

SMB - 50 Ohm Connectors

Specifications



INCHES (MILLIMETERS)
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

ELECTRICAL RATINGS

Impedance: 50 ohms

Frequency Range: Connectors 0-4 GHz
Dummy loads 0-1 GHz

VSWR: (f = GHz) Straight Right Angle
 Cabled Cabled
RG-178 cable 1.30 + .04f 1.45 + .06f
RG-316, RG-58, and .086 semi-rigid cable 1.25 + .04f 1.35 + .04f
Adapters 1.20 + .04f

Uncabled receptacles, dummy loads N/A

Working Voltage: (Vrms maximum)[†]

Connectors for Cable Type **Sea Level** **70K Feet**
RG-178 250 60

RG-316, RG-58, .086 semi-rigid
uncabled receptacles, adapters 335 85
Dummy loads N/A

Dielectric Withstanding Voltage: (VRMS minimum at sea level)[†]

Connectors for RG-178 750
Connectors for RG-316, RG-58, .086 semi-rigid,
uncabled receptacles, adapters 1000
Dummy loads N/A

Corona Level: (Volts minimum at 70,000 feet)[†]

Connectors for RG-178 185
Connectors for RG-316, RG-58, .086 semi-rigid 250
Uncabled receptacles, adapters, dummy loads N/A

Insertion Loss: (dB maximum, tested at 1.5 GHz)

Straight cable connectors 0.30 dB
Right angle cable connectors 0.60 dB
Uncabled receptacles, adapters and dummy loads N/A

Insulation Resistance: 1000 megohms minimum

Contact Resistance: (milliohms maximum) **Initial** **After Environmental**

Center contact (straight cabled connectors
and uncabled receptacles) 6.0 8.0

Center contact (right angle cabled
connectors and adapters) 12.0 16.0

Outer contact (gold plated connectors) 1.0 1.5

Outer contact (nickel plated connectors) 2.5 3.5

Braid to body (gold plated connectors) 1.0 N/A

Braid to body (nickel plated connectors) 2.5 N/A

RF Leakage: (dB minimum tested at 2.5 GHz)

Cable connectors -55 dB
Uncabled receptacles, adapters and dummy loads N/A

RF High Potential Withstanding Voltage: (Vrms minimum, tested at 4 and 7 MHz)[†]

Connectors for RG-178 500
Connectors for RG-316, RG-58 700
Uncabled receptacles and adapters 600
Dummy loads N/A

Power Rating (Dummy Load): 0.5 watt @ +25°C, derated to 0.25 watt @ +125° C

MECHANICAL RATINGS

Engagement Design: MIL-C-39012, Series SMB

Engagement/Disengagement Force: 2 pounds min to 14 pounds maximum axial force

Contact Retention: 4 lbs. min axial force (captivated contacts)

1 inch-ounce min torque (uncabled receptacles)

Cable Retention: **Axial Force* (pounds)** **Torque (in-oz)**

Connectors for RG-178 10 N/A

Connectors for RG-316 20 N/A

Connectors for RG-58 40 16

Connectors for .086 semi-rigid 30 16

* or cable breaking strength whichever is less.

Durability: 500 cycles minimum

ENVIRONMENTAL RATINGS

(Meets or exceeds the applicable paragraph of MIL-C-39012)

Temperature Range: Connectors - 65°C to + 165°C

Dummy loads - 65°C to + 125°C

Thermal Shock: MIL-STD-202, Method 107, Condition B (N/A dummy loads)

Corrosion: MIL-STD-202, Method 101, Condition B (N/A dummy loads)

Shock: MIL-STD-202, Method 213, Condition B (N/A dummy loads)

Vibration: MIL-STD-202, Method 204, Condition B (N/A dummy loads)

MATERIAL SPECIFICATIONS

Bodies: Brass per QQ-B-626 or zinc per ASTM B86-71, gold plated** per MIL-G-45204 .00001 min or nickel plated per QQ-N-290

Contacts: Male - brass per QQ-B-626, gold plated per MIL-G-45204 .00003" min.

Female - beryllium copper per QQ-C-530, gold plated per MIL-G-45204 .00003" min.

Insulators: PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457 OR Teflon PFA 340

Expansion Caps: Brass per QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

Crimp Sleeves: Copper per WW-T-799, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

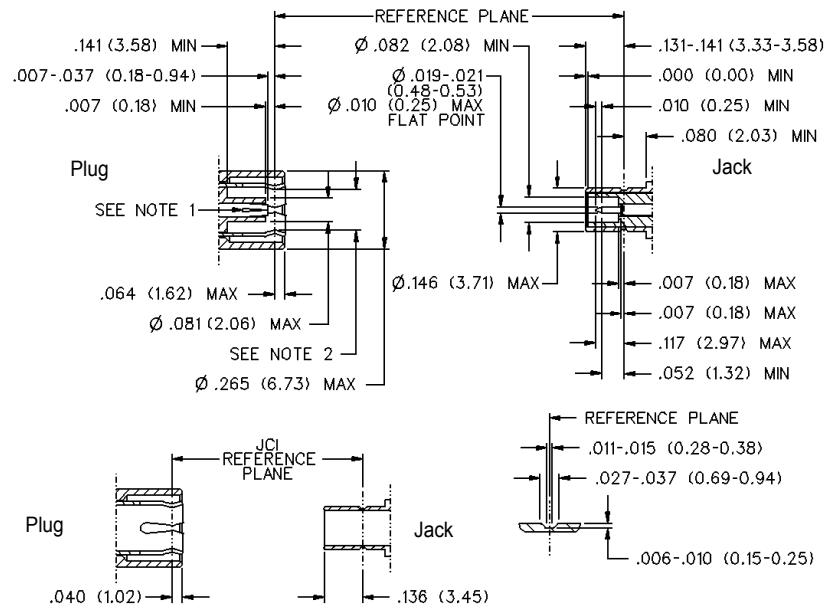
Mounting Hardware: Brass (nuts) per QQ-B-626 or phosphor bronze (lockwashers) QQ-B-750, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

Cover Rings: Phosphor Bronze per QQ-B-750, gold plated per MIL-G-45204 .00001 min. or nickel plated per QQ-N-290.

[†]Avoid user injury due to misapplication. See safety advisory definitions inside front cover.

** All gold plated parts include a .00005" min. nickel underplate barrier layer.

MATING ENGAGEMENT FOR SMB SERIES PER MIL-C-39012



Notes

1. ID of contact to meet VSWR mating characteristics and connector durability when mated with a dia .019/.053 male contact.
2. Must meet the force to engage and disengage when mated with mating part.