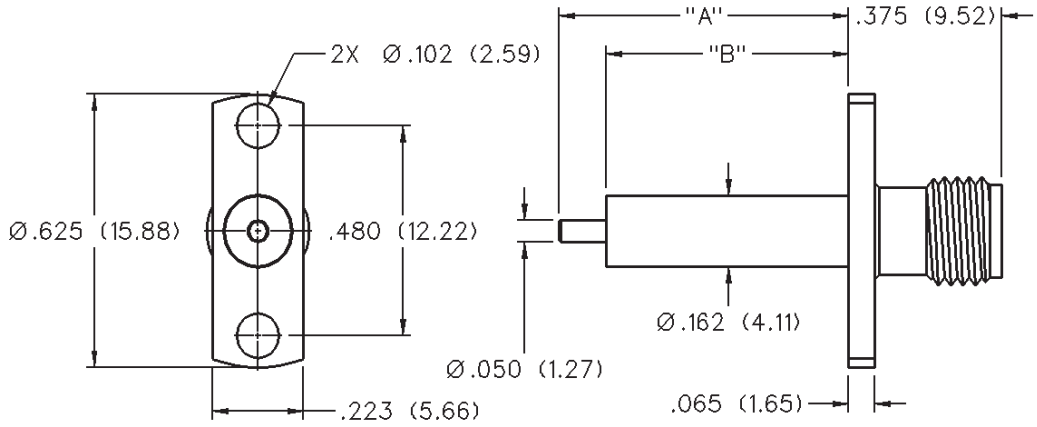
# 50 Ohm SMA
# 2-Hole Flange Mount Jack Receptacle - Extended Dielectric

INCHES (MILLIMETERS)
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST






| VSWR & FREQ. RANGE | GOLD PLATED | NICKEL PLATED | "A" | "B" |
|---|---|---|---|---|
| VSWR: 1.15 + .02 f (GHz) 0-18 GHz | 142-1701-131 | 142-1701-136 | .705 (17.91) | .590 (14.99) |


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# SMA - 50 Ohm Connectors

Specifications

INCHES (MILLIMETERS)
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

## ELECTRICAL RATINGS

**Impedance:** 50 ohms

**Frequency Range:**

| | |
|---|---|
| Dummy loads | 0-2 GHz |
| Flexible cable connectors | 0-12.4 GHz |
| Uncabled receptacles, RA semi-rigid and adapters | 0-18.0 GHz |
| Straight semi-rigid cable connectors and field replaceable connectors | 0-26.5 GHz |

**VSWR:** (f = GHz)

| | Straight Cabled Connectors | Right Angle Cabled Connectors |
|---|---|---|
| RG-178 cable | 1.20 + .025f | 1.20 + .03f |
| RG-316, LMR-100 cable | 1.15 + .02f | 1.15 + .03f |
| RG-58, LMR-195 cable | 1.15 + .01f | 1.15 + .02f |
| RG-142 cable | 1.15 + .01f | 1.15 + .02f |
| LMR-200, LMR-240 cable | 1.10 + .03f | 1.10 + .06f |
| .086 semi-rigid | 1.07 + .008f | 1.18 + .015f |
| .141 semi-rigid (w/contact) | 1.05 + .008f | 1.15 + .015f |
| .141 semi-rigid (w/o contact) | 1.035 + .005f | |
| Jack-bulkhead jack adapter and plug-plug adapter | 1.05 + .01f | |
| Jack-jack adapter and plug-jack adapter | 1.05 + .005f | |
| Uncabled receptacles, dummy loads | N/A | |
| Field replaceable (*see page 59)* | N/A | |

**Working Voltage:** (Vrms maximum)

| Connectors for Cable Type | Sea Level | 70K Feet |
|---|---|---|
| RG-178 | 170 | 45 |
| RG-316; LMR-100, 195, 200 | 250 | 65 |
| RG-58, RG-142, LMR-240, .086 semi-rigid, uncabled receptacles, .141 semi-rigid w/o contact | 335 | 85 |
| .141 semi-rigid with contact and adapters | 500 | 125 |
| Dummy loads | N/A | |

**Dielectric Withstanding Voltage:** (VRMS minimum at sea level)

| | |
|---|---|
| Connectors for RG-178 | 500 |
| Connectors for RG-316; LMR-100, 195, 200 | 750 |
| Connectors for RG-58, RG-142, LMR-240, .086 semi-rigid, field replaceable, uncabled receptacles | 1000 |
| Connectors for .141 semi-rigid with contact and adapters | 1500 |
| Connectors for .141 semi-rigid w/o contact, dummy loads | N/A |

**Corona Level:** (Volts minimum at 70,000 feet)

| | |
|---|---|
| Connectors for RG-178 | 125 |
| Connectors for RG-316; LMR-100, 195, 200 | 190 |
| Connectors for RG-58, RG-142, LMR-240, 086 semi-rigid, uncabled receptacles, .141 semi-rigid w/o contact | 250 |
| Connectors for .141 semi-rigid with contact and adapters | 375 |
| Dummy loads | N/A |

**Insertion Loss:** (dB maximum)

| | |
|---|---|
| Straight flexible cable connectors and adapters | 0.06 $\sqrt{f\ (GHz)}$, tested at 6 GHz |
| Right angle flexible cable connectors | 0.15 $\sqrt{f\ (GHz)}$, tested at 6 GHz |
| Straight semi-rigid cable connectors with contact | 0.03 $\sqrt{f\ (GHz)}$, tested at 10 GHz |
| Right angle semi-rigid cable connectors | 0.05 $\sqrt{f\ (GHz)}$, tested at 10 GHz |
| Straight semi-rigid cable connectors w/o contact | 0.03 $\sqrt{f\ (GHz)}$, tested at 16 GHz |
| Straight low loss flexible cable connectors | 0.06 $\sqrt{f\ (GHz)}$, tested at 1 GHz |
| Right Angle low loss flexible cable connectors | 0.15 $\sqrt{f\ (GHz)}$, tested at 1 GHz |
| Uncabled receptacles, field replaceable, dummy loads | N/A |

**Insulation Resistance:** 5000 megohms minimum

**Contact Resistance:** (milliohms maximum)

| | Initial | After Environmental |
|---|---|---|
| Center contact (straight cabled connectors and uncabled receptacles) | 3.0* | 4.0* |
| Center contact (right angle cabled connectors and adapters) | 4.0 | 6.0 |
| Field replaceable connectors | 6.0 | 8.0 |
| Outer contact (all connectors) | 2.0 | N/A |
| Braid to body (gold plated connectors) | 0.5 | N/A |
| Braid to body (nickel plated connectors) | 5.0 | N/A |

*N/A where the cable center conductor is used as a contact

**RF Leakage:** (dB minimum, tested at 2.5 GHz)

| | |
|---|---|
| Flexible cable connectors, adapters and .141 semi-rigid connectors w/o contact | -60 dB |
| Field replaceable w/o EMI gasket | -70 dB |
| .086 semi-rigid connectors and .141 semi-rigid connectors with contact, and field replaceable with EMI Gasket | -90 dB |
| Two-way adapters | -90 dB |
| Uncabled receptacles, dummy loads | N/A |

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

| | |
|---|---|
| Connectors for RG-178 | 335 |
| Connectors for RG-316; LMR-100, 195, 200 | 500 |
| Connectors for RG-58, RG-142, LMR-240, .086 semi-rigid, .141 semi-rigid cable w/o contact, uncabled receptacles | 670 |
| Connectors for .141 semi-rigid with contact and adapters | 1000 |

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

## MECHANICAL RATINGS

**Engagement Design:** MIL-C-39012, Series SMA

**Engagement/Disengagement Force:** 2 inch-pounds maximum

**Mating Torque:** 7 to 10 inch-pounds

**Bulkhead Mounting Nut Torque:** 15 inch-pounds

**Coupling Proof Torque:** 15 inch-pounds minimum

**Coupling Nut Retention:** 60 pounds minimum

**Contact Retention:**

6 lbs. minimum axial force (captivated contacts)
4 inch-ounce minimum torque (uncabled receptacles)

| Cable Retention: | Axial Force*(lbs) | Torque (in-oz) |
|---|---|---|
| Connectors for RG-178 | 10 | N/A |
| Connectors for RG-316, LMR-100 | 20 | N/A |
| Connectors for LMR-195, 200 | 30 | N/A |
| Connectors for RG-58, LMR-240 | 40 | N/A |
| Connectors for RG-142 | 45 | N/A |
| Connectors for .086 semi-rigid | 30 | 16 |
| Connectors for .141 semi-rigid | 60 | 55 |

*Or cable breaking strength whichever is less.

**Durability:** 500 cycles minimum
100 cycles minimum for .141 semi-rigid connectors w/o contact

## ENVIRONMENTAL RATINGS (Meets or exceed the applicable paragraph of MIL-C-39012)

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

**Thermal Shock:** MIL-STD-202, Method 107, Condition B

**Corrosion:** MIL-STD-202, Method 101, Condition B

**Shock:** MIL-STD-202, Method 213, Condition I

**Vibration:** MIL-STD-202, Method 204, Condition D

**Moisture Resistance:** MIL-STD-202, Method 106

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

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# SMA - 50 Ohm Connectors

Specifications

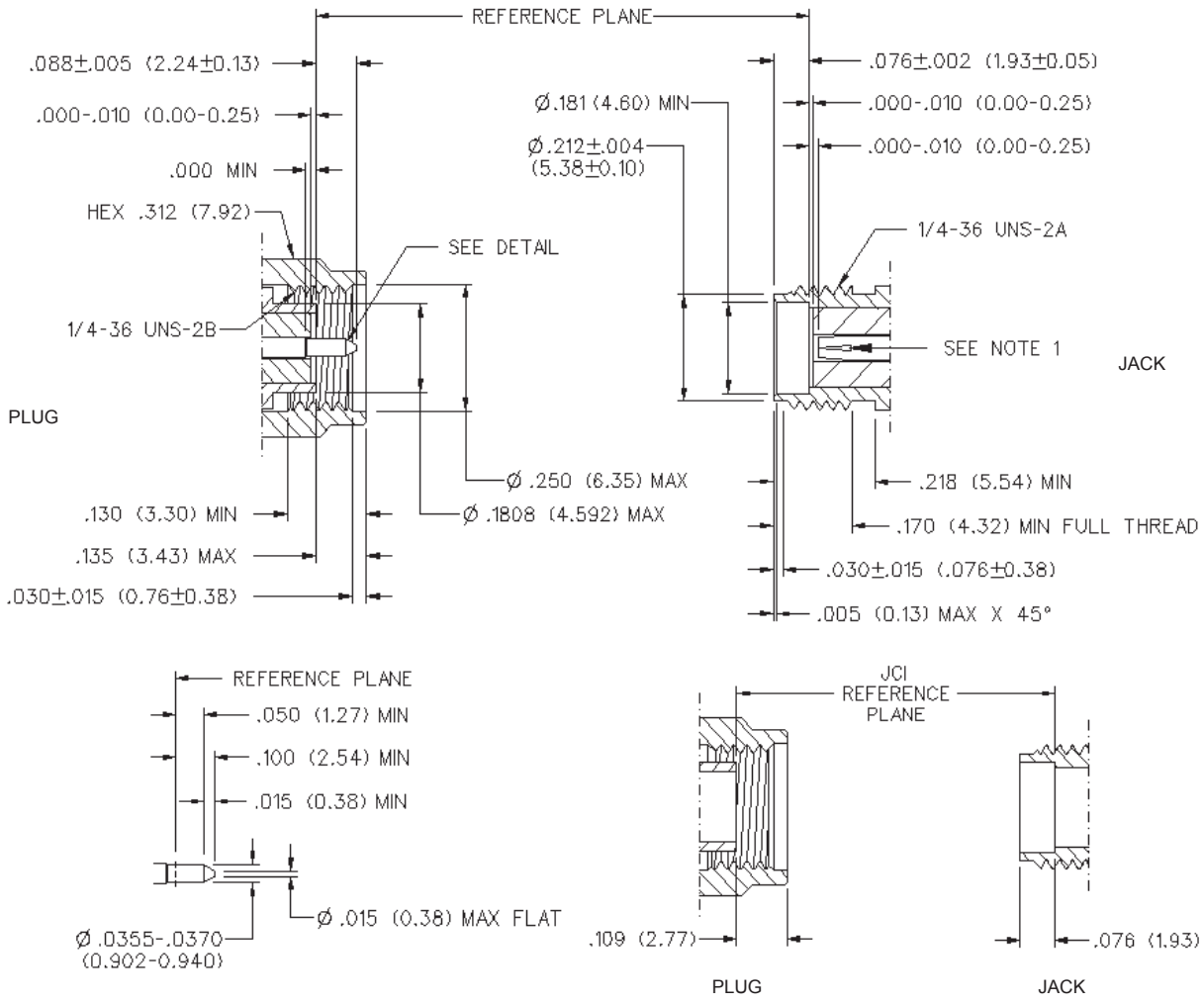
INCHES (MILLIMETERS)
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

## MATERIAL SPECIFICATIONS

**Bodies:** Brass per QQ-B-626, 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.
**Nut Retention Spring:** Beryllium copper per QQ-C-533. Unplated
**Insulators:** PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457 or Tefzel per ASTM D 3159 or PFA 340 per ASTM
**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 or brass per QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290
**Mounting Hardware:** Brass per QQ-B-626 or QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290
**Seal Rings:** Silicone rubber per ZZ-R-765
**EMI Gaskets:** Conductive silicone rubber per MIL-G-83528, Type M

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

**Mating Engagement for SMA Series per MIL-C-39012**




**NOTES**
1. ID OF CONTACT TO MEET VSWR, CONTACT RESISTANCE AND INSERTION WITHDRAWAL FORCES WHEN MATED WITH DIA .0355-.0370 MALE PIN.



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