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>.042 (1.07)</td>
<td>142-0711-841</td>
<td>142-0711-846</td>
<td>.048 (1.22)</td>
<td>.062 (1.57)</td>
</tr>
</tbody>
</table>

Coupling proof torque 8 inch-pounds maximum without support wrench.
**SMA - 50 Ohm Connectors**

**Specifications**

---

### ELECTRICAL RATINGS

<table>
<thead>
<tr>
<th>Impedance:</th>
<th>50 ohms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range:</td>
<td>0.2 GHz</td>
</tr>
<tr>
<td>Dummy loads</td>
<td>0-12.4 GHz</td>
</tr>
<tr>
<td>Uncabled, RA semi-rigid adapters</td>
<td>0-18.0 GHz</td>
</tr>
<tr>
<td>Straight semi-rigid cable connectors and field replaceable connectors</td>
<td>0.265 GHz</td>
</tr>
</tbody>
</table>

**VSFR: (f = GHz)**

<table>
<thead>
<tr>
<th>Cabled Connectors</th>
<th>Cabled Connectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG-178 cable</td>
<td>1.20 + 0.02f</td>
</tr>
<tr>
<td>RG-316, LMR-100 cable</td>
<td>1.15 + 0.02f</td>
</tr>
<tr>
<td>RG-58, LMR-195 cable</td>
<td>1.15 + 0.02f</td>
</tr>
<tr>
<td>RG-142 cable</td>
<td>1.15 + 0.01f</td>
</tr>
<tr>
<td>LMR-200, LMR-240 cable</td>
<td>1.10 + 0.03f</td>
</tr>
<tr>
<td>.086 semi-rigid connector</td>
<td>1.07 + 0.008f</td>
</tr>
<tr>
<td>.141 semi-rigid connector</td>
<td>1.05 + 0.008f</td>
</tr>
<tr>
<td>.141 semi-rigid connector (w/o contact)</td>
<td>1.05 + 0.008f</td>
</tr>
<tr>
<td>Straight flexible cable connectors and adapters</td>
<td>0.06 f (GHz), tested at 6 GHz</td>
</tr>
<tr>
<td>Right angle flexible cable connectors</td>
<td>0.15 f (GHz), tested at 6 GHz</td>
</tr>
<tr>
<td>Straight semi-rigid cable connectors with contact</td>
<td>0.03 f (GHz), tested at 10 GHz</td>
</tr>
<tr>
<td>Right angle semi-rigid cable connectors</td>
<td>0.05 f (GHz), tested at 10 GHz</td>
</tr>
<tr>
<td>Straight semi-rigid cable connectors w/o contact</td>
<td>0.03 f (GHz), tested at 16 GHz</td>
</tr>
<tr>
<td>Right Angle low loss flexible cable connectors</td>
<td>0.15 f (GHz), tested at 1 GHz</td>
</tr>
</tbody>
</table>

**Insulation Resistance: 5000 megohms minimum**

**Contact Resistance:**

- Center contact (straight cabled connectors) | 3.0 \* || 4.0 \* |
- Center contact (right angle cabled connectors and adapters) | 4.0 \* || 6.0 \* |
- Field replaceable connectors | 6.0 \* || 8.0 \* |
- Outer contact (all connectors) | 2.0 \* || N/A |
- Braid to body (gold plated connectors) | 0.5 \* || N/A |
- Braid to body (nickel plated connectors) | 5.0 \* || N/A |

* N/A where the cable connector is used as a contact

**RF Leakage: (dB minimum, tested at 2.5 GHz)**

- Flexible cable connectors, adapters and .141 semi-rigid connectors w/o contact | -60 dB \* |
- Field replaceable w/o EMI gasket | -70 dB \* |
- .086 semi-rigid connectors and .141 semi-rigid connectors with contact and field replaceable with EMI Gasket | -90 dB |
- Two-way adapters | -90 dB |
- Uncabled receptacles, dummy loads | N/A |

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

- Connectors for RG-178 | 335 dB |
- Connectors for RG-316, LMR-100, 195, 200 | 500 dB |
- Connectors for RG-58, RG-142, LMR-240, .086 semi-rigid, .141 semi-rigid cable w/o contact, uncabled receptacles | 670 dB |
- Connectors for .141 semi-rigid with contact and adapters | 1000 dB |

**Power Rating (Dummy Load):** 0.5 watt @ +25°C, derated to 0.25 watt @ +125°C

---

### MECHANICAL RATINGS

<table>
<thead>
<tr>
<th>Engagement Design:</th>
<th>MIL-C-39012, Series SMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement/Disengagement Force:</td>
<td>2 inch-pounds maximum</td>
</tr>
<tr>
<td>Mating Torque:</td>
<td>7 to 10 inch-pounds</td>
</tr>
<tr>
<td>Bulkhead Mounting Nut Torque:</td>
<td>15 inch-pounds</td>
</tr>
<tr>
<td>Coupling Proof Torque:</td>
<td>15 inch-pounds minimum</td>
</tr>
<tr>
<td>Coupling Nut Retention:</td>
<td>60 pounds minimum</td>
</tr>
<tr>
<td>Contact Retention:</td>
<td>6 lbs. minimum axial force (captivated contacts)</td>
</tr>
<tr>
<td></td>
<td>4 inch-ounce minimum torque (uncaptured receptacles)</td>
</tr>
<tr>
<td></td>
<td>*Or cable breaking strength whichever is less.</td>
</tr>
</tbody>
</table>

**Durability: 500 cycles minimum**

- 100 cycles minimum for .141 semi-rigid connectors w/o contact

**Shock:** MIL-STD-202, Method 213, Condition I

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

**Moisture Resistance:** MIL-STD-202, Method 106

---

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

---

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

<table>
<thead>
<tr>
<th>Temperature Range:</th>
<th>-65°C to +165°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Shock:</td>
<td>MIL-STD-202, Method 107, Condition B</td>
</tr>
<tr>
<td>Corrosion:</td>
<td>MIL-STD-202, Method 101, Condition B</td>
</tr>
</tbody>
</table>

---

**Cable Retention:**

| Connectors for RG-178 | 10 lbs \* || N/A |
| Connectors for RG-316, LMR-100 | 20 lbs \* || N/A |
| Connectors for LMR-195, 200 | 30 lbs \* || N/A |
| Connectors for RG-58, LMR-240 | 40 lbs \* || N/A |
| Connectors for RG-142 | 45 lbs \* || N/A |
| Connectors for .086 semi-rigid | 60 lbs \* || 16 lbs |
| Connectors for .141 semi-rigid | 80 lbs \* || 55 lbs |

**ECCS, Inc.**

299 Johnson Avenue SW, Waseca, MN 56093 USA • 800.247.8256 • +1 507.833.8822 • cinchconnectivity.com
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 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.

### SMA End Launch Specifications

#### ELECTRICAL RATINGS
- **Impedance:** 50 Ohms
- **Frequency Range:** 0-18 GHz
- **VSWR:** Dependent upon application
- **Working Voltage (VRMS max.):** 335 @ Sea Level, 85 @ 70K Feet
- **Dielectric Withstanding Voltage (VRMS min. at sea level):** 1000
- **Corona Level (Volts min. at 70,000 feet):** 250
- **Insulation Resistance:** 5000 megohms min
- **Contact Resistance (milliohms max.):** 3.0 Initial, 4.0 after environmental
- **RF High Potential Withstanding Voltage (VRMS min. tested at 4 and 7 MHz):** 670

#### MECHANICAL RATINGS
- **Engagement Design:** MIL-C-39012, Series SMA
- **Mating Torque:** 7 to 10 inch-pounds
- **Coupling Proof Torque:** 15 inch-pounds min.
- **Contact Nut Retention Force:** 6 lbs min. axial force, 4 inch-ounce min. torque
- **Durability:** 500 cycles min.

---

### Surface Mount Versions Available!

| Part Number | Base Width | Board Thick | "A" | "B" | "C" | "D" | "E"
|-------------|------------|-------------|-----|-----|-----|-----|-----
| 142-0701-801/806 | .375 | .062 | .103 | .090 | .250 | .440 | .200
| 142-0701-851/861 | .375 | .062 | .103 | .090 | .250 | .440 | .200
| 142-0701-871/876 | .375 | .062 | .103 | .090 | .250 | .440 | .200
| 142-0711-821/826 | .250 | .062 | .103 | .070 | .170 | .380 | .165
| 142-0711-871/876 | .375 | .047 | .083 | .075 | .250 | .440 | .200
| 142-0711-881/886 | .375 | .047 | .083 | .075 | .250 | .440 | .200
| 142-0701-881/886 | .375 | .031 | .050 | .045 | .250 | .440 | .200

**ENVIRONMENTAL RATINGS:**
- **Temperature Range:** -65° to + 165° C
- **Thermal Shock:** MIL-STD-202, Method 107, Condition B
- **Corrosion:** MIL-STD-202, Method 101, Condition B
- **Shock:** MIL-STD-303, Method 213, Condition I
- **Vibration:** MIL-STD-202, Method 204, Condition D
- **Moisture Resistance:** MIL-STD-202, Method 106

**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
- **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

*All gold plated parts include a .00005” min. nickel underplate barrier layer.
Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Cinch Connectivity Solutions:
142-0711-846