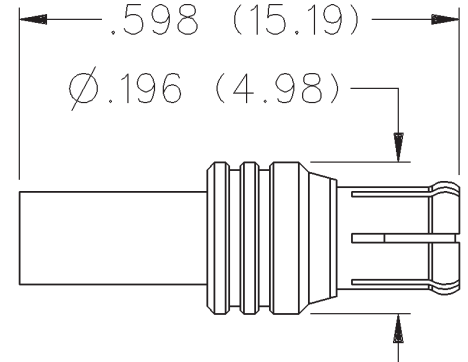


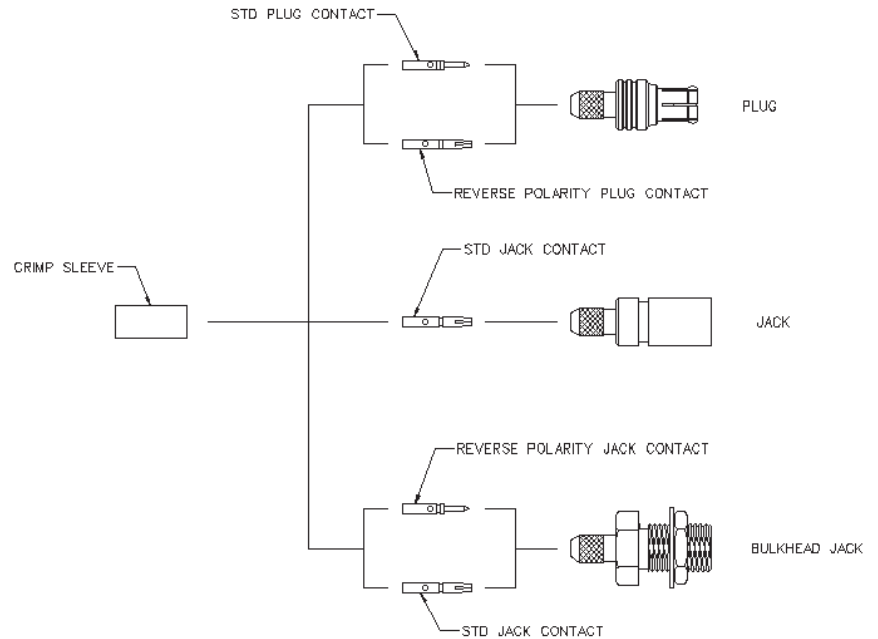
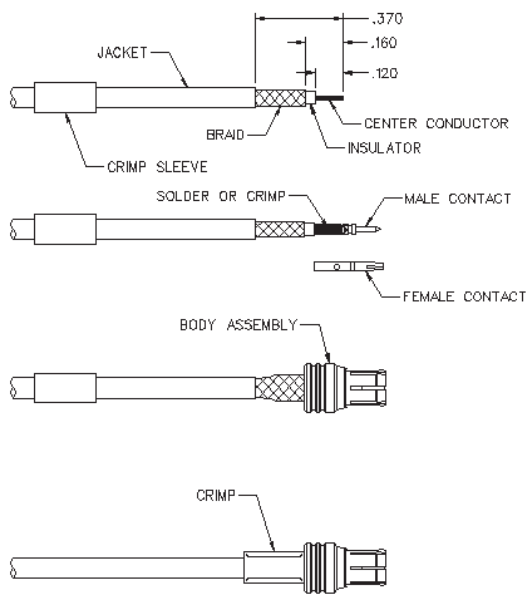
# MCX 50 Ohm Straight Crimp Type Plug - Solder or Crimp Contact



INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST



| CABLE TYPE           | GOLD PLATED  | NICKEL PLATED | CAPTIVATED CONTACT |
|----------------------|--------------|---------------|--------------------|
| RG-188 DS, RG-316 DS | 133-3404-001 | 133-3404-006  | YES                |



| CABLE GROUP     | PART NUMBER  | CRIMP HEX   |
|-----------------|--------------|-------------|
| RG-316DS, 188DS | 133-3404-001 | .151 (3.83) |
|                 | 133-3404-006 | .151 (3.83) |

- Identify connector parts. (3 piece parts except bulkhead)
- Strip cable to dimensions shown. Do not nick braid or center conductor. Tin center conductor if contact is to be solder attached. Do not tin center conductor if contact is to be crimp attached. Slide heat shrink (as applicable) and crimp sleeve onto jacket of cable.
- Assemble contact onto cable as shown.
 

**Solder attachment.** Solder contact to center conductor through solder hole using .020 (0.51) diameter solder. Use a minimum of solder for a good joint.

**Crimp attachment.** Crimp contact to center conductor using Johnson Components™ hand tool 140-0000-952 and die set 140-0000-953. Crimp location should be centered between end of contact and cross hole. Crimp attachment to solid center conductor cable is not recommended.
- Flair braid and slide body assembly over contact and under braid. Then seat body assembly firmly onto contact. The cable may have to be held in a clamping fixture. Arrange braid uniformly around crimp stem. Slide crimp sleeve forward and crimp using recommended crimp tool. Slide heat shrink forward and shrink (as applicable).

# MCX - 50 Ohm Connectors



## Specifications

INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

### ELECTRICAL RATINGS

**Impedance:** 50 Ohms

**Frequency Range:** Connectors ..... 0-6 GHz  
 Dummy loads ..... 0-1 GHz

**VSWR:** (f = GHz)      Straight Cabled      Right Angle  
                                     Connectors      Cabled Connectors

RG-178 cable ..... 1.17 + .04f      1.07 + .06f  
 RG-316 and .086 semi-rigid cable ... 1.13 + .04f      1.07 + .04f  
 Adapters ..... 1.13 + .04f  
 Uncabled receptacles, Dummy loads ..... N/A

**Working Voltage:** (Vrms maximum)†

| Connectors for Cable Type  | Sea Level | 70K Feet |
|--|-----------|----------|
| RG-178   | 250       | 65       |
| RG-316, .086 semi-rigid uncabled<br>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, .086 semi-rigid,<br>uncabled receptacles, adapters | 1000 |
| Dummy loads   | N/A  |

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

|  |     |
|--|-----|
| Connectors for RG-178  | 190 |
| Connectors for RG-316, .086 semi-rigid<br>uncabled receptacles, adapters | 250 |
| Dummy loads  | N/A |

**Insertion Loss:** (dB maximum, tested at 1 GHz)

|  |        |
|--|--------|
| Straight cable connectors and adapters | 0.1 dB |
| Right angle cable connectors           | 0.2 dB |
| Uncabled receptacles, dummy loads      | N/A    |

**Insulation Resistance:** 10,000 megohms minimum

**Contact Resistance:** (milliohms maximum)

|   | Initial | After Environmental |
|---|---------|---------------------|
| Center contact (straight cabled connectors,<br>uncabled receptacles and adapters) | 5.0     | 8.0                 |
| Center contact (right angle cabled connectors)                                    | 5.0     | 15.0                |
| Outer contact   | 1.0     | 1.5                 |
| Braid to body (gold plated connectors)  | 1.0     | N/A                 |
| Braid to body (nickel plated connectors)  | 2.5     | N/A                 |

**RF Leakage:** (dB typical tested at 2.5 GHz)

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

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

|                                   |     |
|-----------------------------------|-----|
| Connectors for RG178              | 500 |
| Connectors for RG316 and adapters | 700 |
| .086 semi-rigid                   | 670 |
| Uncabled receptacles              | 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:** Compatible with CECC 22220, Series MCX

**Engagement Force:** 5.6 pounds maximum axial force

**Disengagement Force:** 8 pounds maximum axial force, 1 pound min.

**Contact Retention:** 2.3 pounds min. axial force (captivated contacts)  
 1 inch-ounce min. torque (uncabled receptacles)

**Cable Retention:**

|  | Axial Force* (pounds) | Torque (in-oz) |
|--|-----------------------|----------------|
|--|-----------------------|----------------|

|                                |    |     |
|--------------------------------|----|-----|
| Connectors for RG178           | 10 | N/A |
| Connectors for RG316           | 20 | N/A |
| Connectors for RG316DS         | 25 | N/A |
| Connectors for .086 semi-rigid | 30 | 16  |

\* or cable breaking strength whichever is less.

**ENVIRONMENTAL RATINGS (Meets or exceed the applicable paragraph of MIL-C-39012)Durability:** 500 cycles minimum

**Temperature Range:** Connectors ..... - 65°C to + 165°C  
 Dummy loads ..... - 65°C to + 125°C

**Thermal Shock:** MIL-STD-202, Method 107, Condition F (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)

**Moisture Resistance:** MIL-STD-202, Method 106 (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 or bright tin plated

**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

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

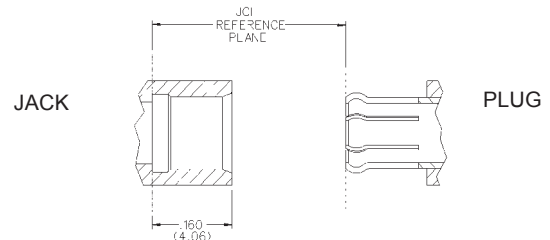
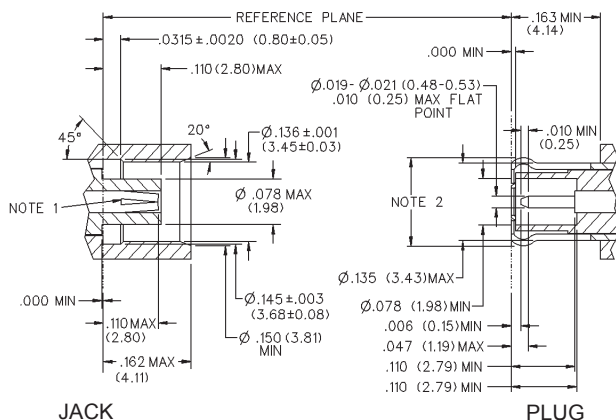
**Crimp Sleeves:** Copper per WW-T-799, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

**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

Avoid user injury due to misapplication. See safety advisory definitions on page 2.

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

### MATING ENGAGEMENT FOR MCX SERIES COMPATIBLE WITH CECC 22220



#### NOTES

- ID of contact to meet VSWR mating characteristics and connector durability when mated with a dia. .019-.021 (0.48-0.53) male contact.
- Must meet the force to engage and disengage when mated with mating part.