

INTERNATIONAL STANDARD

AMENDMENT 20

The sheets contained in this amendment are to be inserted in IEC 60191-2

**Mechanical standardization of semiconductor devices –
Part 2: Dimensions**

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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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Mechanical standardization of semiconductor devices – Part 2: Dimensions

INTERNATIONAL
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INSTRUCTIONS FOR THE INSERTION
OF NEW PAGES IN IEC 60191-2

Replace the existing title page with the new title page.

Remove the existing page 60191 IEC I containing the preface and insert in its place the new page 60191 IEC I containing the preface to Amendment 20 (2018).

Chapter I:

Add the following new sheets:

60191 IEC I-188F-a/b

60191 IEC I-189F-a/b

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INTERNATIONAL STANDARD

Mechanical standardization of semiconductor devices – Part 2: Dimensions

Includes Supplements and Amendments / Inclut les Compléments et Amendements:
A (1967), B (1969), C (1970), D (1971), E (1974), F (1976), G (1978), H (1978),
J (1980), K (1981), L (1982), M (1983), N (1987), P (1988), Q (1990), R (1995),
S (1995), T(1995), U(1997), V(1998), W(1999), X(1999), Y(2000), Z(2000), 1 (2001),
2(2001), 3(2001), 4(2001), 5(2002), 6(2002), 7(2002), 8(2003), 9(2003), 10(2004),
11(2004), 12(2006), 13(2006), 14(2006), 15(2006), 16(2007), 17(2008), 18(2011),
19(2012), 20(2018)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PUBLICATION 191-2

MECHANICAL STANDARDIZATION OF SEMICONDUCTOR DEVICES –

Part 2: Dimensions

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IEC PUBLICATION 191-2

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THE STANDARD SHEETS OF
IEC PUBLICATION 191-2

IEC Publication 191-2
Date: 1987

INTERNATIONAL ELECTROTECHNICAL COMMISSION

Amendment 20 (2018) to IEC 60191-2 (1966)

MECHANICAL STANDARDIZATION OF SEMICONDUCTOR DEVICES –

Part 2: Dimensions

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PREFACE TO AMENDMENT 20 (2018)

This amendment has been prepared by subcommittee 47D: Semiconductor Packaging, of IEC technical committee 47: Semiconductor devices.

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

FDIS	Report on voting
47D/900/FDIS	47D/906/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.

CHAPTER I – DEVICE OUTLINE DRAWINGS

List of drawings (continued)

IEC code number	Code of country of origin	Page number and date	
116E01	SC-529-14BA	I-116E	1988
116E02	SC-530-16CA		
116E03	SC-531-20AA		
117E01	SC-530-16BA	I-117E	1988
117E02	SC-531-20BA		
117E03	SC-532-24AA		
117E04	SC-533-28AA		
117E05	SC-533-28BA		
118E01	SC-532-24BA	I-118E	1988
118E02	SC-533-28CA		
119E02	(USA)	I-119E	1990
119E03			
120E	NT194	I-120E	1990
121E	NT213	I-121E	1994
122E	NT221	I-122E	1994
123E		I-123E	1997
129E	NT223	I-129E	1994
133E		I-133E	2000
134E		I-134E	2000
135E		I-135E	2000
136E		I-136E	2000
137E		I-137E	2000
138E		I-138E	
139E		I-139E	
140E		I-140E	1999
141E		I-141E	1999
142E		I-142E	1998
143E		I-143E	1998
144E		I-144E	1999
147E		I-147E	1999
148E		I-148E	1999
149E		I-149E	2002
150E		I-150E	2002
151E		I-151E	2002
152E		I-152E	2002
153E		I-153E	2002
154E		I-154E	2001
155E		I-155E	2001
156E		I-156E	2004
157E		I-157E	2001
158E		I-158E	2002
159E		I-159E	2002
160E		I-160E	2001
161E		I-161E	2001
162E		I-162E	2001
163E		I-163E	2002
164E		I-164E	2001
165E		I-165E	2002
166		I-166E	2003
167E		I-167E	2003
168E		I-168E	2004
171E		I-171E	2006
175E		I-175E	2005
176E		I-176E	2004
177E		I-177E	2007
178E		I-178E	2006
179E		I-179E	2006
180E		I-180E	2008
181E		I-181E	2008
183E		I-183E	2011
187E		I-187E	2012

CHAPTER I – DEVICE OUTLINE DRAWINGS

List of drawings (continued)

IEC code number	Code of country of origin	Page number and date	
Form F			
084F		I-084F	1996
100F		I-100F	1990
101F01	101F01	I-101F	1998
101F01	101F01		
102F			
102F0	102F01	I-102F	1998
102F02	102F02		
102F033	102F03		
186F		I-186F	2012
188F		I-188F	2018
189F		I-189F	2018
Form G			
050G01	SO5-87D	I-50a/b/c/d	1985
050G02	SO-188D		
050G03	SO-87A		
050G04	SO-87B		
050G05	SO-188A		
050G06	SO-188B		
050G07	SO-188F		
050G08	SO-87C		
050G10	SO-188C		
050G11	SO505-18A		
050G12	SO-87G		
050G13	SO-188E		
050G14	(Sweden)		
050G16	A1AA	I-50e	1990
050G17	A1AB		
050G18	A1BA		
050G19	A1BB		
050G20	A1CB		
Form B			
184B		I-184B	2012
185B		I-185B	2012

Types of semiconductor devices generally mounted in the packages
of chapter I of IEC 60191-2

Type of device	IEC code number of package drawing
Signal diodes and small-power Zener diodes	A1, A20, A24, A32, A54, A55, A58, A67, A69, A70, A71, 098H, 100H
Microwave diodes	A18
Rectifier diodes, small and medium power	A2, A3, A4, A6, A7, A19, A37, A44, A74, 077B, 100B
High-power rectifier diodes	A8, A9, A10, A15, A16, A17, A21, A22, A35, 083B, 103B
Thyristors, small and medium power	A11, A13, A14, A38, A43
High-power thyristors	A12, A27, A28, A29, A34, A39, A47, 104B, 105B
Signal transistors	A36, A40, A41, 068A, 046E, 114E, 183E
Power transistors	A23, A30, A31, A43, A48, A56, A57, A45, A73, 080B, 081B, 082B, 101B, 102B, 102F, 120E, 084F, P100F, 184B, 185B, 186F, 187E, 188F, 189F
Microwave transistors	A26, A42, A43, A59, A66, A72, 100C
Optoelectronic devices	A62, A64, A65, A63A, 100A, 101A, 106B, 107B
Integrated circuits	A52, A53, A61, 075E, 076E, 099E, 100E, 102E, 112E, 115E, 116E, 117E, 118E, 119E, 121E, 122E, 123E, 129E, 133E, 134E, 135E, 136E, 137E, 138E, 139E, 140E, 141E, 144E, 147E, 148E, 149E, 150E, 151E, 152E, 153E, 154E, 155E, 156E, 157E, 158E, 159E, 160E, 161E, 162E, 163E, 164E, 165E, 166E, 167E, 168E, 171E, 175E, 176E, 177E, 178E, 179E, 180E, 181E, 050G, 051G, 060G, 100G, 101G

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FOREWORD

This amendment has been prepared by subcommittee 47D: Semiconductor devices packaging, of IEC technical committee 47: Semiconductor devices.

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

FDIS	Report on voting
47D/900/FDIS	47D/906/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability 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

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

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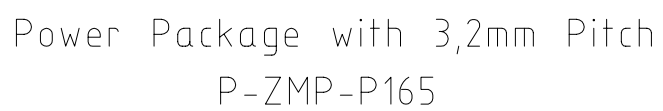
Insert the new drawing "60191 IEC I-188F", with the following associated information:

IEC code:	188F
Package name:	Power package with 3,2 mm pitch
Common name:	(Power package with 3,2 mm pitch)
Device type:	Power transistors
Material:	P
Features:	(Blank)
Position:	Z
Package:	MP
Form:	P
Count:	165

Insert the new drawing "60191 IEC I-189F", with the following associated information:

IEC code:	189F
Package name:	Power package with 3,2 mm pitch
Common name:	(Power package with 3,2 mm pitch)
Device type:	Power transistors
Material:	P
Features:	(Blank)
Position:	Z
Package:	MP
Form:	P
Count:	89

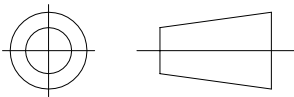
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Ref.	Millimetre			Notes
	min.	nom.	max.	
e	-	3,2 (*)	-	4.
F 1	11,65	-	12,35	
F 2	1,1	-	1,9	
J	15	-	16,9	
k	-	0,6	-	
L	0,61	-	0,67	
p 1	4,4	-	4,6	
p 2	2,2	-	2,5	
Q 1	62,3	-	63,3	
Q 2	47,7	-	48,3	
Q 3	36,8	-	37,2	
Q 4	22,4	-	23	
Q 5	16,2	-	16,6	
q 1	42,3	-	42,7	
q 2	52,9	-	53,1	
q 3	50,8	-	51,2	
U 1	40	-	40,4	
U 2	56,4	-	57	
v	-	0,6	-	
w	-	0,15	-	

(*) means true geometrical position

- 1. Pins are not numbered.
Function according to individual data sheet.
- 2. Depopulation of pins varies according to function.
- 3. pin finish: 2-20 μm
- 4. The millimeter dimensions are derived from the original inch dimensions.
- 5. Datum A is established by the common axis of the upper left and the upper right terminal.
- 6. Datum B is established by the common axis of the upper left and the lower left terminal.



Power Package with 3,2mm Pitch
P-ZMP-P165