

INCH-POUND

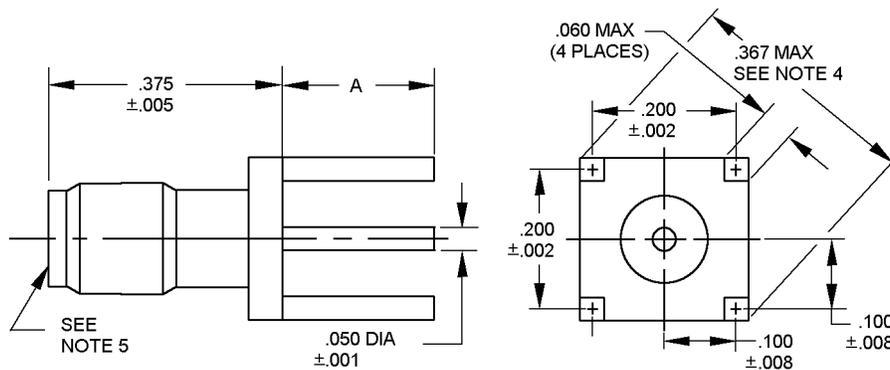
MIL-PRF-39012/93C
w/AMENDMENT 1
15 July 2016
SUPERSEDING
MIL-PRF-39012/93C
12 January 2014

PERFORMANCE SPECIFICATION SHEET

CONNECTORS, RECEPTACLES, ELECTRICAL, COAXIAL, RADIO FREQUENCY,
(SERIES SMA (UNCABLED), FEMALE, PRINTED CIRCUIT, CLASS 2)

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 sheet and MIL-PRF-39012.



Dash number (x = shell material)	Dimension A inches (mm)	Maximum overall length inches (mm)
X001	.155 (3.94) ± .010 (0.25)	.545 (13.64)
X002	.125 (3.18) ± .010 (0.25)	.515 (13.08)
X003	.093 (2.36) ± .010 (0.25)	.483 (12.27)

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.02	.008	0.20	.100	2.54	.375	9.53
.002	0.05	.050	1.27	.200	5.08		
.005	0.13	.060	1.52	.367	9.32		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. All undimensioned pictorial configurations are for reference purposes only.
4. Configuration optional.
5. Series SMA, socket contact interface in accordance with MIL-STD-348.
6. All corrosion-resistant steel-bodied connectors shall be gold plated in accordance with ASTM B488, type II, code C, class 1.27, at least in the area of solder attachment.

FIGURE 1. General configuration.



ENGINEERING DATA:

Nominal impedance: 50 ohms.

Frequency range: 0 to 18 GHz.

Voltage rating: 335 volts rms maximum at sea level: 85 volts rms maximum at 70,000 feet.

Temperature rating: -65°C to +105°C.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and MIL-STD-348.

Force to engage and disengage:

Longitudinal force: Not applicable.

Torque: 2 inch-pounds maximum.

Coupling proof torque: Not applicable.

Inspection conditions: For each test of threaded coupling connector where the test is performed on mated pairs, the pairs shall be torqued to 7 to 10 inch-pounds.

Mating characteristics: See MIL-STD-348 for dimensions.

Center contact (female):

Oversize test pin: $.0375 +.0001/-.0000$ inch. See figure 2.

Test pin finish: 16 microinches.

Insertion depth: $.030/.045$ inch.

Number of insertions: 3.

Insertion force test:

Steel test pin diameter: $.0370 +.0001/-.0000$ inch.

Insertion depth: $.050/.075$ inch.

Test pin finish: 16 microinches.

Insertion force: 2 pounds maximum.

Withdrawal force test:

Steel test pin diameter: $.0355 +.0000/-.0001$ inch.

Insertion depth: $.050/.075$ inch.

Test pin finish: 16 microinches.

Withdrawal force: 1 ounce minimum.

Hermetic seal: Not applicable.

Leakage (pressurized connectors): Not applicable.

Insulation resistance: In accordance with MIL-STD-202-302, test condition B, 5,000 megohms minimum.

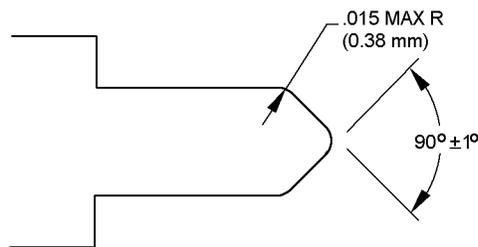


FIGURE 2. Test pin data.

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Center contact retention:

Axial force: 6.0 pounds minimum.

Radial torque: 4 inch-ounces minimum.

Solderability: MIL-STD-202-208. For quality conformance inspection, the test shall be performed in group B following the insulation resistance test.

Corrosion (salt spray): In accordance with MIL-STD-202-101, test condition B.

Voltage standing wave ratio (VSWR): Not applicable.

Connector durability:

Insertion and withdrawal force:

500 cycles minimum at 12 cycles per minute maximum.

The connector shall meet mating characteristics and force to engage and disengage requirements.

Contact resistance (in milliohms maximum):

Contact	Initial	After environment
Center contact	3.0	4.0
Outer contact	2.0	Not applicable

Dielectric withstanding voltage at sea level: In accordance with MIL-STD-202-301, 1,000 volts rms.

Vibration, high frequency: In accordance with MIL-STD-202-204, test condition D.

Shock (specified pulse): In accordance with MIL-STD-202-213, test condition I.

Thermal shock: In accordance with MIL-STD-202-107, test condition B, except test high temperature shall be +125°C.

Moisture resistance: In accordance with MIL-STD-202-106. No measurements at high humidity.

Insulation resistance shall be at least 200 megohms within 5 minutes after removal from humidity.

Corona level:

Voltage: 250 volts minimum.

Altitude: 70,000 feet.

RF high potential withstanding voltage:

Voltage and frequency: 670 volts rms at 5 MHz.

Leakage current: Not applicable.

Cable retention force: Not applicable.

Coupling mechanism retention force: Not applicable.

RF leakage: Not applicable.

Insertion loss: Not applicable.

Group qualification: See table I.

Part or Identifying Number (PIN): M39012/93- (dash number from figure 1) (see note below).

NOTE: The center conductor terminal and the mounting legs may be tinned by the manufacturer, if requested by an OEM. The type of tinning and any related tests may be specified by the OEM. The tinning operation shall not cause the connectors to otherwise fail these specification requirements. The parts are to be marked with the original PIN's in effect prior to the tinning operation. Tinned parts are for the OEM's immediate use only and should not be stocked and issued by the Government for replacement purposes.

TABLE I. Group qualification and retention testing.

Group	Submission and qualification of any of the following connectors, X = Material	Qualifies the following connectors
I	M39012/93-X001 M39012/93-X002 M39012/93-X003	M39012/93-X001 M39012/93-X002 M39012/93-X003

NOTE: If a connector manufacturer produces a connector which meets all the requirements for two or more connector types (within the same series), the manufacturer may receive qualification approval for the two or more connector types by qualifying the one connector. It is not necessary that such connectors be in the same group. Each connector, however, must be marked with its own appropriate PIN.

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents. In addition to MIL-PRF-39012, this document references the following:

MIL-STD-202-101	MIL-STD-202-204	MIL-STD-202-301	MIL-STD-348
MIL-STD-202-106	MIL-STD-202-208	MIL-STD-202-302	ASTM B488
MIL-STD-202-107	MIL-STD-202-213		

CONCLUDING MATERIAL

Custodians:
Army – CR
Navy – EC
Air Force – 85

Preparing activity:
DLA – CC

(Project 5935-2016-098)

Review activities:
Army – AM, AT, CR4, MI
Navy – AS, MC, OS, SH
Air Force – 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.