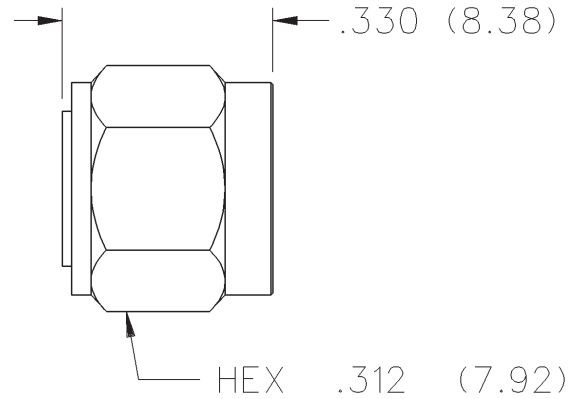
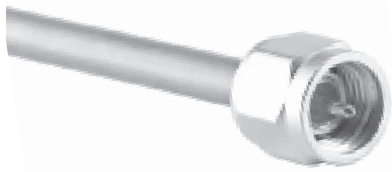
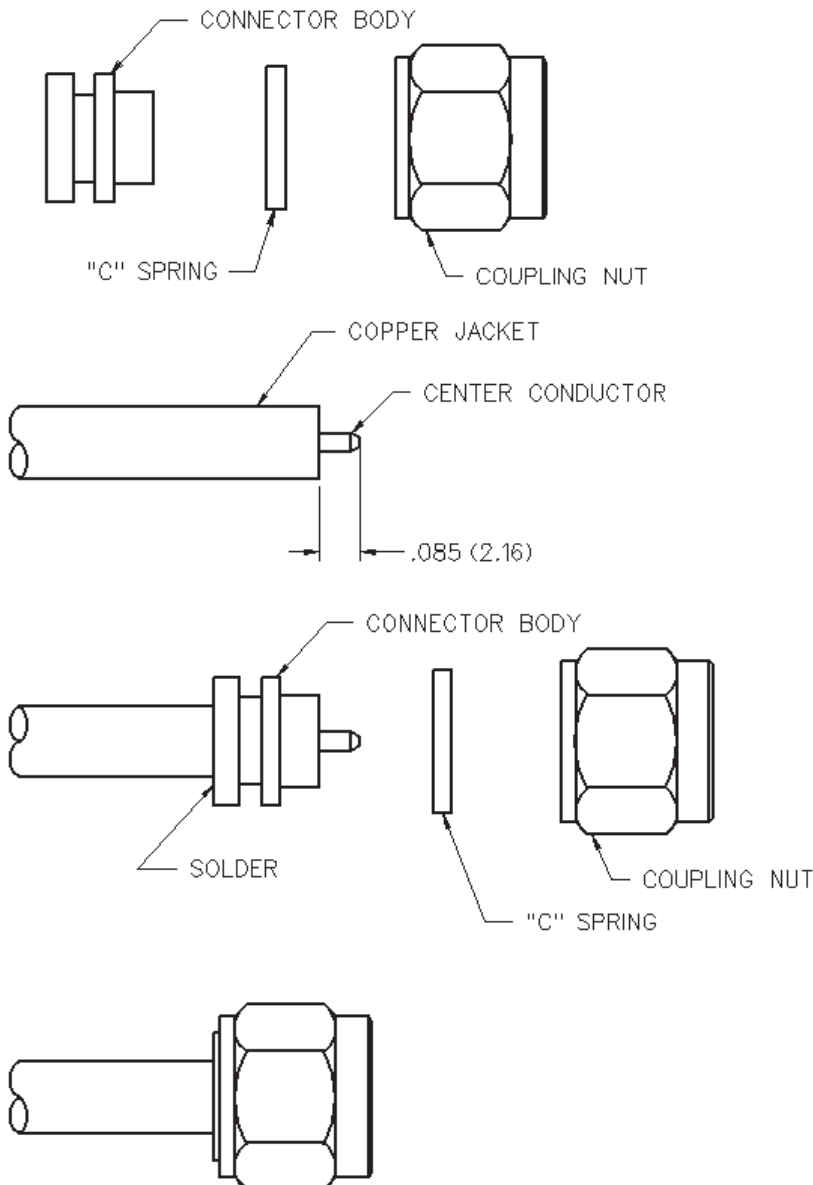


# SMA 50 Ohm Straight Solder Type Plug - Short Profile - without contact, captive nut



| CABLE TYPE         | VSWR & FREQ. RANGE                 | GOLD PLATED  | NICKEL PLATED |
|--------------------|------------------------------------|--------------|---------------|
| .141<br>Semi-Rigid | 1.035 + .005 f (GHz)<br>0-26.5 GHz | 142-0694-031 | 142-0694-036  |

Center conductor of cable serves as contact.



1. Identify connector parts. (3 piece parts)
2. Strip cable to dimensions shown. Do not nick center conductor. Bevel the cable center conductor per contact detail of SMA interface on page 26.
3. Insert cable into body making sure cable jacket is flush with front of body. Solder body to cable. Use a minimum amount of heat to minimize cable insulation movement. Trim expanded cable insulation flush with front of body or fixture body and cable during soldering to prevent insulation expansion.
4. Snap "C" spring onto connector body groove. Compress "C" spring using 141-0000-904 compression tool. Install coupling nut onto connector body. Nut should spin freely.

# SMA - 50 Ohm Connectors

Specifications



## 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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