

SMC Connector Specifications

Materials:

Body components, male contacts: Brass per ASTM-B-16, alloy 360, 1/2 hard.

Female contacts: Beryllium copper per ASTM-B-196, Condition HT.

Insulators: Teflon TFE per ASTM-D-1710.

Finish:

Center contacts: Gold plated per current revision of MIL-PRF-39012*

Other metal parts: Gold or nickel plated to meet current MIL-PRF-39012 corrosion requirements.*

Electrical:

Impedance: 50Ω. **Frequency range:** DC–10 GHz. **Insulation Resistance:** 1,000 megohms minimum.

Voltage Rating: 250VRMS @ sea level (RG-178 cable); 335VRMS @ sea level (RG-316 cable).

Dielectric Withstanding Voltage: 750VRMS @ sea level (RG-178 cable); 1000VRMS @ sea level (RG-316 cable).

Contact Resistance:

Straight connectors: Initial: 6 milliohms maximum; after environmental test conditions: 8 milliohms maximum.

Right angle connectors: Initial: 12 milliohms maximum; after environmental test conditions: 16 milliohms maximum.

Corona level: 125V @70,000 ft. **RF highpot:** 400 VRMS @ 5 MHz.

RF leakage: -60 dB min @ 2–3 GHz. **Insertion loss:** .25 dB max (straight connectors), .50 dB max (right angle connectors) @ 1.5 GHz.

VSWR: Cable	Straight connector	Right angle connector
RG-178	$1.25 + (.04 \times F[\text{GHz}])$	$1.40 + (.06 \times F[\text{GHz}])$
RG-316	$1.20 + (.04 \times F[\text{GHz}])$	$1.33 + (.04 \times F[\text{GHz}])$

Mechanical:

Mating torque: 35–50 inch-ounces. **Coupling nut pulloff resistance:** 35 pounds min.

Contact retention: 2 pounds min axial force. **Durability:** 500 mating cycles.

Environmental (MIL-STD-202):

Temperature range: -65° C to +165° C. **Corrosion:** Method 101, condition B, 5% salt solution.

Vibration (Method 204): Condition D.

Mechanical shock (Method 213): Condition C. **Thermal shock (Method 107):** Condition B.

*These specifications change periodically with updates to MIL-PRF-39012 requirements. Contact factory for latest specifications.

