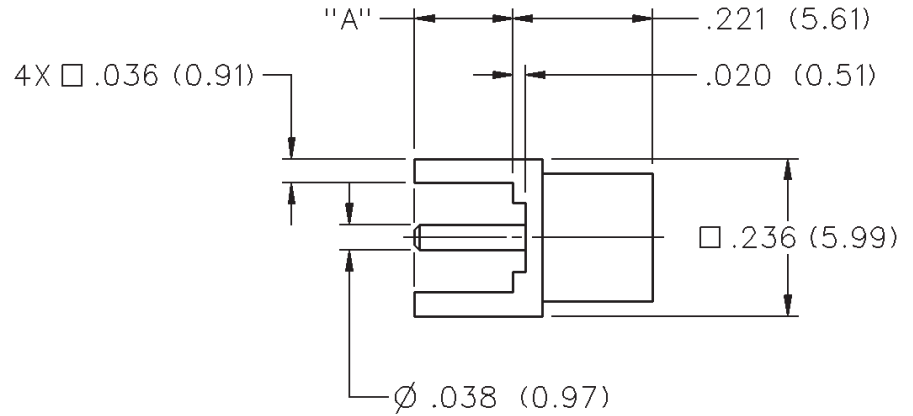


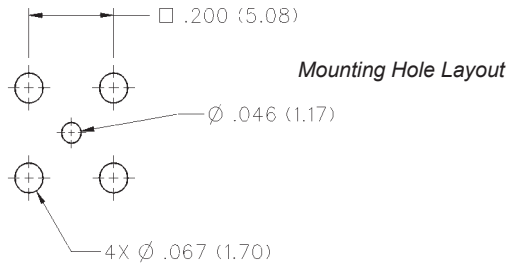
# MCX 50 Ohm Straight Jack Receptacle



INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST



| DIMENSION "A" | GOLD PLATED  | NICKEL PLATED |
|---------------|--------------|---------------|
| .110 (2.79)   | 133-3701-211 | 133-3701-216  |



# 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)

|   |                |                                      |
|---|----------------|--------------------------------------|
|   | <u>Initial</u> | <u>After</u><br><u>Environmental</u> |
| 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                                  |
| <b>RF Leakage:</b> (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* | Torque  |
|--------------------------------------|--------------|---------|
|                                      | (pounds)     | (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)

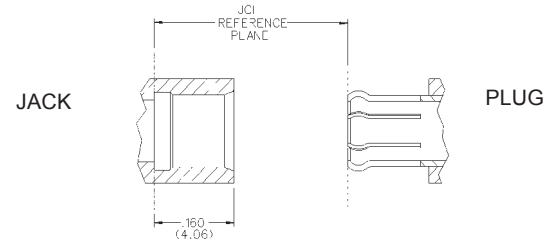
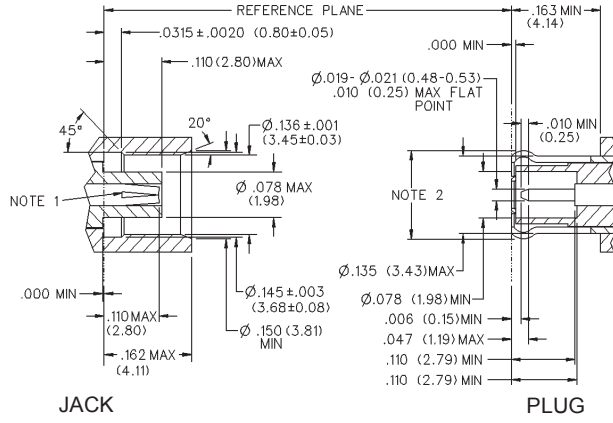
**Vibration:** MIL-STD-202, Method 204, Condition B (N/A dummy loads)  
**Moisture Resistance:** MIL-STD-202, Method 106 (N/A dummy loads)

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

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