



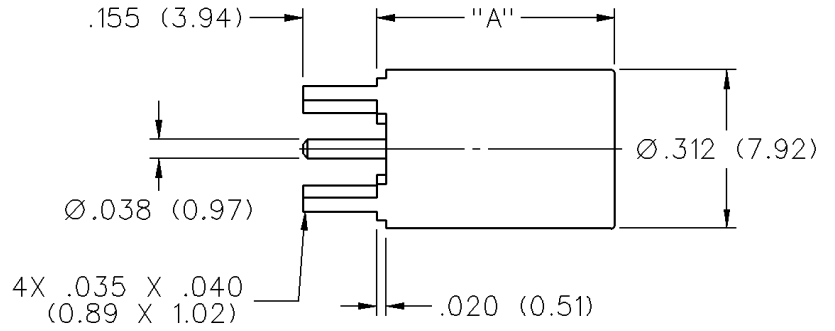
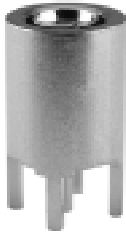
**THE DATASHEET OF**  
**131-3801-201**



# 50 Ohm SMB PC Mount Straight Plug Receptacle

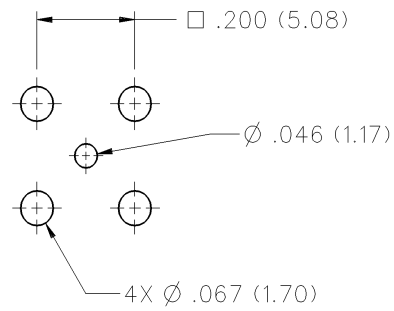


INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST



| "A"          | GOLD PLATED  | NICKEL PLATED |
|--------------|--------------|---------------|
| .395 (10.03) | 131-3801-201 | 131-3801-216  |

Mounting hole layout



# SMB - 50 Ohm Connectors



## Specifications

INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

### ELECTRICAL RATINGS

**Impedance:** 50 ohms

**Frequency Range:** Connectors ..... 0-4 GHz  
 Dummy loads ..... 0-1 GHz

**VSWR:** (f = GHz)

|  | Straight Cabled | Right Angle Cabled |
|--|-----------------|--------------------|
| RG-178 cable                             | 1.30 + .04f     | 1.45 + .06f        |
| RG-316, RG-58, and .086 semi-rigid cable | 1.25 + .04f     | 1.35 + .04f        |
| Adapters                                 | 1.20 + .04f     |                    |

Uncabled receptacles, dummy loads ..... N/A

**Working Voltage:** (Vrms maximum)<sup>†</sup>

| Connectors for Cable Type                                     | Sea Level | 70K Feet |
|---|-----------|----------|
| RG-178  | 250       | 60       |
| RG-316, RG-58, .086 semi-rigid uncabled receptacles, adapters | 335       | 85       |
| Dummy loads   |           | N/A      |

**Dielectric Withstanding Voltage:** (VRMS minimum at sea level)<sup>†</sup>

|   |      |
|---|------|
| Connectors for RG-178   | 750  |
| Connectors for RG-316, RG-58, .086 semi-rigid, uncabled receptacles, adapters | 1000 |
| Dummy loads   | N/A  |

**Corona Level:** (Volts minimum at 70,000 feet)<sup>†</sup>

|   |     |
|---|-----|
| Connectors for RG-178                         | 185 |
| Connectors for RG-316, RG-58, .086 semi-rigid | 250 |
| Uncabled receptacles, adapters, dummy loads   | N/A |

**Insertion Loss:** (dB maximum, tested at 1.5 GHz)

|  |         |
|--|---------|
| Straight cable connectors                      | 0.30 dB |
| Right angle cable connectors                   | 0.60 dB |
| Uncabled receptacles, adapters and dummy loads | 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     | 1.5                 |
| Outer contact (nickel plated connectors)                             | 2.5     | 3.5                 |
| 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, adapters and dummy loads | N/A    |

### RF High Potential Withstanding Voltage:

(Vrms minimum, tested at 4 and 7 MHz)<sup>†</sup>

|                                   |     |
|-----------------------------------|-----|
| Connectors for RG-178             | 500 |
| Connectors for RG-316, RG-58      | 700 |
| Uncabled receptacles and adapters | 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:** MIL-C-39012, Series SMB  
**Engagement/Disengagement Force:** 2 pounds min to 14 pounds maximum axial force

**Contact Retention:** 4 lbs. min axial force (captivated contacts)  
 1 inch-ounce min 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 RG-58           | 40                    | 16             |
| Connectors for .086 semi-rigid | 30                    | 16             |

\* or cable breaking strength whichever is less.

**Durability:** 500 cycles minimum

### ENVIRONMENTAL RATINGS

(Meets or exceeds the applicable paragraph of MIL-C-39012)

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

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

### 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

**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 OR Teflon PFA 340

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

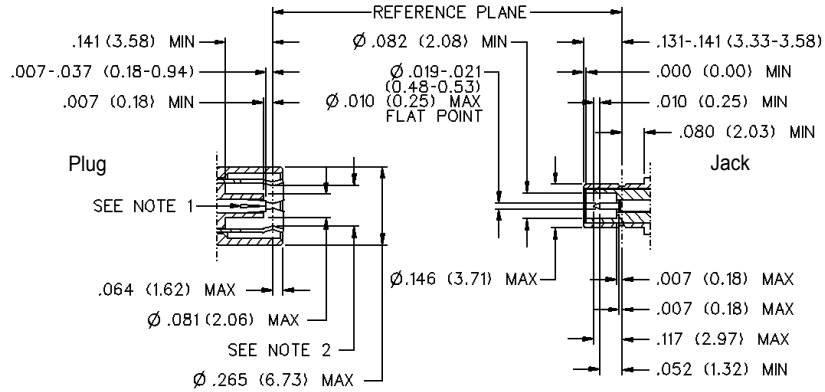
**Crimp Sleeves:** Copper per WW-T-799, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

**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

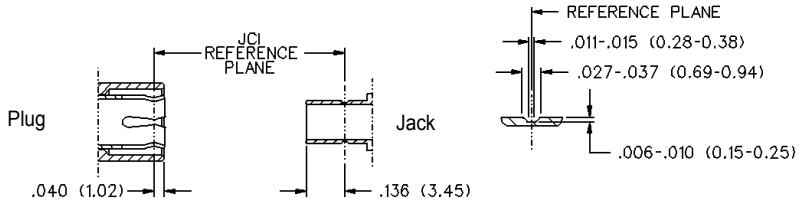
**Cover Rings:** Phosphor Bronze per QQ-B-750, gold plated per MIL-G-45204 .00001 min. or nickel plated per QQ-N-290.

<sup>†</sup>Avoid user injury due to misapplication. See safety advisory definitions inside front cover.  
 \*\* All gold plated parts include a .00005" min. nickel underplate barrier layer.

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





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



## Looking for pricing, stock, or lifecycle information?

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