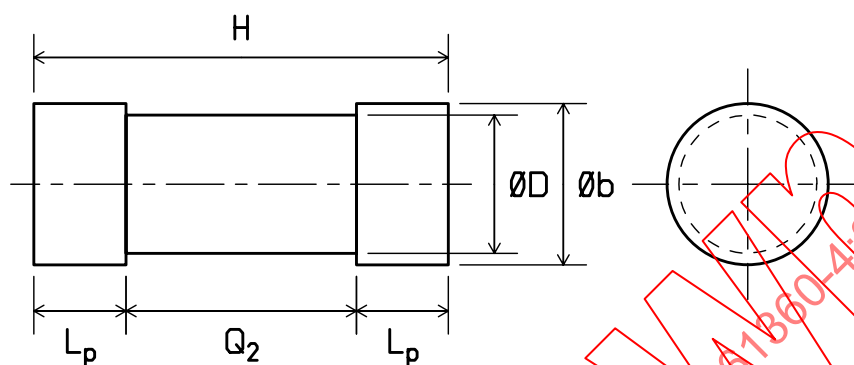
Version 001,  
revision 01

|                                                                                                            |                             |
|------------------------------------------------------------------------------------------------------------|-----------------------------|
|                         |                             |
| Cylindrical package, formed in-line bottom leads                                                           | DAA006<br>BCY-W-T005        |
| First-angle projection  | Version 001,<br>revision 01 |

|                                                         |                             |
|---------------------------------------------------------|-----------------------------|
|                                                         |                             |
| <b>Cylindrical package, bottom leads on square grid</b> | <b>DAA007</b><br>BCY-W-T006 |
| <b>First-angle projection</b>                           | Version 001,<br>revision 01 |



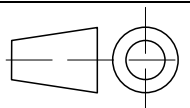
|                                                                                                                   |                             |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------|
|                                |                             |
| <b>Cylindrical package, offset in-line bottom leads</b>                                                           | <b>DAA008</b><br>BCY-W-T007 |
| <b>First-angle projection</b>  | Version 001,<br>revision 01 |



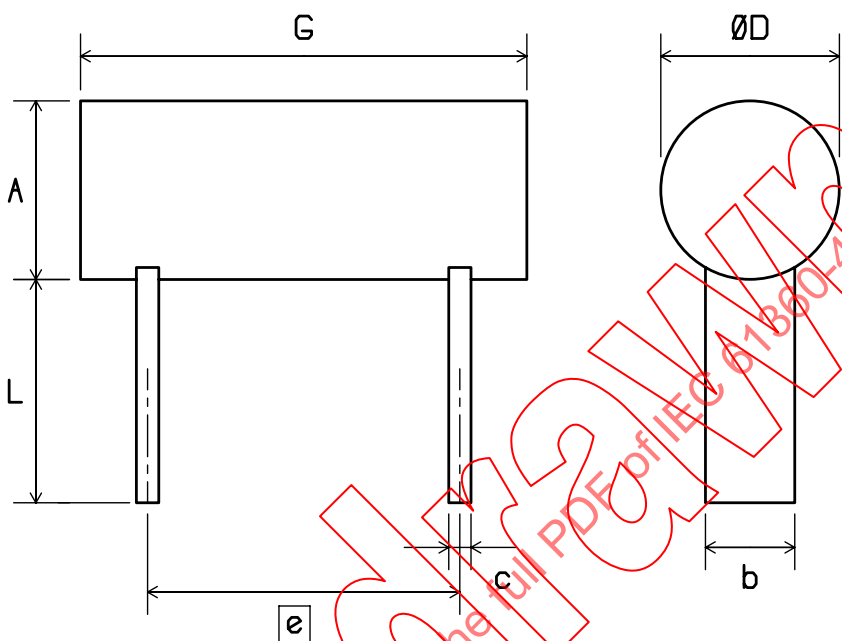
**Cylindrical package, wrap-around terminals**

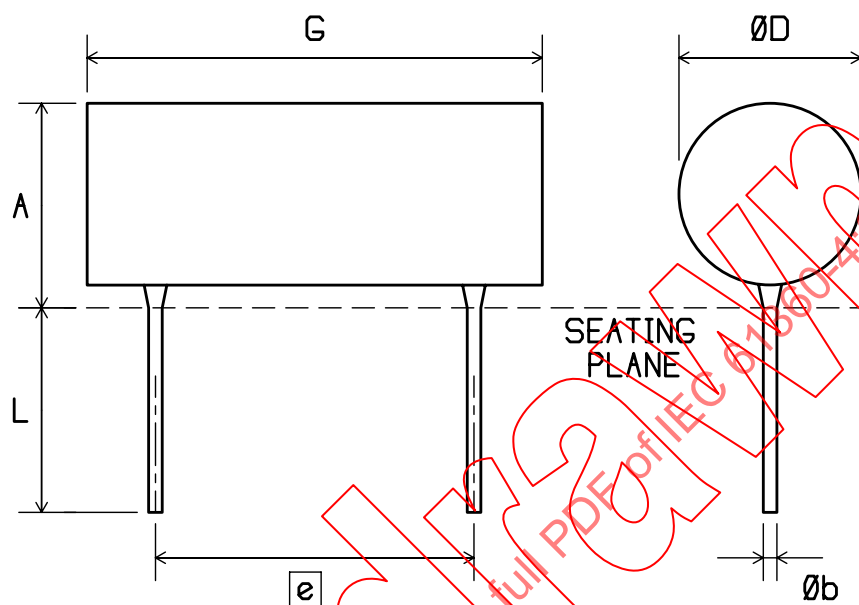
**DAA009**  
ECY-R-T000

**First-angle projection**



Version 001,  
revision 01

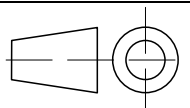
|                                                                                     |                             |
|-------------------------------------------------------------------------------------|-----------------------------|
|  |                             |
| Cylindrical package, radial tag leads                                               | DAA010<br>RCY-D-T001        |
| First-angle projection                                                              | Version 001,<br>revision 01 |



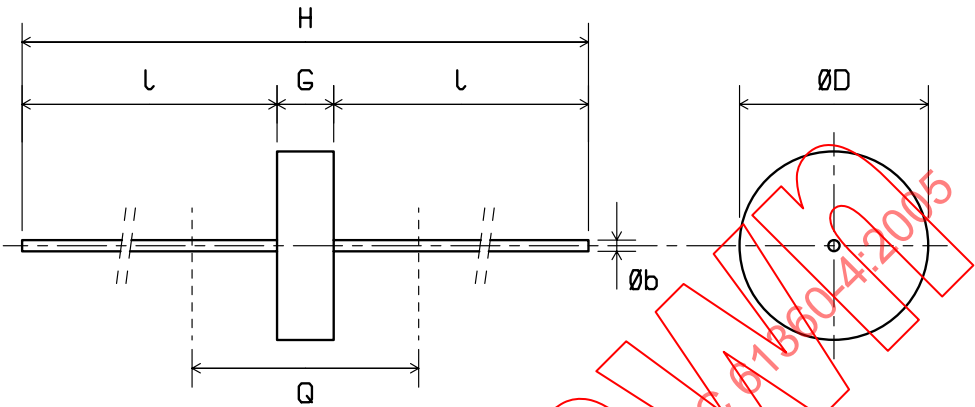
**Cylindrical package, straight radial wire leads**

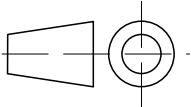
**DAA011**  
RCY-W-T001

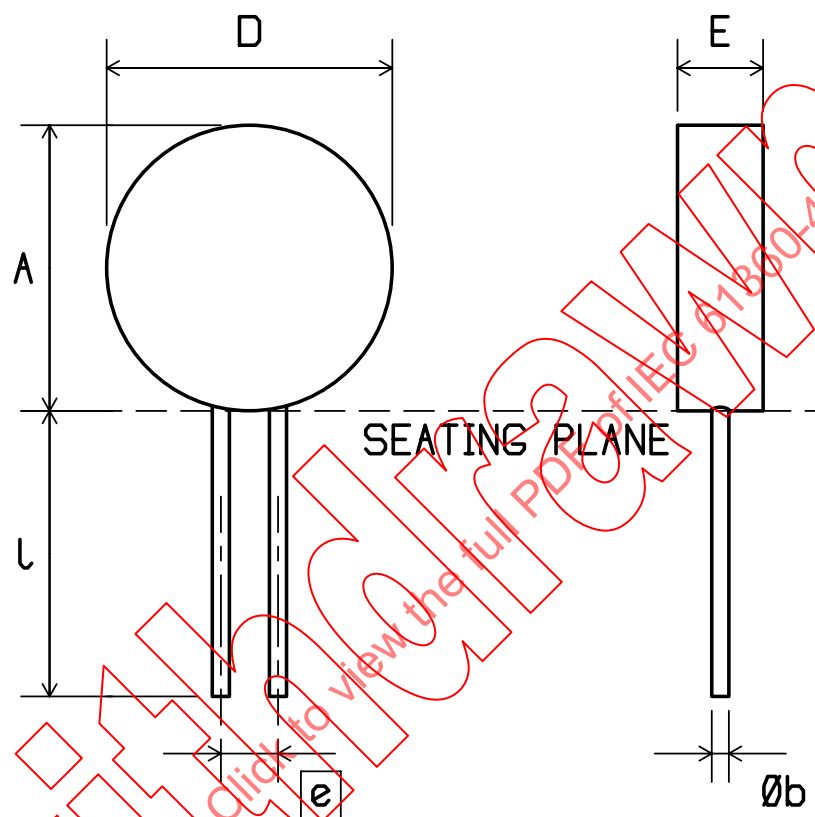
**First-angle projection**



Version 001,  
revision 01



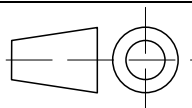
|                                                                                                                   |                             |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Disc package, straight axial wire leads</b>                                                                    | <b>DAA012</b><br>ADB-W-T001 |
| <b>First-angle projection</b>  | Version 001,<br>revision 01 |



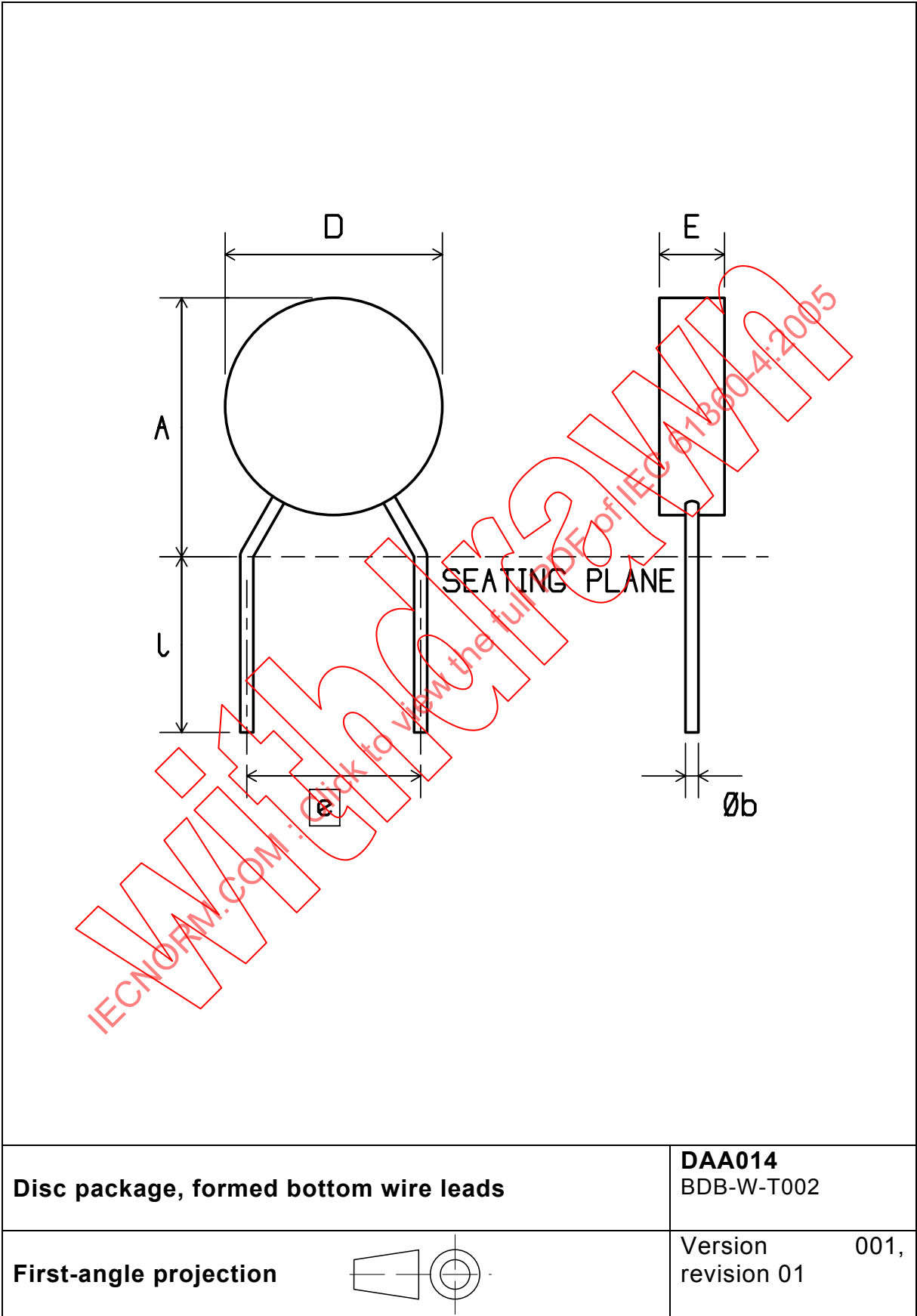
**Disc package, straight bottom wire leads**

**DAA013**  
BDB-W-T001

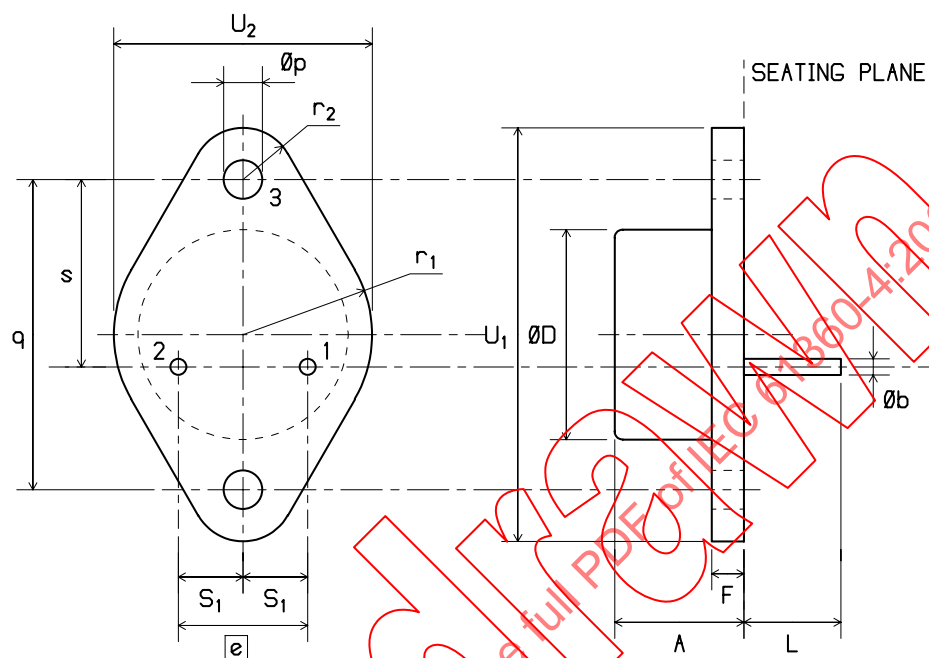
**First-angle projection**



Version 001,  
revision 01



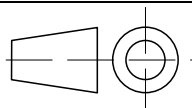




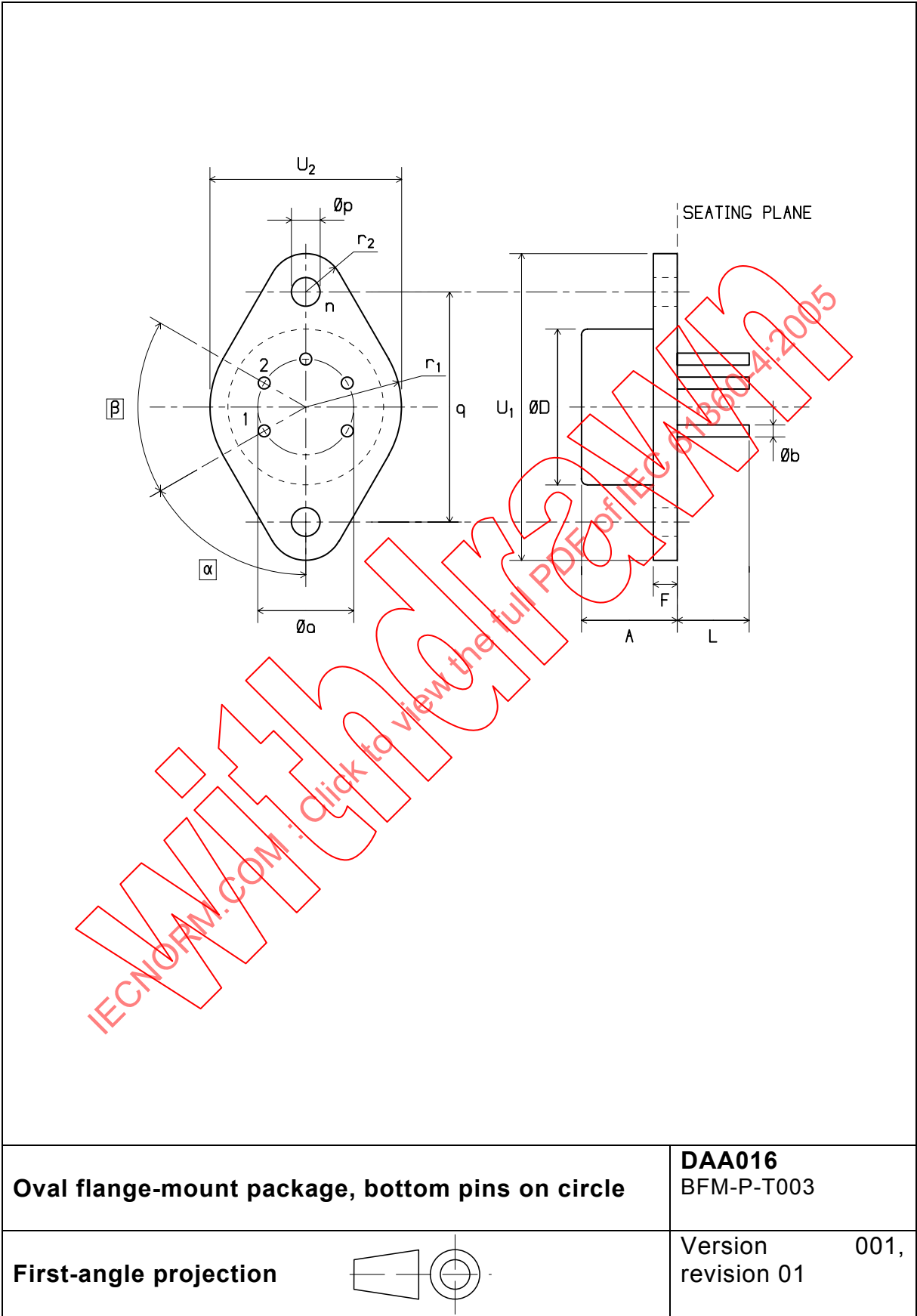
**Oval flange-mount package, offset bottom pins**

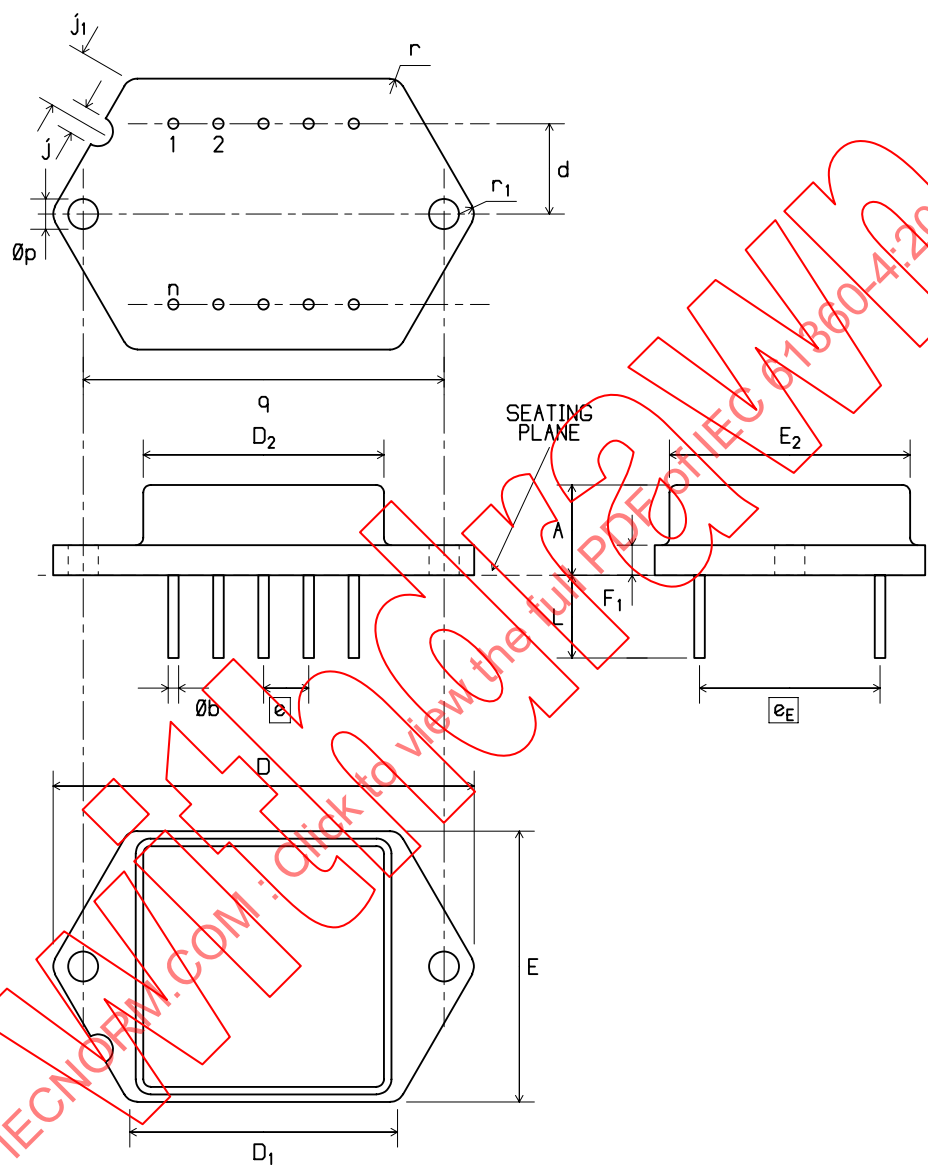
**DAA015**  
BFM-P-T007

**First-angle projection**



Version 001,  
revision 01

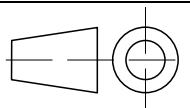




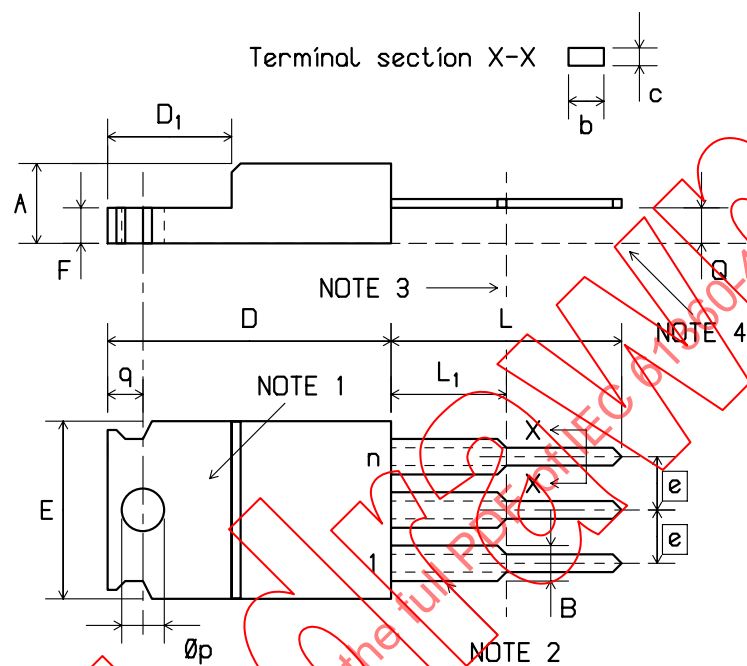
**Flange-mount package, dual-in-line pins**

**DAA017**  
DFM-P-T009

**First-angle projection**



Version 001,  
revision 01



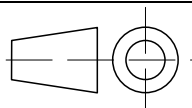
## NOTES

1. The tab shape may vary within the limits of E and D<sub>1</sub>
2. Within L<sub>1</sub>, the terminal shapes may follow the dotted lines
3. Seating plane of terminals
4. Seating plane of heat sink

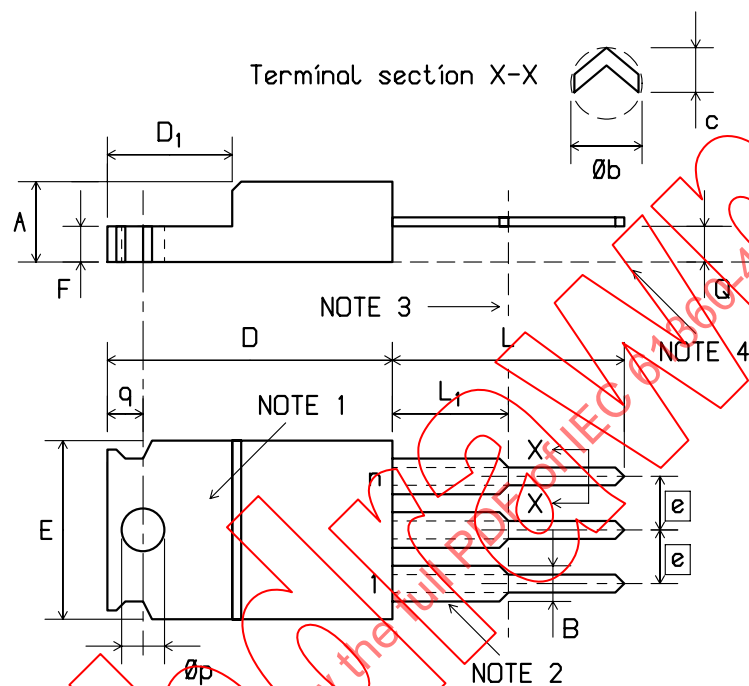
**Flange-mount package, single row, straight flat leads**

**DAA018**  
SFM-T-T011

**First-angle projection**



Version 001,  
revision 01



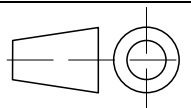
NOTES

1. The tab shape may vary within the limits of E and D<sub>1</sub>
2. Within L<sub>1</sub>, the terminal shapes may follow the dotted lines
3. Seating plane of terminals
4. Seating plane of heat sink

**Flange-mount package, single row, straight V-section leads**

**DAA019**  
SFM-T-T023

**First-angle projection**



Version 001,  
revision 01