

INCH-POUND

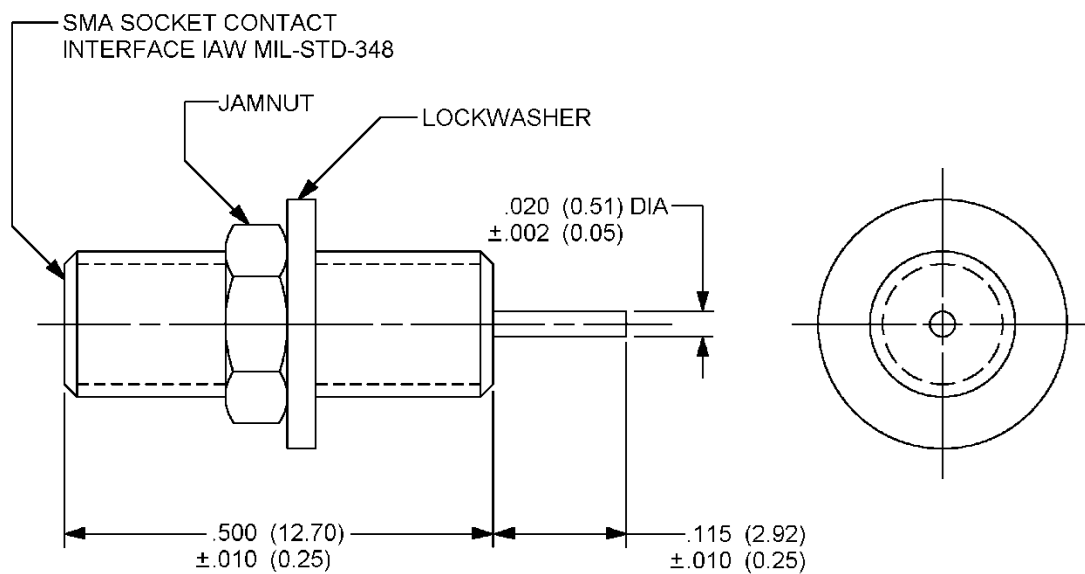
MIL-DTL-83517/13
w/AMENDMENT 2
13 March 2025
SUPERSEDING
MIL-DTL-83517/13
w/AMENDMENT 1
21 April 2015

DETAIL SPECIFICATION SHEET

CONNECTOR, RECEPTACLE, ELECTRICAL, COAXIAL, RADIO FREQUENCY, SERIES SMA, (SOCKET CONTACT) FEEDTHROUGH, HERMETIC

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

The complete requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-83517.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are in parenthesis
3. All undimensioned pictorial configurations are for reference purposes only.
4. Unless otherwise specified, all tolerances shall be $\pm .005$ inch (± 0.13 mm).

FIGURE 1. Series SMA, Feedthrough, Hermetic.



ENGINEERING PARAMETERS:

Nominal impedance: 50 ohms.

Voltage rating: 600 V rms maximum at sea level.
150 V rms maximum at 70,000 feet.

Frequency range: 0 to 18.0 GHz.

Temperature rating: -65° to +105°C.

REQUIREMENTS:

Design and construction: 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.

Permeability: Not Applicable.

Hermetic seal: Leakage shall not exceed 1×10^{-5} cubic centimeters per second of tracer gas at atmospheric pressure when mounted in mounting hole.

Leakage (pressurized connectors): Not applicable.

Insulation resistance: 5,000 megohms minimum, in accordance with test procedure EIA-364-21.

Center contact retention:

Axial force: 6 pounds minimum.

Torque: Not applicable.

Dielectric withstanding voltage: In accordance with test procedure EIA 364-20, test condition I.

Test voltage 1,000 V rms.

Vibration, high frequency: MIL-STD-202-204, condition D.

Corona level:

Altitude: 70,000 feet, 375 volts, minimum.

Shock: MIL-STD-202-213. The acceleration shall be 200'Gs.

Corrosion: In accordance with test procedure EIA-364-26, test condition B.

Voltage standing wave ratio (VSWR):

1.05 +.01 F (F in GHz), maximum. From .5 to 18.0 GHz.

MIL-DTL-83517/13
w/AMENDMENT 2

RF transmission loss: $.07 \sqrt{F}$ (F in GHz), tested 2-18 GHz.

RF leakage: Not applicable.

Connector durability: 500 cycles minimum, at 12 cycles per minute maximum. The connector shall meet the mating characteristics and force to engage and disengage requirements

Contact resistance: In milliohms maximum.

	<u>Initial</u>	<u>After environment</u>
Center contact:	10.0	10.0
Outer contact:	2.0	Not applicable

Thermal shock: Applicable, MIL-STD-202-107, test condition A.

Moisture resistance: MIL-STD-202-106.

No measurements at high humidity. Insulation resistance, except step 7b shall be omitted.

RF high potential withstanding voltage:

500 Volts at 5 MHz.

Leakage current: Not applicable.

RF leakage: -90 dB from 0 to 8 GHz.

RF insertion loss: 0.10 dB maximum at 6 GHz.

Barometric pressure (reduced): MIL-STD-202-105, test condition C. The connector shall not exhibit breakdown (corona) when the applied voltage is 250 volts rms at 70,000 feet.

Coupling mechanism retention force: Not applicable.

Part or Identifying Number (PIN): M83517/13-30001

Supersession: This document will supersede DSCC drawing 87036 once a qualified source is obtained.

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.

MIL-DTL-83517/13
w/AMENDMENT 2

Referenced documents. In addition to MIL-DTL-83517, this document references to the following:

MIL-STD-202-105	EIA 364-20
MIL-STD-202-106	EIA-364-21
MIL-STD-202-107	EIA-364-26
MIL-STD-202-204	
MIL-STD-202-213	
MIL-STD-348	

CONCLUDING MATERIAL

Custodians:

Army – CR
Navy – EC
Air Force – 85
DLA - CC

Preparing activity:
DLA – CC

(Project 5935-2025-015)

Review activities:

Army – AR, AT, CR4, MI
Navy – AS, MC, OS, SH

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/>.