THE PERFORMANCE LEADER IN MICROWAVE CONNECTORS

1.0 mm (W) DC TO 110 GHz CONNECTORS

Low VSWR
Low Insertion Loss
Low RF Leakage
High Temperature
Rugged & Durable
Excellent Repeatability

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1.0 mm (W) DC to 110 GHz high-frequency connectors from Southwest Microwave include field-replaceable 2- and 4-hole Flange-mount and standard or metric Thread-in Connectors, Direct-solder Cable Connectors, clamp-on End Launch Connectors, and the first 1.0 mm Vertical Launch Connector.

### Specifications

**Electrical:**
- Mode Free Through 110 GHz
- Low VSWR: DC to 110 GHz .......... 1.25:1 max
- Low RF Leakage ≤ 100 dB
- Low Insertion Loss: < 0.6 dB

**Temperature:**
- -55°C to + 165°C

**Materials / Construction:**
- Materials and finishes vary by product type.
  - For data, refer to website or request Product Drawings and Specifications for desired connector.

### Interface Standards

#### 1.0 mm (W) Jack (Socket Contact)

![1.0 mm (W) Jack (Socket Contact)]

<table>
<thead>
<tr>
<th>LTR</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>inch</td>
<td>mm</td>
</tr>
<tr>
<td>A</td>
<td>.1161</td>
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</tr>
<tr>
<td>B</td>
<td>.0937</td>
<td>2.38</td>
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<tr>
<td>C</td>
<td>.0393</td>
<td>0.997</td>
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<tr>
<td>D</td>
<td>.063</td>
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<tr>
<td>E</td>
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<td>0</td>
</tr>
<tr>
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<td>0.45</td>
</tr>
<tr>
<td>G</td>
<td>.158</td>
<td>4.01</td>
</tr>
<tr>
<td>H</td>
<td>.157 HEX</td>
<td>4.0 HEX</td>
</tr>
<tr>
<td>J</td>
<td>.01697</td>
<td>0.431</td>
</tr>
</tbody>
</table>

#### 1.0 mm (W) Plug (Pin Contact)

![1.0 mm (W) Plug (Pin Contact)]

<table>
<thead>
<tr>
<th>LTR</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>inch</td>
<td>mm</td>
</tr>
<tr>
<td>A</td>
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<td>4.15</td>
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<tr>
<td>B</td>
<td>.09340</td>
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<tr>
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<td>0.997</td>
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<tr>
<td>D</td>
<td>.0496</td>
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<td>.1118</td>
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<tr>
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<td>G</td>
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<td>0.433</td>
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<tr>
<td>J</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>K</td>
<td>.01697</td>
<td>0.431</td>
</tr>
</tbody>
</table>
Data shown represents two 1.0 mm (W) 9 mil pin connectors tested back-to-back. To extract VSWR data for a single connector, take the square root of the VSWR data point and divide the insertion loss data point by two.

VSWR = √1.283 = 1.13:1 maximum for each connector, as shown.
Contact Southwest Microwave for performance specifications for all other 1.0 mm (W) connectors.
FLANGE MOUNT AND THREAD-IN CONNECTORS

**FLANGE JACK (FEMALE): 4 HOLE .375 SQUARE**

- Connector No.: 2412-01SF
- Accepts Pin Dia.: .009
- Rear Thread Type: M7 X 0.75-6G (METRIC)

**FLANGE PLUG (MALE): 4 HOLE .375 SQUARE**

- Connector No.: 2411-01SF
- Accepts Pin Dia.: .009
- Rear Thread Type: 2.03-36 UNS-2A OR M7 X 0.75-6G

**FLANGE JACK (FEMALE): 2 HOLE .400 X .180**

- Connector No.: 2414-01SF
- Accepts Pin Dia.: .009
- Rear Thread Type: M7 X 0.75-6G (METRIC)

**FLANGE PLUG (MALE): 2 HOLE .400 X .180**

- Connector No.: 2413-01SF
- Accepts Pin Dia.: .009
- Rear Thread Type: 2.03-36 UNS-2A OR M7 X 0.75-6G

**THREAD-IN: STEP THREAD JACK (FEMALE): STANDARD OR METRIC REAR THREAD**

- Connector No.: 2420-01SF
- Accepts Pin Dia.: .009
- Rear Thread Type: .250-36 UNS-2A (STD)

- Connector No.: 2420-05SF
- Accepts Pin Dia.: .009
- Rear Thread Type: M7 X 0.75-6G (METRIC)

**THREAD-IN: STEP THREAD JACK (MALE): STANDARD OR METRIC REAR THREAD**

- Connector No.: 2421-01SF
- Accepts Pin Dia.: .009
- Rear Thread Type: .250-36 UNS-2A (STD)

- Connector No.: 2421-03SF
- Accepts Pin Dia.: .009
- Rear Thread Type: M7 X 0.75-6G (METRIC)
**ADAPTERS**

1.85 mm (V) to 1.0 mm (W) Adapters (67 GHz)
- 1.85 mm (F) to 1.0 mm (F): 24210-00SF
- 1.85 mm (F) to 1.0 mm (M): 24220-00SF
- 1.85 mm (M) to 1.0 mm (F): 24230-00SF
- 1.85 mm (M) to 1.0 mm (M): 24240-00SF

1.0 mm (W) to 0.9 SuperMini (67 GHz)
- 1.0 mm (F) to 0.9 SuperMini (M): 245220-00SF
- 1.0 mm (F) to 0.9 SuperMini (F): 245310-00SF

1.0 mm (W) to SSBP Coax Contacts (110 GHz)
- 1.0 mm (F) to SSBP Coax Contacts (F): 195020-01G
- 1.0 mm (F) to SSBP Coax Contacts (M): 195110-01G

1.0 mm (W) Adapters (110 GHz)
- 1.0 mm (F) to 1.0 mm (M): 2430-00SF
- 1.0 mm (M) to 1.0 mm (M): 2431-00SF
- 1.0 mm (F) to 1.0 mm (F): 2432-00SF

**END LAUNCH CONNECTORS (CLAMP-ON)**

<table>
<thead>
<tr>
<th>Pin Diameter</th>
<th>Dielectric</th>
<th>Profile</th>
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</thead>
<tbody>
<tr>
<td>Dim A Board Pin</td>
<td>Dim B Internal</td>
<td>Dim C</td>
</tr>
<tr>
<td>.005</td>
<td>.009</td>
<td>.0290</td>
</tr>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

Southwest Microwave can supply complete cable assemblies (0.047 cable) to simplify high-performance interface to our 1.0 mm (W) Flange Mount, Thread-in and End Launch connectors. Contact the factory for more information.
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<table>
<thead>
<tr>
<th>Cable Center Conductor Dia.</th>
<th>Cable</th>
<th>Attachment Type</th>
<th>Cable Connector No.</th>
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<tr>
<td>.0113</td>
<td>.047 SC Flex</td>
<td>Direct Solder</td>
<td>19370-01G</td>
</tr>
<tr>
<td>.0080</td>
<td>.031 Semi-Rigid</td>
<td>Direct Solder</td>
<td>19370-03G</td>
</tr>
<tr>
<td>.0113</td>
<td>.047 SC Flex</td>
<td>Direct Solder</td>
<td>19270-01G</td>
</tr>
</tbody>
</table>
INDUSTRY’S FIRST SOLDERLESS COMPRESSION-MOUNT
1.0 mm VERTICAL LAUNCH CONNECTOR

VSWR of 1.35:1 max across 70 to 105 GHz and a VSWR of 1.6:1 max across the complete 110 GHz bandwidth. Data represents two 1.0 mm connectors mounted on 5 mil RO3003 test-board.

1.0 mm (W) Jack (F) 2-hole, .390 Long – 24359-001

DESIGN ASSISTANCE
• Printed circuit board layout and connector part number recommendation
• 3D models for mechanical layout
• HFSS models (version 18.0 or newer) for EM simulations upon request and availability

MATERIALS AND CONSTRUCTION
• Connector Housing: CRES Alloy UNS S30300 per ASTM A582, Passivated per ASTM A967
• Contact: BeCu, UNS C17300 per ASTM B196, Au plated per MIL-G-45204 or ASTM B488
• Center Contact Capture: Ultem 1000 per ASTM D5205
Since 1981, Southwest Microwave has been providing a broad range of high-performance microwave connectors and adapters, currently available from DC to 110 GHz, for hi-rel / space, defense, instrumentation, integrated-circuit and PCB evaluation applications. Built in the USA to rigorous performance and quality standards, Southwest Microwave interconnect solutions offers the industry’s lowest VSWR, insertion loss and RF leakage.

Low VSWR
Low Insertion Loss
Low RF Leakage
High Temperature
Rugged & Durable
Excellent Repeatability