SMA 50 Ohm
End Launch Jack Receptacle -
Round Contact

<table>
<thead>
<tr>
<th>VSWR &amp; FREQ. RANGE</th>
<th>BOARD THICKNESS</th>
<th>GOLD PLATED</th>
<th>NICKEL PLATED</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSWR: N/A 0-18 GHz</td>
<td>.031 (0.79)</td>
<td>142-0701-881</td>
<td>142-0701-886</td>
<td>.037 (0.94)</td>
<td>.104 (2.64)</td>
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SMA - 50 Ohm Connectors
Specifications

ELECTRICAL RATINGS

<table>
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<tr>
<th>Impedance: 50 ohms</th>
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**Frequency Range:**
- Dummy loads .................................................. 0.2 GHz
- Flexible cable connectors .................. 0.12 GHz
- Uncabled receptacles, RA semi-rigid and adapters ........ 0.18 GHz
- Straight semi-rigid cable connectors and field replaceable connectors ........................................ 0.26 GHz

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<th>VSWR: (f = GHz)</th>
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Straight Cabled Connectors: 1.20 + .02f
Right Angle Cabled Connectors: 1.20 + .03f

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<th>Insertion Loss: (dB maximum)</th>
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Straight flexible cable connectors and adapters ................ 0.06 dB (GHz), tested at 6 GHz
Right angle flexible cable connectors ................................ 0.15 dB (GHz), tested at 6 GHz
Straight semi-rigid cable connectors with contact .......... 0.03 dB (GHz), tested at 10 GHz
Right angle semi-rigid cable connectors .................. 0.05 dB (GHz), tested at 10 GHz
Straight low loss flexible cable connectors .................. 0.06 dB (GHz), tested at 1 GHz
Right angle low loss flexible cable connectors .......... 0.15 dB (GHz), tested at 1 GHz

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<th>RF Leakage: (dB minimum)</th>
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Flexible cable connectors, adapters and .141 semi-rigid connectors w/contact ........ -60 dB
Field replaceable connectors with contact and flexible replaceable with EMI Gasket .......... -70 dB
Two-way adapters ............................................. -90 dB
Uncabled receptacles, dummy loads .......................... N/A

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<th>RF High Potential Withstanding Voltage: (Vrms minimum)</th>
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Connectors for .141 semi-rigid connector .................. 335 Vrms
Connectors for RG-316, LMR-100, 195, 200 .................. 500 Vrms
Connectors for RG-58, RG-142, LMR-240, .086 semi-rigid, .141 semi-rigid cable w/o contact, uncabled receptacles ........ 670 Vrms

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<th>Power Rating (Dummy Load):</th>
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0.5 watt @ +25°C, derated to 0.25 watt @ +125°C

MECHANICAL RATINGS

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<tr>
<th>Engagement Design: MIL-C-39012, Series SMA</th>
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**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)

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<th>Cable Retention:</th>
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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, RG-142, LMR-240, .086 semi-rigid, .141 semi-rigid cable w/contact, uncabled receptacles ........ 60 N/A
Connectors for .141 semi-rigid ........... 60 N/A

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<th>Durability:</th>
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500 cycles minimum
100 cycles minimum for .141 semi-rigid connectors w/contact

ENVIRONMENTAL RATINGS

**Temperature Range:** 65°C to +165°C
**Thermal Shock:** MIL-STD-202, Method 107, Condition B
**Corrosion:** MIL-STD-202, Method 101, Condition B

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<th>Shock:</th>
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MIL-STD-202, Method 213, Condition I

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<th>Vibration:</th>
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MIL-STD-202, Method 204, Condition D

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<th>Moisture Resistance:</th>
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MIL-STD-202, Method 106

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

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MATERIA L SPECIFICATION S

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 or Tefzel per ASTM D 3159 or PFA 340 per ASTM
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 or brass per QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290
Mounting Hardware: Brass per QQ-B-626 or QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290
Seal Rings: Silicone rubber per ZZ-R-765
EMI Gaskets: Conductive silicone rubber per MIL-G-83528, Type M

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

NOTES
1. ID OF CONTACT TO MEET VSWR, CONTACT RESISTANCE AND INSERTION WITHDRAWAL FORCES WHEN MATED WITH DIA .0355-.0370 MALE PIN.
The **End Launch** connector is attached to the circuit board by inserting the board edge between the legs and soldering the legs and center conductor to pads on the board. For optimum high frequency performance, the connector to circuit board transition must be adjusted for low VSWR. To compensate for the transition from coax to microstrip, trace widths "A" and "B" must be adjusted based on circuit board thickness. When properly adjusted, this technique yields a low VSWR over a wide bandwidth.

The tabulated dimensions "A", "B", "C", "D", and "E" were determined experimentally to achieve low VSWR (typically less than 1.5 up to 18 GHz). The circuit board used for these tests was double-sided FR 4 with 1 oz. copper on both sides. The copper was left on the bottom of the board to create a ground plane for the 50 Ohm microstrip structure. While not all inclusive, these dimensions are given as reference information for selected **SMA End Launch** connectors. Further adjustments may be necessary depending upon the application. All dimensions are in inches.

Tabulated Dimensions "A", "B", "C" and "D" are symmetrical about the center line.