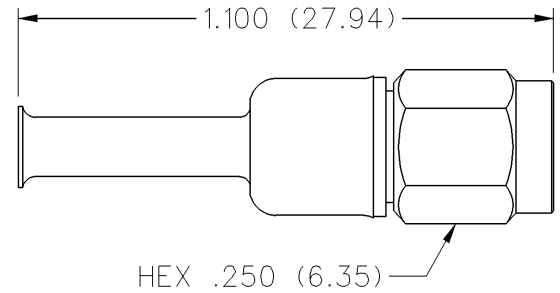


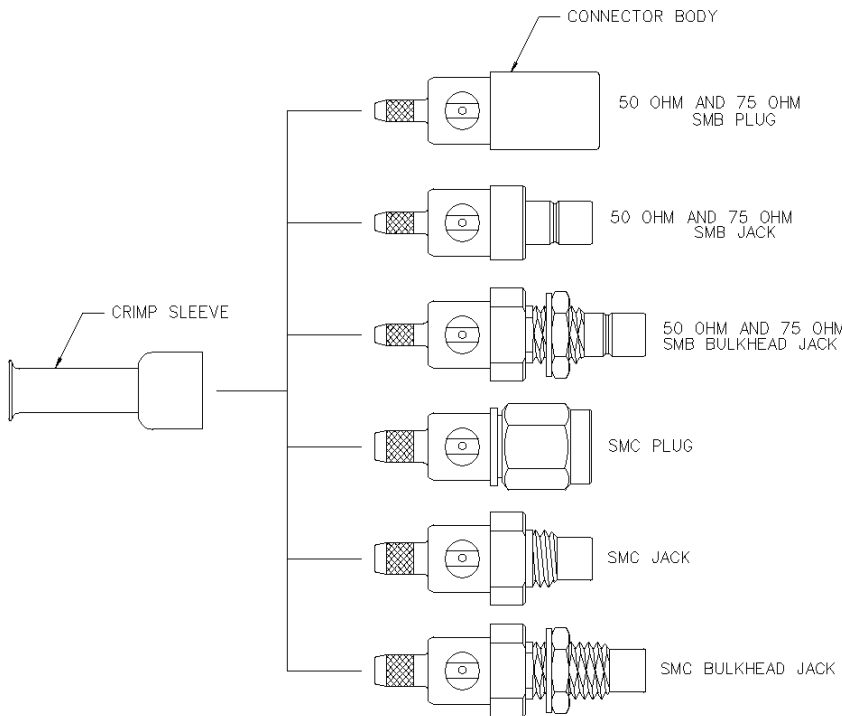
# 50 Ohm SMC Straight Crimp Type Plug - Captivated Contact



INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST



| CABLE TYPE              | GOLD PLATED  | NICKEL PLATED |
|-------------------------|--------------|---------------|
| RG-161/U, 174, 188, 316 | 131-6403-001 | 131-6403-006  |

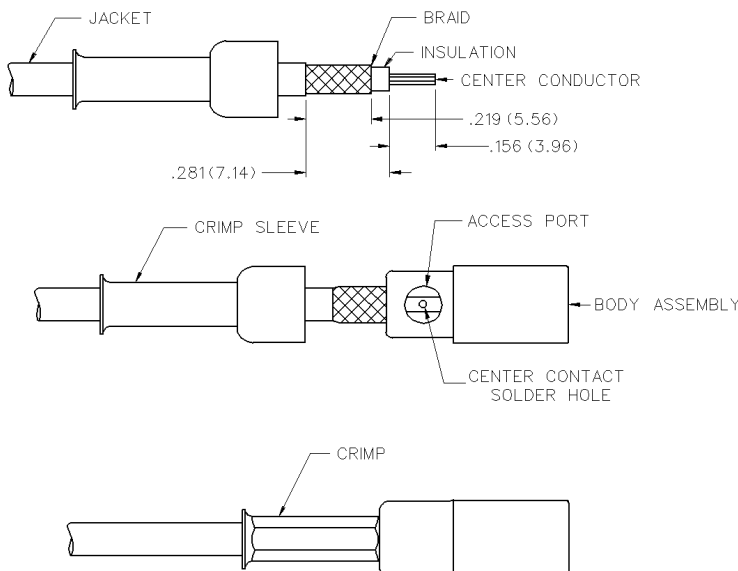


| CABLE GROUP             | PART NUMBER      | CRIMP HEX   |
|-------------------------|------------------|-------------|
| RG-316/u, 161, 174, 188 | 131-6403-001/006 | .128 (3.25) |

1. Identify connector parts. (2 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. Slide crimp sleeve onto cable as shown.
3. Flare braid and slide cable into body making certain that the cable insulation bottoms in center contact.

**Solder Attachment:** Solder center conductor to contact through the side access ports and hole in center contact. Use a minimum amount of solder for a full fillet joint. **.020 (0.51) diameter solder is recommended.**

Crimp 50 Ohm connector contacts with 141-0000-911 dieset in 144-900 tool frame. Crimp 75 Ohm connector contacts with 141-0000-924 dieset in 144-0000-900 tool frame.



# SMC - 50 Ohm Connectors



## Specifications

INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

### ELECTRICAL RATINGS

**Impedance:** 50 ohms

**Frequency Range:** 0-10 GHz

| VSWR: (f = GHz)                  | Straight Cabled | Right Angle Cabled |
|----------------------------------|-----------------|--------------------|
| RG-178 cable                     | 1.25 + .04f     | 1.40 + .06f        |
| RG-316 and .086 semi-rigid cable | 1.20 + .04f     | 1.30 + .04f        |
| Uncabled receptacles             | N/A             |                    |
| Adapters                         | 1.20 + .04f     |                    |

**Working Voltage:** (Vrms maximum)†

| Connectors for Cable Type                              | Sea Level | 70K Feet |
|--|-----------|----------|
| RG-178   | 250       | 60       |
| RG-316, .086 semi-rigid uncabled receptacles, adapters | 335       | 85       |

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

|   |      |
|---|------|
| Connectors for RG-178   | 750  |
| Connectors for RG-316, .086 semi-rigid uncabled receptacles, adapters | 1000 |

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

|  |     |
|--|-----|
| Connectors for RG-178                  | 185 |
| Connectors for RG-316, .086 semi-rigid | 250 |
| Uncabled receptacles and adapters      | N/A |

**Insertion Loss:** (dB maximum, tested at 4 GHz)

|                                   |         |
|-----------------------------------|---------|
| Straight cable connectors         | 0.25 dB |
| Right angle cable connectors      | 0.50 dB |
| Uncabled receptacles and adapters | 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     | N/A                 |
| Outer contact (nickel plated connectors)                             | 2.5     | N/A                 |
| 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 and adapters | N/A    |

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

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

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

|                                   |     |
|-----------------------------------|-----|
| Connectors for RG-178             | 500 |
| Connectors for RG-316             | 700 |
| Uncabled receptacles and adapters | 600 |

### MECHANICAL RATINGS

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

**Engagement/Disengagement Force:** 16 inch-ounce maximum torque

**Mating Torque:** 35 to 50 inch-ounce

**Coupling Proof Torque:** 100 inch-ounce minimum

**Coupling Nut Retention:** 35 pounds minimum

**Contact Retention:** 4 lbs. minimum axial force (captivated contacts)  
1 inch-ounce minimum 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 .086 semi-rigid | 30                    | 16             |

\* or cable breaking strength whichever is less

**Durability:** 500 cycles minimum

**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-210, Method 213, Condition C

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

### 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

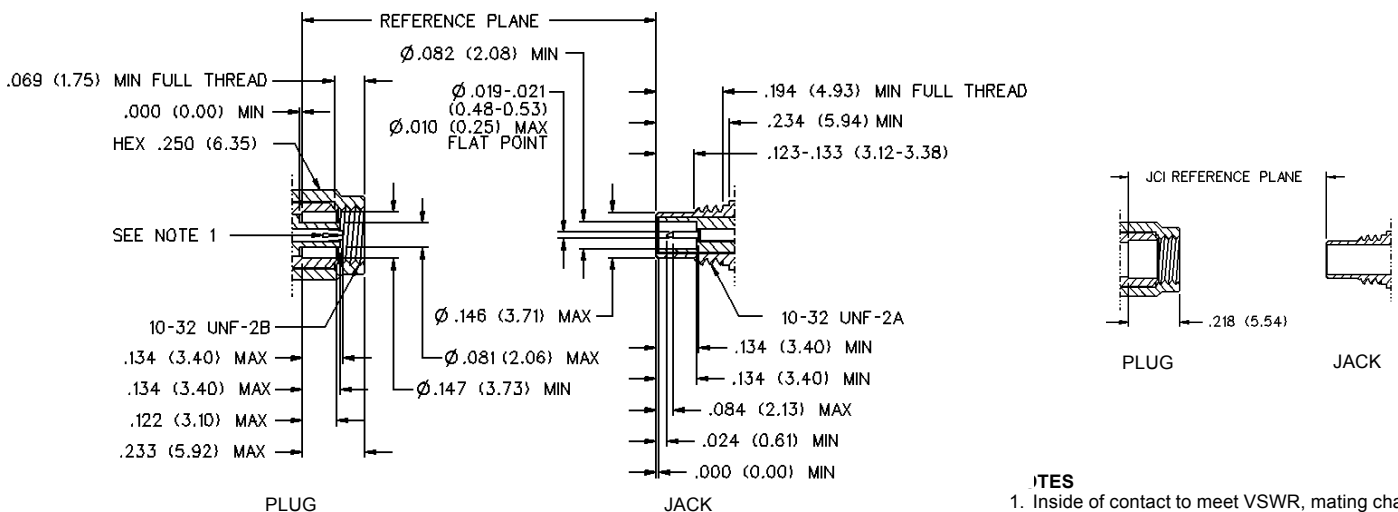
**Insulators:** PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457

**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) per QQ-B-750, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

### MATING ENGAGEMENT FOR SMC SERIES PER MIL-C-39012



### NOTES

1. Inside of contact to meet VSWR, mating characteristics and connector durability when mated with a dia .019/.021 (0.48/0.53) male contact.

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