

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

REV.
A

AS39029™/124

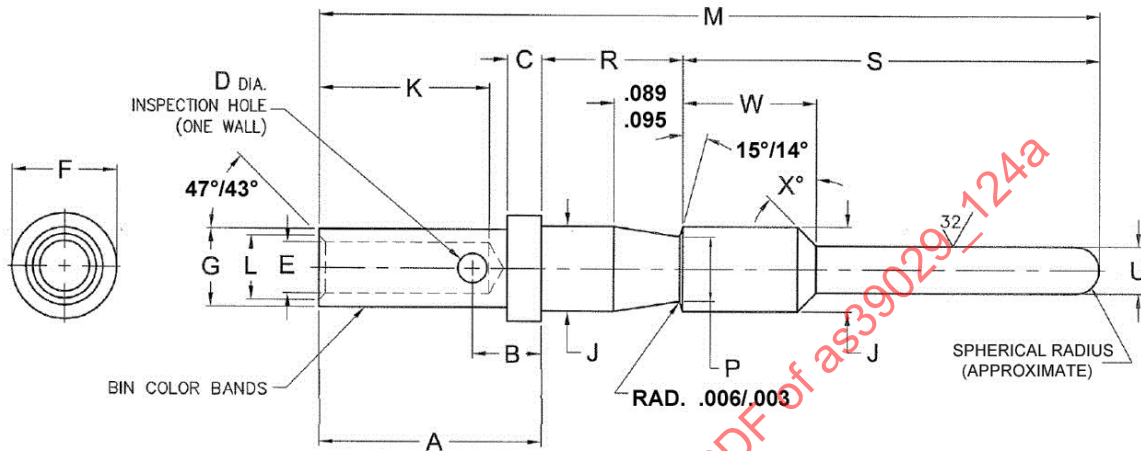
FEDERAL SUPPLY CLASS
5999

RATIONALE

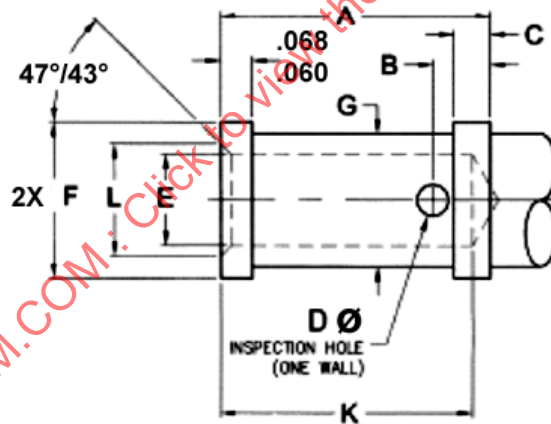
LIMITED SCOPE REVISION IS REQUIRED TO CORRECT THE REQUIREMENT PARAGRAPH 6 CURRENT RATING TEST PROCEDURE FROM EIA-364-75 TO EIA-364-70 AND THE CONTACT RESISTANCE TEST PROCEDURE FROM EIA-364-75 TO EIA-364-06.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS39029.



PIN INTERFACE DESIGN FOR ALL BIN CODES
WIRE BARREL DESIGN FOR BIN CODES 681 AND 682 (SIZE 16 AND 12)

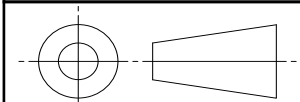


WIRE BARREL DESIGN
(BIN CODES 683, 684 AND 685 (SIZES 8, 4 AND 0))

FIGURE 1 - PIN CONTACT

For more information on this standard, visit
<https://www.sae.org/standards/content/AS39029/124A/>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8/AE-8C1

PROCUREMENT SPECIFICATION: AS39029



AEROSPACE STANDARD

CONTACTS, ELECTRICAL CONNECTOR, PIN,
CRIMP REMOVABLE (FOR AS50151 SERIES AS340X1
CONNECTORS AND AS95234 CONNECTORS)

AS39029™/124
SHEET 1 OF 4

REV.
A

Copyright © 2021 SAE International
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Fax: 724-776-0790

Tel: +1 724-776-4970 (outside USA)
Email: CustomerService@sae.org

SAE WEB ADDRESS: <http://www.sae.org>

ISSUED 2015-12 REAFFIRMED 2020-10 REVISED 2021-10

TABLE 1 - FIGURE 1 DIMENSIONS

BIN CODE	A	B	C	D DIA	E DIA	F DIA	G DIA	J DIA
681	.298 (7.57)	.079 (2.01)	.048 (1.22) .044 (1.12)	.042 (1.07) .036 (0.91)	.068 (1.73) .066 (1.68)	.148 (3.76) .133 (3.38)	.105 (2.67) .101 (2.57)	.113 (2.87) .110 (2.79)
682	.294 (7.47)	.073 (1.85)			.102 (2.59) .098 (2.49)	.202 (5.13) .189 (4.80)	.153 (3.89) .147 (3.73)	.161 (4.09) .158 (4.01)
683	.520 (13.21)	.094 (2.39) .084 (2.13)		.066 (1.68) .060 (1.52)	.184 (4.67) .179 (4.55)	.313 (7.95) .309 (7.85)	.269 (6.83) .263 (6.68)	.252 (6.40) .249 (6.32)
684	.510 (12.95)				.286 (7.26) .279 (7.09)	.419 (10.64) .409 (10.39)	.380 (9.65) .370 (9.40)	.336 (8.53) .333 (8.46)
685	.675 (17.15)				.458 (11.63) .451 (11.46)	.611 (15.52) .601 (15.27)	.568 (14.43) .558 (14.17)	.518 (13.16) .515 (13.08)
	.665 (16.89)							

TABLE 1 - FIGURE 1 DIMENSIONS (CONTINUED)

BIN CODE	K	L	M REF	P DIA	R	S	U DIA	W	X
681	.281 (7.14)	.090 (2.29) .080 (2.03)	1.172 (29.77)	.087 (2.21) .083 (2.11)	.189 (4.80) .185 (4.70)	.694 (17.63) .684 (17.37)	.0635 (1.61) .0615 (1.56)	.183 (4.65) .173 (4.39)	50° 40°
682	.250 (6.35)	.125 (3.18) .115 (2.92)	1.360 (34.54)	.135 (3.43) .131 (3.33)		.882 (22.40) .872 (22.15)	.095 (2.41) .093 (2.36)		
683	.534 (13.56)	.230 (5.84) .220 (5.59)	1.579 (40.11)	.225 (5.72) .221 (5.61)			.143 (3.63) .141 (3.58)		
684	.480 (12.19)	.364 (9.25) .354 (8.99)		.310 (7.87) .307 (7.80)	.253 (6.43) .249 (6.32)	.817 (20.75) .807 (20.50)	.226 (5.74) .224 (5.69)	.118 (3.00) .108 (2.74)	32° 28°
685	.690 (17.53) .636 (16.15)	.542 (13.77) .532 (13.51)	1.733 (44.02)	.492 (12.50) .489 (12.42)			.358 (9.09) .356 (9.04)		

TABLE 2 - MARKING AND DESIGN CHARACTERISTICS

BIN CODE	COLOR BANDS			MATING END SIZE	WIRE BARREL SIZE	TYPE	CLASS
	1ST	2ND	3RD				
681	BLUE	GRAY	BROWN	16	16	A	B
682	BLUE	GRAY	RED	12	12		
683	BLUE	GRAY	ORANGE	8	8		
684	BLUE	GRAY	YELLOW	4	4		
685	BLUE	GRAY	GREEN	0	0		



AEROSPACE STANDARD

CONTACTS, ELECTRICAL CONNECTOR, PIN,
CRIMP REMOVABLE (FOR AS50151 SERIES AS340X1
CONNECTORS AND AS95234 CONNECTORS)

AS39029™/124
SHEET 2 OF 4

REV.
A

TABLE 3 - TOOL REQUIREMENTS

BIN CODE	BASIC CRIMPING TOOL	DIE SET	LOCATOR	POSITIONER	INSTALLING TOOL	REMOVAL TOOL
681	M22520/1-01 M22520/7-01	---	---	M22520/1-02 BLUE M22520/7-03	M81969/17-04	M81969/19-01
682	M22520/1-01	---	---	M22520/1-02 YELLOW	M81969/17-05	M81969/19-02
683	M22520/23-01	M22520/23-02	M22520/23-09	---	M81969/17-06	M81969/19-03
684	M22520/23-01	M22520/23-04	M22520/23-11	---	M81969/17-07	M81969/19-04
685	M22520/23-01	M22520/23-05	M22520/23-13	---	M81969/17-08	M81969/19-05

DETAIL SPECIFICATION REQUIREMENTS:

1. DESIGN: CONTACT SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE 1 AND TABLES 1 AND 2. DIMENSIONS ARE IN INCHES AND SHOWN AFTER PLATING. UNLESS OTHERWISE SPECIFIED, SPHERICAL END DIMENSIONS SHALL CONFORM TO AS39029. ALL DIMENSIONS IN PARENTHESES ARE METRIC EQUIVALENTS, PROVIDED FOR GENERAL INFORMATION ONLY AND BASED ON 1 INCH = 25.4 MILLIMETERS.
2. TOOLS: TOOLS REQUIRED FOR CRIMPING CONTACTS TO WIRE/CABLE AND THE INSTALLING/REMOVAL FROM THE CONNECTOR SHALL BE IN ACCORDANCE WITH TABLE 3.
3. PART NUMBERS: CONTACT PART NUMBERS SHALL BE IN ACCORDANCE WITH TABLE 6.
4. MATERIALS: MATERIALS SHALL BE IN ACCORDANCE WITH AS39029. EXCEPT CONTACT MATERIALS SHALL BE OF A HIGH CONDUCTIVITY COPPER ALLOY SUCH AS TELLURIUM COPPER IN ACCORDANCE WITH ASTM B301, CDA 145, OR OTHER COPPER ALLOY WITH AN IACS (INTERNATIONAL ANNEALED COPPER STANDARD) CONDUCTIVITY OF NO LESS THAN 80%. ALLOYS CONTAINING CADMIUM SHALL NOT BE PERMITTED. CONTACTS IN SIZES 0, 4, 8 SHALL BE SILVER PLATED IN ACCORDANCE WITH AS39029. CONTACTS IN SIZES 12 AND 16 SHALL BE GOLD PLATED IN ACCORDANCE WITH AS39029.
5. MECHANICAL: MECHANICAL PROPERTIES SHALL BE IN ACCORDANCE WITH AS39029.
6. ELECTRICAL: ELECTRICAL PROPERTIES SHALL BE IN ACCORDANCE WITH AS39029, EXCEPT CURRENT RATING AND CONTACT RESISTANCE SHALL BE AS FOLLOWS WHEN MATED TO AN AS39029/123 HIGH CURRENT CARRYING CONTACT.

CURRENT RATING: SHALL BE IN ACCORDANCE WITH TABLE 4. TEST IN ACCORDANCE WITH EIA-364-1004 AND EIA-364-70, TEST CONDITIONS 3 AND 4, USING A 30 °C TEMPERATURE RISE AS SPECIFIED IN TABLE 5. TEST THE CURRENT RATING OF CONTACTS IN FREE AIR AND ALSO WHEN INSTALLED IN AN APPLICABLE CONNECTOR WITH ALL CONTACTS ENERGIZED AT AMBIENT TEMPERATURE. CURRENT RATING SHALL BE AVERAGED ON A SAMPLE SIZE OF FOUR MATED CONTACT PAIRS. TEST USING AS95234 OR AS340X1 SERIES CONNECTORS WITH ENOUGH SAMPLES TO INCLUDE FOUR MATED PAIRS OF EACH SIZE CONTACT.

TABLE 4 - CURRENT RATINGS

CONTACT SIZE	CURRENT RATING AT AMBIENT TEMPERATURE (AMPS)	CURRENT RATING IN CONNECTOR AT AMBIENT TEMPERATURE (AMPS)
16	20	15
12	41	36
8	80	70
4	130	120
0	280	265

CONTACT RESISTANCE: SHALL BE IN ACCORDANCE WITH TABLE 5 WHEN TESTED IN ACCORDANCE WITH EIA 364-06 IN FREE AIR AT AMBIENT TEMPERATURE AND WHEN INSTALLED IN A CONNECTOR WITH ALL CONTACTS ENERGIZED AT AMBIENT TEMPERATURE.

TABLE 5 - MILLIVOLT DROP AT TEMPERATURE RISE REQUIREMENTS

CONTACT SIZE	MILLIVOLT DROP AT 30 °C TEMPERATURE RISE (MILLIVOLTS-MAX)
16	10
12	9
8	7
4	5
0	5

	AEROSPACE STANDARD	AS39029™/124 SHEET 3 OF 4	REV. A
	CONTACTS, ELECTRICAL CONNECTOR, PIN, CRIMP REMOVABLE (FOR AS50151 SERIES AS340X1 CONNECTORS AND AS95234 CONNECTORS)		