

INCH-POUND

MIL-DTL-12883/3E
18 February 2003
SUPERSEDING
MIL-PRF-12883/3D
28 June 1996

DETAIL SPECIFICATION SHEET

SOCKETS AND ACCESSORIES FOR PLUG-IN ELECTRONIC COMPONENTS
(ELECTRON TUBE, TOP MOUNTING, SADDLE TYPE WITH SHIELD BASE, 9 CONTACT, RADIAL)

Inactive for new design after 11 July 1968. For new design use MIL-DTL-12883/11

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification and MIL-DTL-12883.

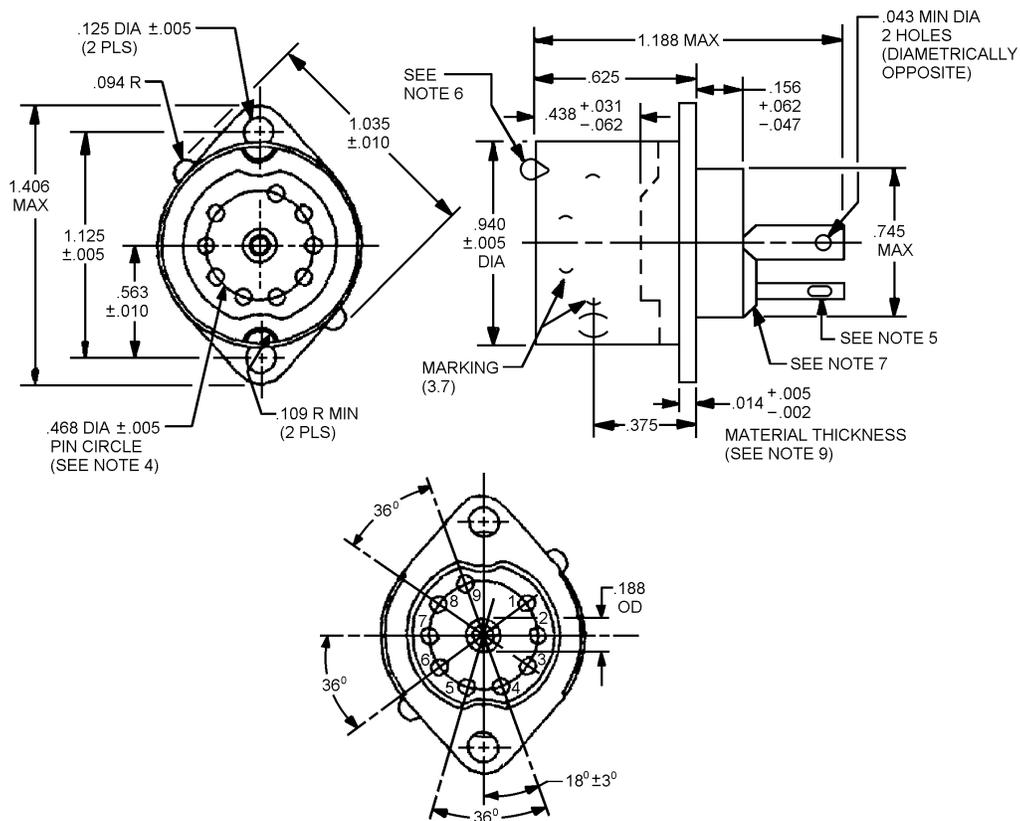


FIGURE 1. Socket configuration.

MIL-DTL-12883/3E

Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.002	0.05	.043	1.09	.125	3.18	.468	11.89	1.035	26.29
.005	0.13	.047	1.19	.156	3.96	.563	14.30	1.125	28.53
.010	0.25	.062	1.57	.188	4.78	.625	15.88	1.188	30.18
.014	0.36	.094	2.39	.375	9.53	.745	18.92	1.406	35.71
.031	0.79	.109	2.77	.438	11.13	.940	23.88		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is $\pm .016$ inch (0.41 mm) and $\pm \frac{1}{2}^\circ$ on angles.
4. Nine contact cavities equally spaced throughout 288° of arc, and each cavity located within $\frac{1}{2}^\circ$ of true position, shall be established along the pin circle.
5. Each contact tab shall have either:
 - a. 2 wire holes of .040 inch (1.02 mm) minimum width and .075 inch (1.91 mm) minimum length.
 - b. 1 hole of .040 inch (1.02 mm) minimum width and .125 inch (3.18 mm) minimum length.
 The hole, or holes shall lie on the longitudinal centerline of the contact tab within $\pm .008$ inch (0.20 mm).
6. An orientation slot or tongue, or other suitable means to serve as a guide for proper positioning of an applicable electron tube in the socket contacts, shall be placed on the shield mounting between contacts 1 and 9.
7. The design of bosses and the shape of barrier, when used, are optional. When present, barriers shall have a maximum height of .062 inch (1.57 mm).
8. Clearance between the cavity wall and the contact, with the contact in any position, shall be no greater than .018 inch (0.46 mm).
9. Material thickness of mounting flange shall be measured in an area where burring or dishing of the mounting hole is not present.

FIGURE 1. Socket configuration – Continued.

REQUIREMENTS:

Dimensions and configurations: See figure 1 and table I.

Insulating material: Ceramic, Diallyl Ortho-Phthalate in accordance with ASTM PS 15 type, SDG-F, GDI-30F, or mineral-filled Phenolic resin in accordance with ASTM D5948 type MFE, see table I.

Contact cavities: One shape only, either D-shaped or circular, at option of the manufacturer.

Float: With a pin of .041 inch (1.04 mm) diameter and .271 inch (6.88 mm) minimum length fully inserted in a socket contact, the contact shall be capable of free movement (float) within the contact cavity.

Saddle (with shield base): The saddle shall be integral with the shield base. The method of attaching the saddle (with shield base) to the insulator body, and the shape of the saddle (with shield base) where attachment is effected, are optional.

MIL-DTL-12883/3E

Electrical:

Insulation resistance: 1,000 megohms minimum. Test pin diameter: .040 ± .001 inch (1.02 ± .03 mm).

Dielectric withstanding voltage:

Sea level: Test voltage: 2,000 volts root mean square (ms). Test pin diameter .040 ± .001 inch (1.02 ± .03 mm).

High altitude: Test voltage: 660 volts ms. Test pin diameter: .040 ± .001 inch (1.02 ± .03 mm).

Contact resistance:

Average for all contacts: 0.015 ohm maximum.

Individual contacts: 0.03 ohm maximum.

Continuity test circuit: With the header test-gage(s) inserted in the socket(s) under test, the pins of the test-gage(s) and the contacts of the socket(s) under test shall result in a series circuit. The header shall be the one used for electron tube 12AT7WA.

Mechanical:

Insertion and withdrawal force:

Initial insertion force: 20 pounds (89 newton) maximum.

Average withdrawal force: 15 pounds (67 newton) maximum.

Initial withdrawal force: 4 pounds (18 newton) minimum; 15 pounds (67 newton) maximum.

Vibration: The test gage shall be in an approved electron-tube type 12AT7WC, in accordance with MIL-E-1/1097.

Durability: After the durability test, the withdrawal force shall be 2 pounds (9 newton) minimum.

Static load: 52 pounds (231 newton).

The part shall be designed to operate at the following conditions:

Environmental:

Operating temperature: See table I.

TABLE I. Dash number and characteristics.

Dash number	Operating temperature °C	Insulating material	Mounting style	Old type designator
-01	200	Ceramic	Clearance hole	TS103C01
-02	100	SDG-F, GDI-30, or MFE	Clearance hole	TS103P01

MIL-DTL-12883/3E

Ratings (absolute maximum):

Voltage:

Sea level: 500 volts rms.

50,000 feet (15240 meters): 225 volts rms.

Current: 1 ampere.

Operating temperature: See table I.

Test gage details: See table II and MIL-DTL-12883 (See appendix).

TABLE II. Test gage details. 1/ 2/

Inspection	A Pin length (mm)	B Pin dia (mm)	M Test-end dia (mm)	C Pin-circle dia (mm)	N Probe-end dia (mm)
Insertion and withdrawal force	.276 ±.005 (7.01 ±0.13)	.0390 ±.0001 (0.991 ±0.003)	---	.4680 (11.887) basic	---
Contact resistance	.276 ±.005 (7.01 ±0.13)	.0390 ±.0001 (0.991 ±0.003)	---	.4680 (11.887) basic	---
Contact retention	.276 ±.005 (7.01 ±0.13)	---	.0390 ±.0001 (0.991 ±0.003)	---	.0410 ±.0001 (1.041 ±0.003)
Durability	.276 ±.005 (7.01 ±0.13)	.0410 ±.0001 (1.041 ±0.003)	---	.4680 (11.887) basic	---

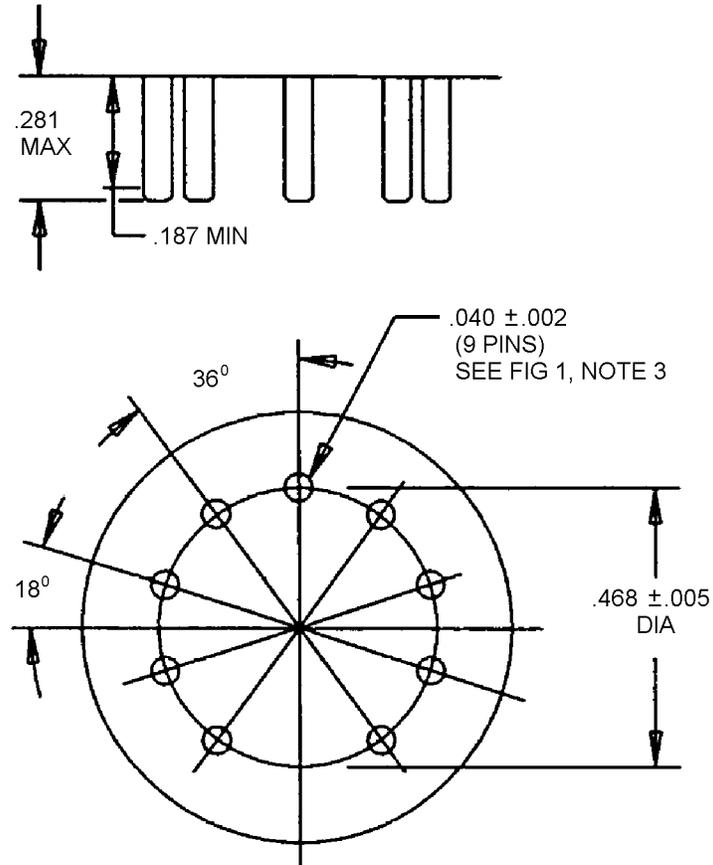
Inspection	D Gage dia max (mm)	No. of pins	Total weight of gage ounces (grams) (±5%)
Insertion and withdrawal force	47/64 (18.65)	9	---
Contact resistance	47/64 (18.65)	9	---
Contact retention	---	---	3 (85.05)
Durability	47/64 (18.65)	9	---

1/ Dimensions are in Inches.

2/ Metric equivalents are given for general information only.

MIL-DTL-12883/3E

Mating-base dimensions: Sockets shall accommodate plug-in components having mating-base dimensions as shown on figure 2.



Inches	mm
.002	0.05
.005	0.13
.040	1.02
.187	4.75
.281	7.14
.468	11.89

NOTES:

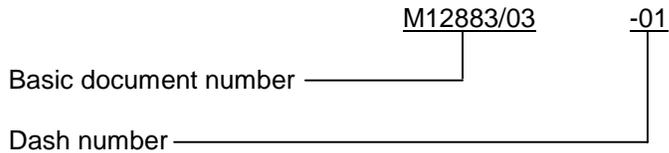
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FIGURE 2. Mating-base dimensions.

MIL-DTL-12883/3E

Part or Identifying Number (PIN): The PIN shall consist of the basic number of this specification sheet and the dash number from table I.

Example:



The Government PIN, specified in table III, supersedes the following commercial PIN's.

TABLE III. Supersession and cross reference data.

Active Government PIN	Superseded PIN					
	CAGE 72825	CAGE 91662	CAGE 06845	CAGE K0991	CAGE 95354	CAGE 73138
M12883/03-01	9713-342-05	BRCP286-125	C287037-1	PC81816-1	SMU195-125	SRE-410
M12883/03-02	TBD	NA	NA	NA	NA	NA

Active Government PIN	Superseded PIN					
	CAGE 80249	CAGE 28499	CAGE 18876	CAGE 74970	CAGE 28480	CAGE 71785
M12883/03-01						121-39-21-016
						121-39-22-011
						44B13373
	S01189	S0439-1-6X	10300889	120-199	120-25	44B22786
					1200-0019	53F12826
						9JC2
					9XB	

Active Government PIN	Superseded PIN					
	CAGE 81755	CAGE 13499	CAGE 49956	CAGE 56232	CAGE 08385	CAGE 79318
M12883/03-01	174PH	220-1104-00	282-1002P1	284559	3050015169	3400-0070
		220-1104-000	282-1002P2			

TABLE III. Supersession and cross reference data - Continued.

Active Government PIN	Superseded PIN					
	CAGE 96214	CAGE D1901	CAGE 94033	CAGE 14100	CAGE 01365	CAGE 04655
M12883/03-01	402656-2	5M5711-220-35	587B5-7	666068-562	703-187	7490-0100

Active Government PIN	Superseded PIN
	CAGE 82577
M12883/03-01	968508-7

CONCLUDING MATERIAL

Custodians:
 Army – CR
 Navy – EC
 Air Force – 11
 DLA – CC

Preparing activity:
 DLA – CC
 (Project 5935-4344-03)

Review activities:
 Army – AS, CG, OS, SH
 Navy – AR, AT, AV, CR4, EA, MI
 Air Force – 19