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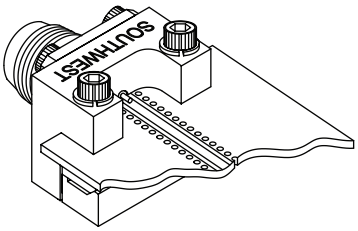
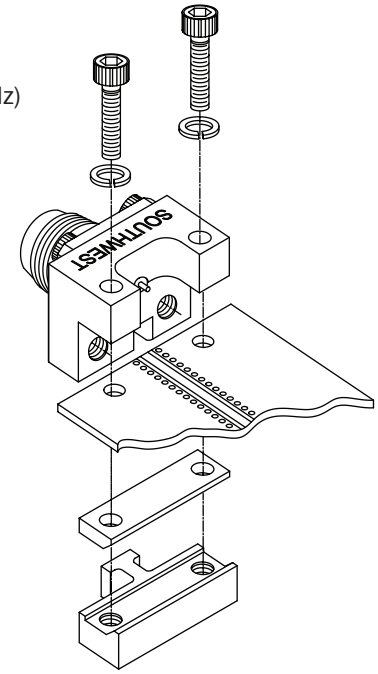
Introduction

Southwest Microwave's High Performance End Launch Connectors are designed to provide Low VSWR, wideband response to 50 GHz for single-layer or multi-layer printed circuit boards where the microwave layer is on top. They are ideally suited for high frequency chip set evaluation/demo boards, test fixtures and board characterization.



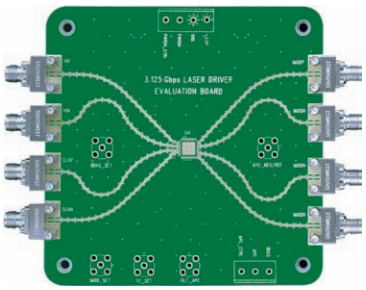


Features:

- Available in: **SMA** (27 GHz), **2.92 mm** (40 GHz) and **2.40 mm** (50 GHz)
- Multiple launch configurations to optimize match to circuit
- Optimum performance when board launch geometry is grounded coplanar (CPWG) or top ground microstrip
- Unique clamping mechanism accommodates a wide range of board thicknesses (up to .110") while providing a continuous ground connection between end launch and circuit board.
- Launch overhang that allows ground to be picked up close to the launch point
- Universal, robust & reusable
- No soldering required
- Connectors ship fully assembled (board not included)

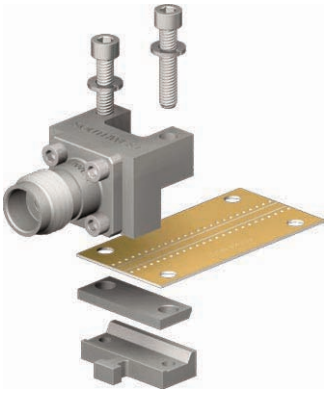
Examples of Applications

- Chip set evaluation demo boards.
- Board characterization.
- Internal board launch (not limited to perimeter board edge).
- Custom flanges available.

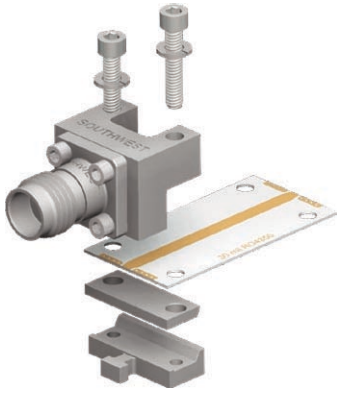


Specifications

Applications



Grounded Coplanar



Microstrip with Top Ground Launch

Launch Design Assistance Available.

Electrical:

- Mode Free Through:
  27.0 GHz (SMA)
  40.0 GHz (2.92 mm)
  50.0 GHz (2.40 mm)
- Low VSWR
- Low Insertion Loss

Materials / Construction:

Connector:

- Housing: Stainless Steel, CRES Alloy UNS-S30300 Per ASTM A 582, Passivated Per ASTM A 967
- Contact: Beryllium Copper (BeCu), UNS-C17300 Per ASTM B 196/197, Gold Plated Per MIL-G-45204 or ASTM B 488
- Center Contact Capture: Rigid Bead Capture with Ultem 1000 Per ASTM D 5205
- Virgin TFE Fluorocarbon Per ASTM D 1710 and ASTM D 1457 (SMA only)
- KEL-F Per ASTM D 1430 (2.92 mm & 2.40 mm only)
- Connector Interfaces:
  SMA – Per MIL-STD-348, Figs. 310-1 and 310-2
  2.92 mm – Per MIL-STD-348, Figs. 324-1 and 324-2
  2.40 mm – Per MIL-STD-348, Figs. 323-1 and 323-2

Transition Block & Clamp Plates:

- Housing: Brass Alloy UNS-C48500 Per ASTM-B36, Nickel Plate Per ASTM 2404B
- Transition Pin: BeCu Per UNS-C17300 Per ASTM B 196/197, Gold Plate Per MIL-G-45204 or ASTM B 488
- Dielectric: Virgin TFE Fluorocarbon Per ASTM D 1710 and ASTM D 1457,
- Fasteners: Per ANSI B18.3

End Launch Connectors

Super SMA (27 GHz)

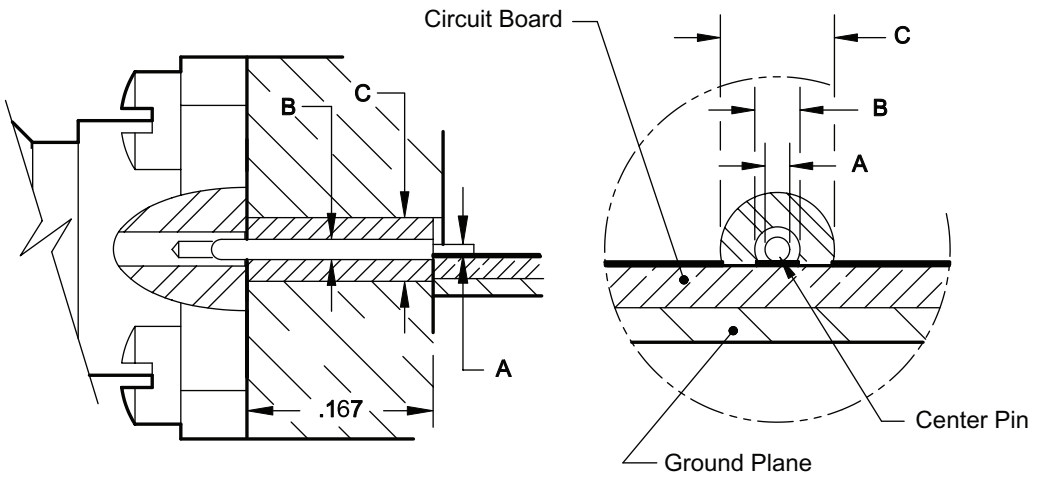
PIN DIAMETER		DIELECTRIC DIA.	MODEL NO.	
Dim A Board Pin	Dim B Internal	Dim C	Female	Male
.010	.020	.0635	292-04A-5	293-01A-5
.007	.015	.0480	292-05A-5	293-02A-5
.007	.012	.0390	292-06A-5	293-03A-5
.005	.009	.0290	292-07A-5	293-04A-5

2.92 mm (40 GHz)

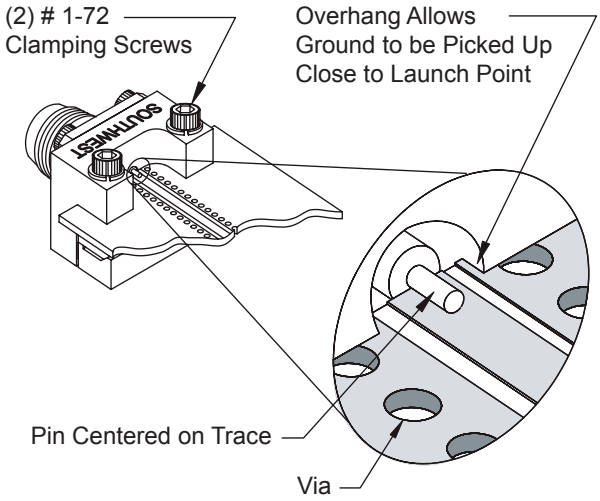
PIN DIAMETER		DIELECTRIC DIA.	MODEL NO.	
Dim A Board Pin	Dim B Internal	Dim C	Female	Male
.010	.020	.0635	1092-03A-5	1093-01A-5
.007	.015	.0480	1092-02A-5	1093-02A-5
.007	.012	.0390	1092-04A-5	1093-03A-5
.005	.009	.0290	1092-01A-5	1093-04A-5

2.40 mm (50 GHz)

PIN DIAMETER		DIELECTRIC DIA.	MODEL NO.	
Dim A Board Pin	Dim B Internal	Dim C	Female	Male
.010	.020	.0635	1492-02A-5	1493-01A-5
.007	.015	.0480	1492-01A-5	1493-02A-5
.007	.012	.0390	1492-03A-5	1493-03A-5
.005	.009	.0290	1492-04A-5	1493-04A-5



All Southwest Microwave Models are Suitable for Space / Hi-Rel Applications (see page 109).



Installation Procedure

Step 1: Mount the end launch connector on the board in the desired position.

Step 2: Ensure the launch pin is centered on the trace.

Step 3: Ensure the transition block is tight against the board.

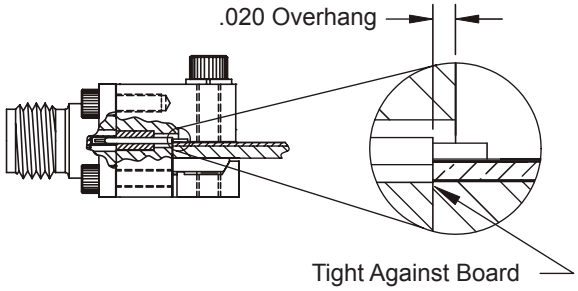
Step 4: Tighten the 1-72 mounting screws until the connector is secured.

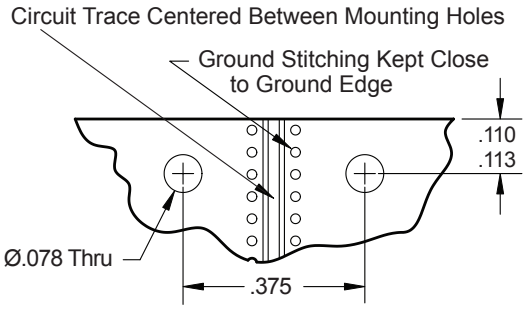
Steps 5–7 *(Optional)*

Step 5: *(Optional)* Solder the launch pin to the trace. (Note: Be sure the solder flows the entire length of the launch pin/trace contact area.)

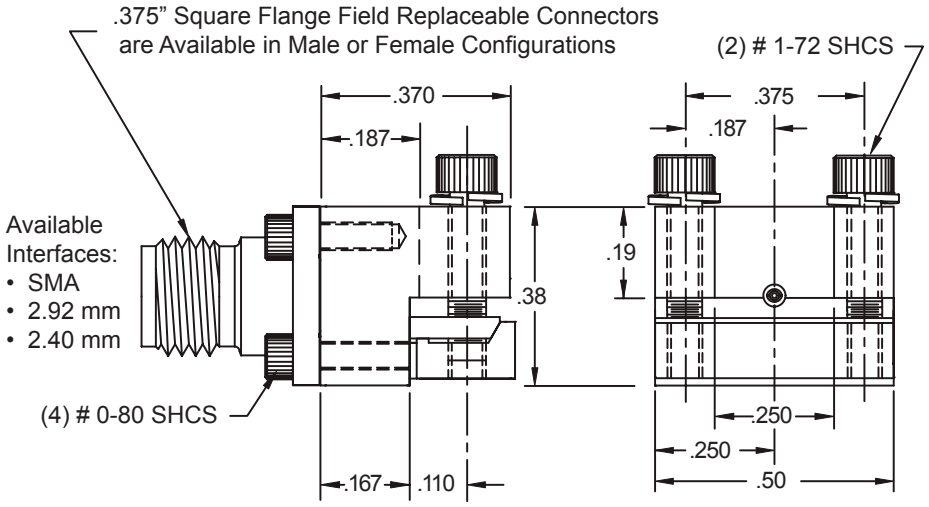
Step 6: *(Optional)* Remove any excess solder. (Note: Excess solder will affect performance.)

Step 7: *(Optional)* Clean any flux or other residue from around the solder joint.



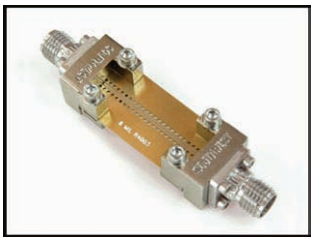


Dimensions:



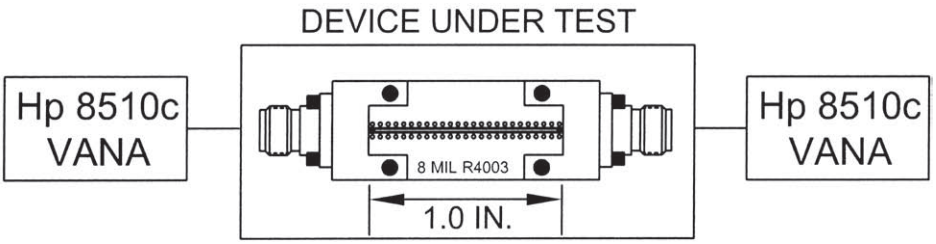
Coplanar Test Data

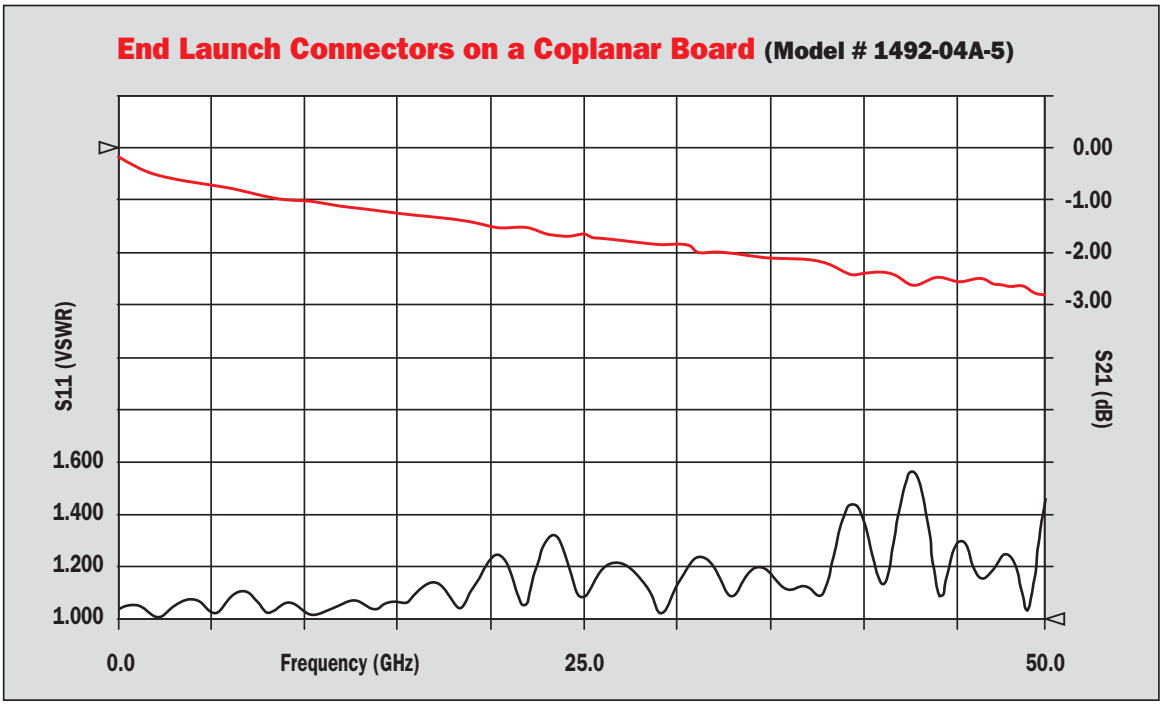
End Launch Connectors on a Coplanar Board



Below are test results to 50 GHz for two 1492-04A-5 end launch connectors on a .008" Rogers RO4003 coplanar board. The plot shows both VSWR and insertion loss for the test board and the two connectors. Similar boards are used for the other launch geometries.

Model No. 1492-04A-5

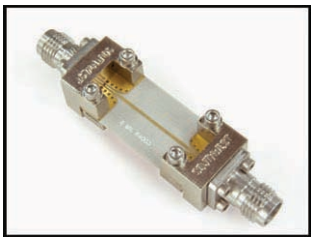




1.58 is the maximum for two 1492-04A-5 End Launch Connectors on a SMI Microstrip test board using .008" Rogers RO4003 coplanar board.

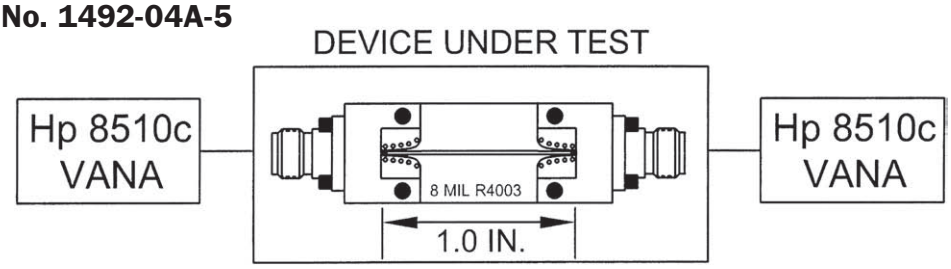
Microstrip Test Data

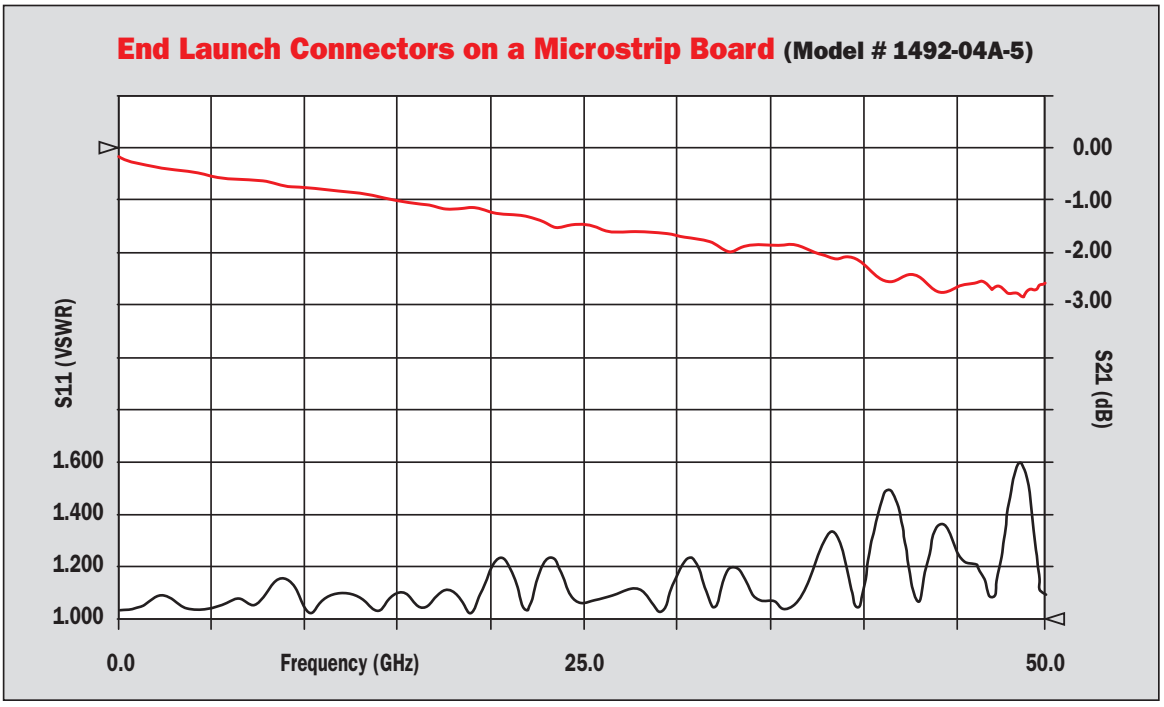
End Launch Connectors on a Microstrip Board



Below are test results to 50 GHz for two 1492-04A-5 end launch connectors on a .008" Rogers RO4003 microstrip board with top ground launch. The plot shows both VSWR and insertion loss for the test board and the two connectors. This is not a standard test board.

Model No. 1492-04A-5





1.60 is the maximum for two 1492-04A-5 End Launch Connectors on a SMI Microstrip test board using .008" Rogers RO4003 microstrip board.