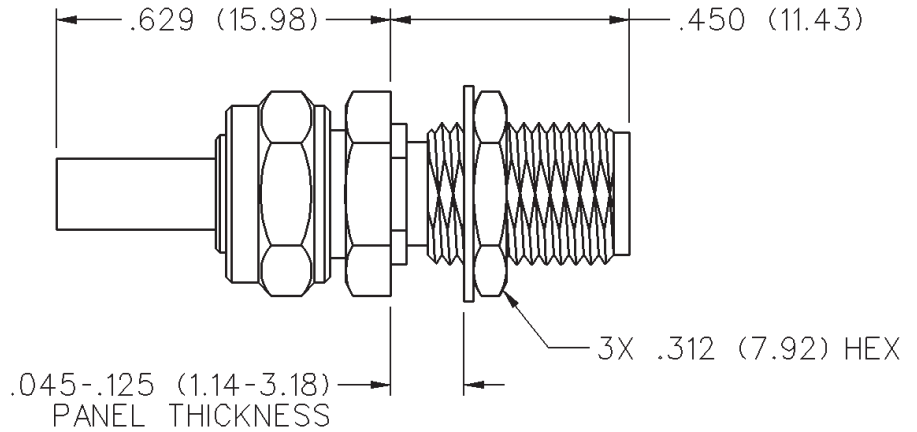


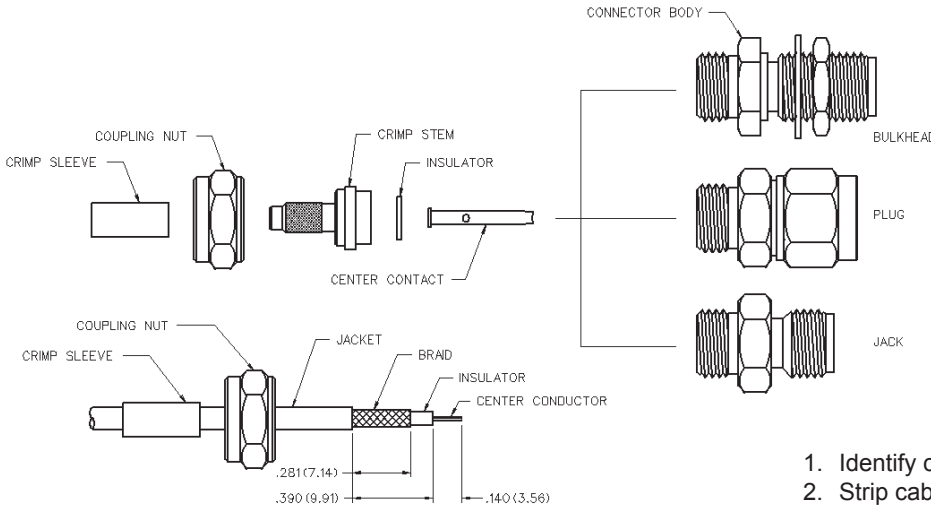
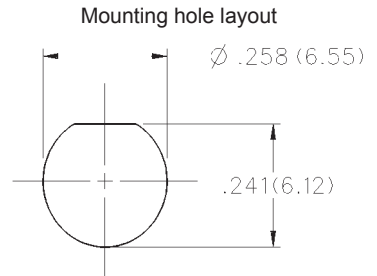
SMA 50 Ohm Straight Crimp Type Bulkhead Jack - Captivated Contact



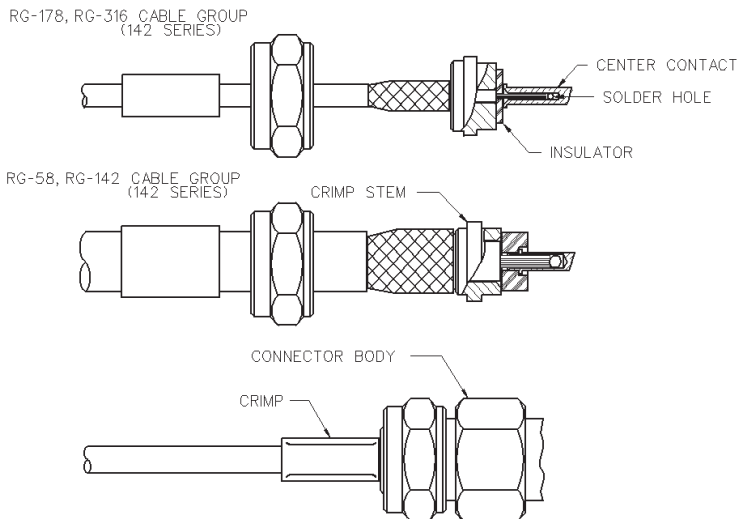
INCHES (MILLIMETERS)
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST



| CABLE TYPE | VSWR & FREQ. RANGE | GOLD PLATED | NICKEL PLATED |
|---------------|--------------------------------|--------------|---------------|
| RG-178/U, 196 | 1.20 + .025 f (GHz) 0-12.4 GHz | 142-0302-401 | 142-0302-406 |



| CABLE GROUP | PART NUMBER | CRIMP HEX |
|---------------|--------------|-------------|
| RG-178/u, 196 | 142-0302-401 | .105 (2.67) |
| | 142-0302-406 | .105 (2.67) |



1. Identify connector parts. (6 piece parts - except bulkhead)
2. Strip cable to dimensions shown. Do not nick braid or center conductor. A wire stripper of correct size is recommended for this step. Twist stranded center conductor into tight bundle and tin (optional). Slide crimp sleeve, nut and heat shrink tubing (as applicable) onto cable as shown.
3. Flare braid and slide cable into crimp stem. Place rear insulator and center contact over center conductor and position as shown for different cable sizes. Solder center conductor to contact through the solder hole. Solder **must not** be allowed to gather and run on outside of contact. Use a minimum amount of solder for a good joint. **.020 (0.51) diameter solder is recommended.**
4. Arrange braid uniformly around crimp stem. Slide crimp sleeve over braid and crimp securely using recommended crimp tool. Slide center contact assembly into connector body. Thread coupling nut onto body and tighten to 10 in.-lb. torque. Slide heat shrink forward and shrink (as applicable).

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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