SOUTHWEST MICROWAVE

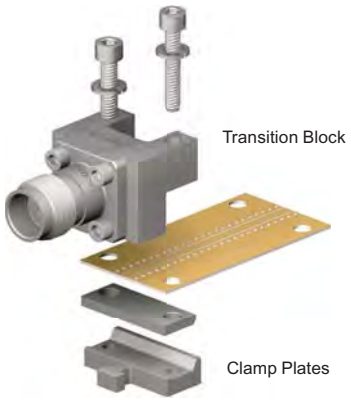
End Launch *Connector Series*

Index

Specifications

Applications

Standard 3/8" Square Flange Connector



Grounded Coplanar

Microstrip with Top Ground Launch

Board Launch Design Assistance Available. Contact Factory.

Electrical:

- Mode Free Through:
  - 27.0 GHz (SMA)
  - 40.0 GHz (2.92 mm)
  - 50.0 GHz (2.40 mm)
  - 67.0 GHz (1.85 mm)
- Low VSWR
- Low Insertion Loss

Materials / Construction:

Connector:

(see appropriate connector section for materials & construction)

Transition Block & Clamp Plates:

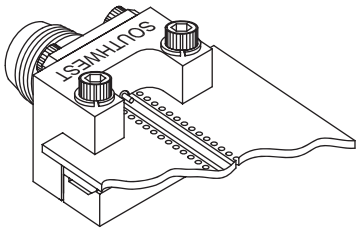
- Housing: Brass Alloy UNS C36000 Per ASTM B16, Nickel Plate Per ASTM 2404B
- Transition Pin: Beryllium Copper (BeCu) Per UNS C36000 Per ASTM B16, Gold Plate Per MIL-G-45204 or ASTM B488
- Dielectric: Virgin PTFE Fluorocarbon Per ASTM D1710
- Fasteners: Per ANSI B18.3

SOUTHWEST MICROWAVE

End Launch Connectors

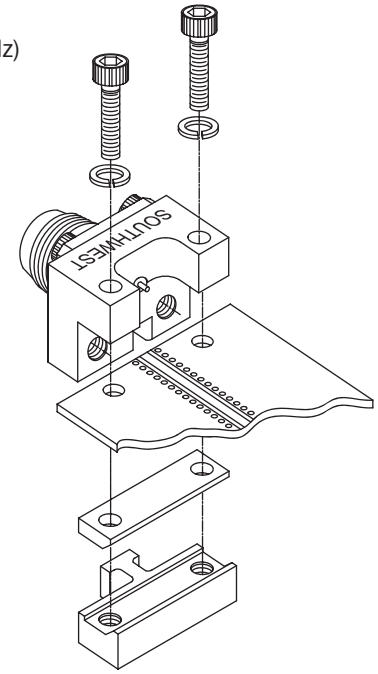
Introduction

Southwest Microwave's High Performance End Launch Connectors are designed to provide Low VSWR, wideband response to 67 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.



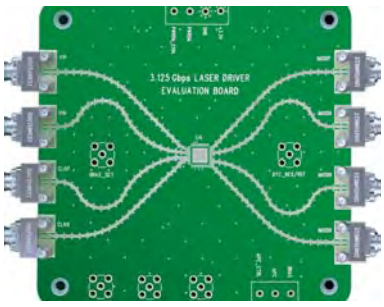
Features:

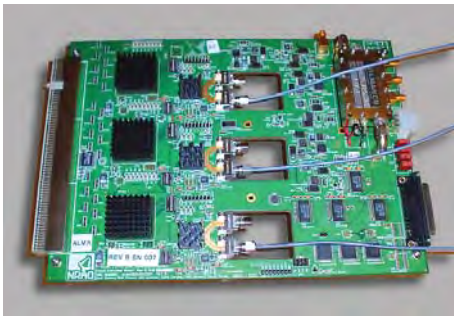
- Now available in: **SMA** (27 GHz), **2.92 mm** (40 GHz), **2.40 mm** (50 GHz) and **1.85 mm** (67 GHz)
- Multiple launch configurations to optimize match to circuit
- Optimum performance when board launch geometry is grounded coplanar (CPWG) or top ground microstrip
- Unique clamping mechanism accommodates 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)



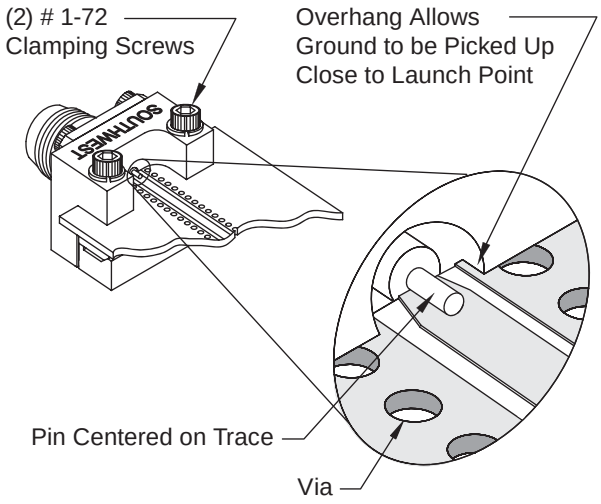
Examples of Applications

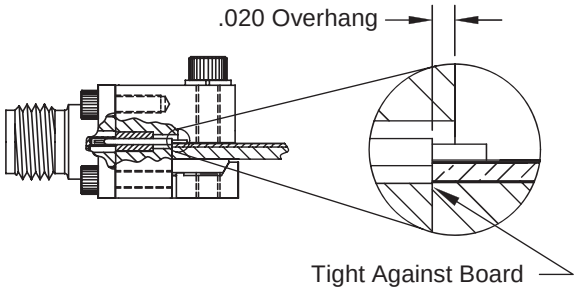
- Chip set evaluation demo boards.
- Board characterization.
- Internal board launch (not limited to perimeter board edge).
- Custom flanges available.





End Launch Connectors
Installation





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.

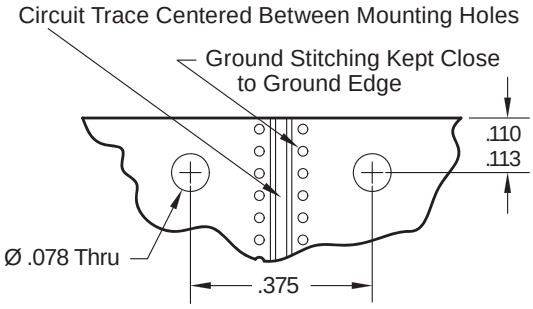
Step 4: Tighten the 1-72 mounting screws until the connector is secured.

Steps 5–7 (Optional)

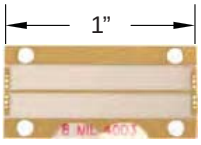
Step 5: **(Optional)** Solder the launch pin to the trace. (Note: Be sure the solder flows the entire length of the launch pin/trace contact area.)

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.

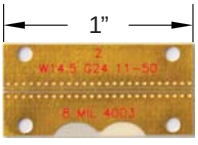


End Launch Test Boards:

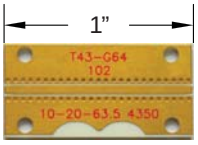


Microstrip Test Board
8 mil, RO4003
Board No. **B4003-8M-***

* Boards vary by maximum frequency. Contact factory for specific versions.



GCPWG Test Board
8 mil, RO4003
Board No. **B4003-8C-***



GCPWG Test Board
30 mil, RO4350
Board No. **B4350-30C-***

Contact factory for pricing and availability.
Board launch design assistance available. Contact factory.

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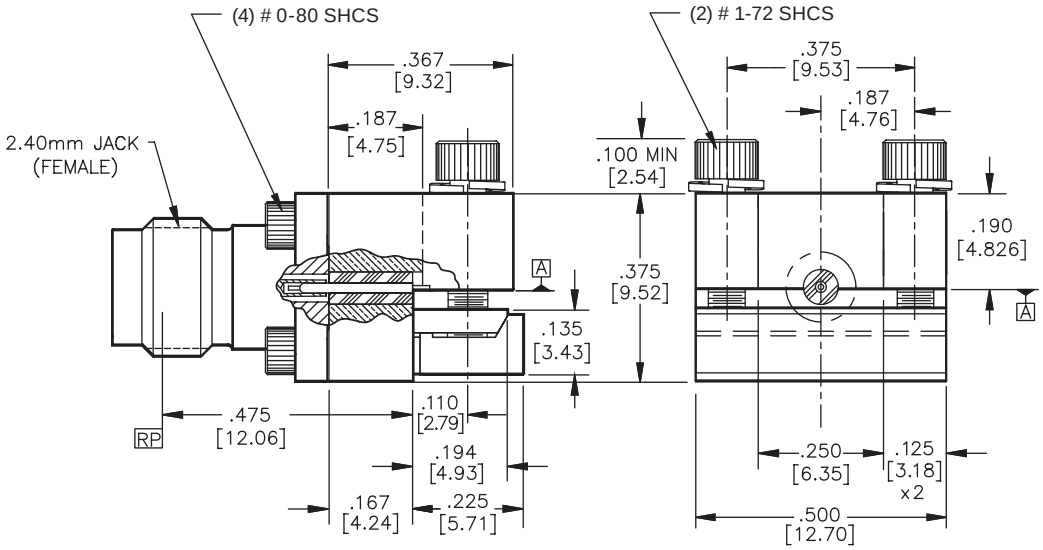
End Launch Connectors
Dimensions

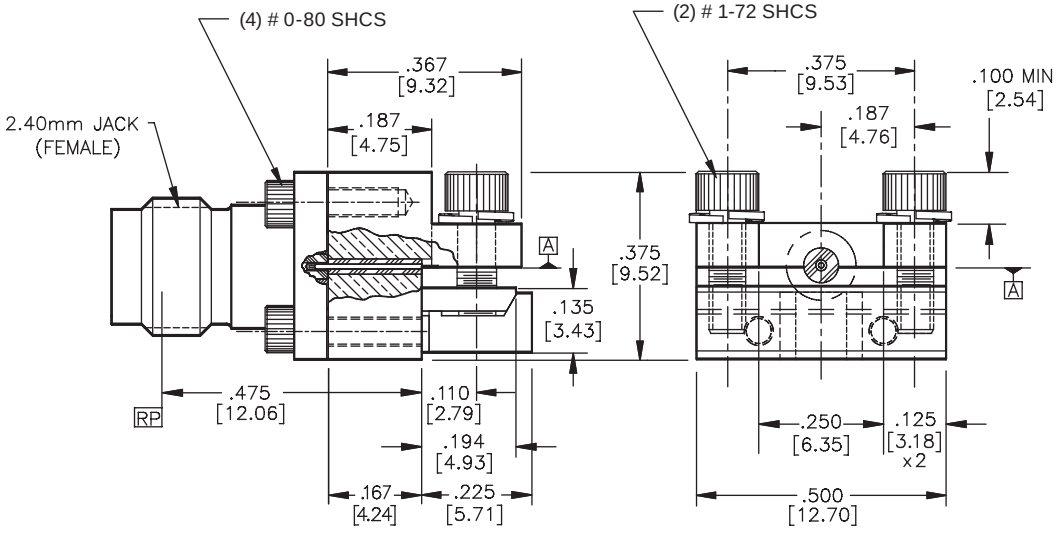
End Launch Connector Dimensions

Field Replaceable .375” Square Flange Connectors are Available in Male or Female Configurations.

Standard Profile Connectors



Low Profile Connectors



End Launch Connectors

Super SMA
(27 GHz)

Pin Diameter		Dielectric Dia.	Standard Profile		Low Profile	
Dim A Board Pin	Dim B Internal	Dim C	Female	Male	Female	Male
.010	.020	.0635	292-04A-**5**	293-01A-**5**	292-04A-**6**	293-01A-**6**
.007	.015	.0480	292-05A-**5**	293-02A-**5**	292-05A-**6**	293-02A-**6**
.007	.012	.0390	292-06A-**5**	293-03A-**5**	292-06A-**6**	293-03A-**6**
.005	.009	.0290	292-07A-**5**	293-04A-**5**	292-07A-**6**	293-04A-**6**

2.92 mm
(40 GHz)

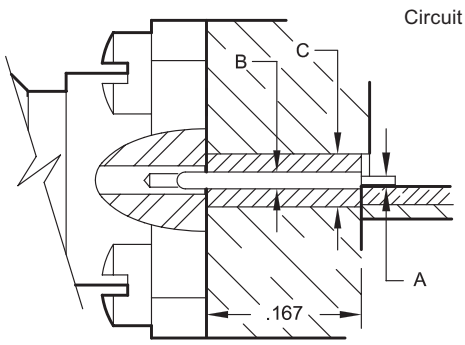
Pin Diameter		Dielectric Dia.	Standard Profile		Low Profile	
Dim A Board Pin	Dim B Internal	Dim C	Female	Male	Female	Male
.010	.020	.0635	1092-03A-**5**	1093-01A-**5**	1092-03A-**6**	1093-01A-**6**
.007	.015	.0480	1092-02A-**5**	1093-02A-**5**	1092-02A-**6**	1093-02A-**6**
.007	.012	.0390	1092-04A-**5**	1093-03A-**5**	1092-04A-**6**	1093-03A-**6**
.005	.009	.0290	1092-01A-**5**	1093-04A-**5**	1092-01A-**6**	1093-04A-**6**

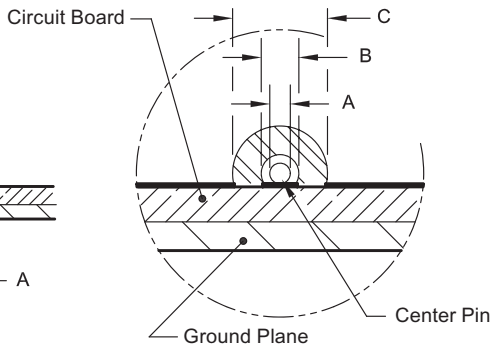
2.40 mm
(50 GHz)

Pin Diameter		Dielectric Dia.	Standard Profile		Low Profile	
Dim A Board Pin	Dim B Internal	Dim C	Female	Male	Female	Male
.010	.020	.0635	1492-02A-**5**	1493-01A-**5**	1492-02A-**6**	1493-01A-**6**
.007	.015	.0480	1492-01A-**5**	1493-02A-**5**	1492-01A-**6**	1493-02A-**6**
.007	.012	.0390	1492-03A-**5**	1493-03A-**5**	1492-03A-**6**	1493-03A-**6**
.005	.009	.0290	1492-04A-**5**	1493-04A-**5**	1492-04A-**6**	1493-04A-**6**

1.85 mm
(67 GHz)

Pin Diameter		Dielectric Dia.	Standard Profile		Low Profile	
Dim A Board Pin	Dim B Internal	Dim C	Female	Male	Female	Male
.007	.012	.0390	1892-03A-**5**	1893-03A-**5**	1892-03A-**6**	1893-03A-**6**
.005	.009	.0290	1892-04A-**5**	1893-04A-**5**	1892-04A-**6**	1893-04A-**6**



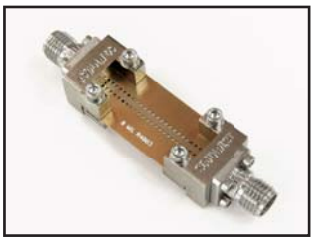


SOUTHWEST MICROWAVE

End Launch Connectors
Coplanar Test Data

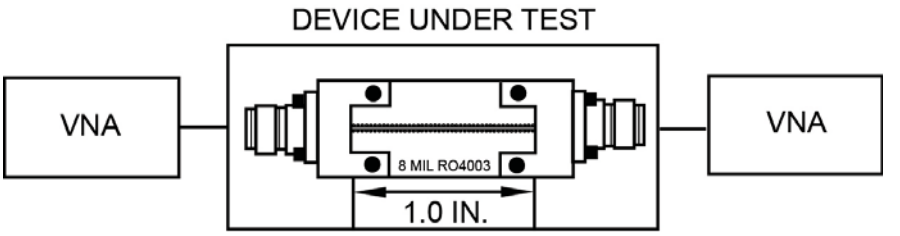
Coplanar Test Data

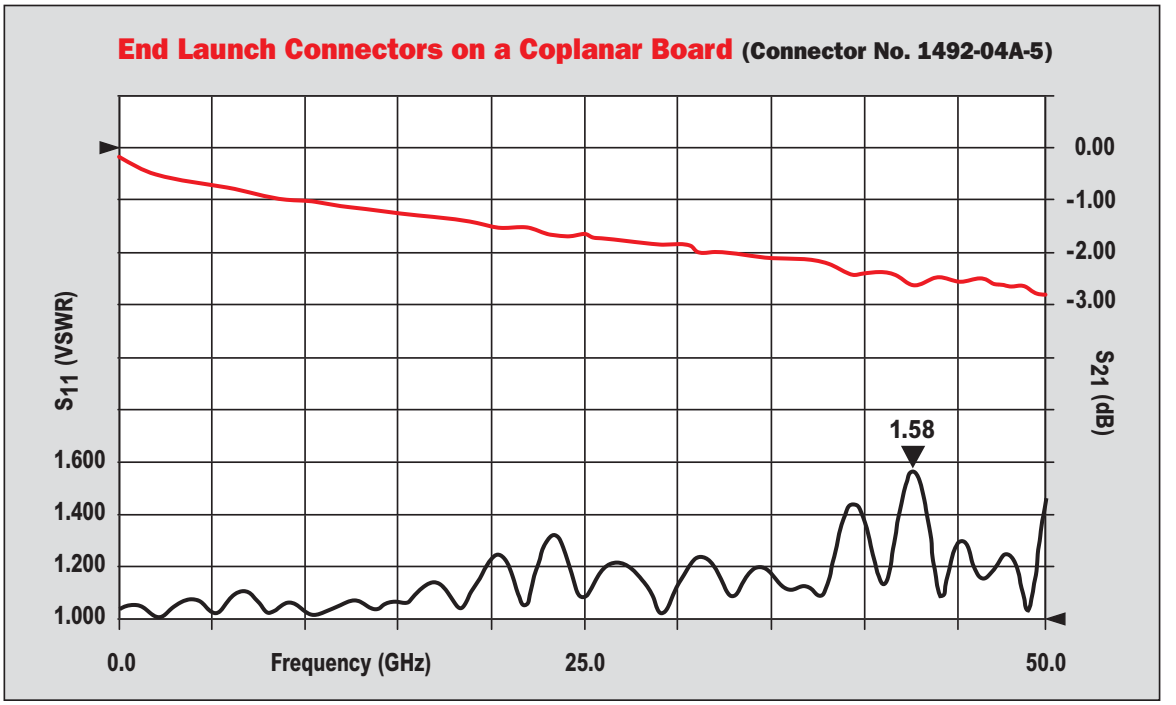
End Launch Connectors on a Coplanar Board



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.

Connector No. 1492-04A-5





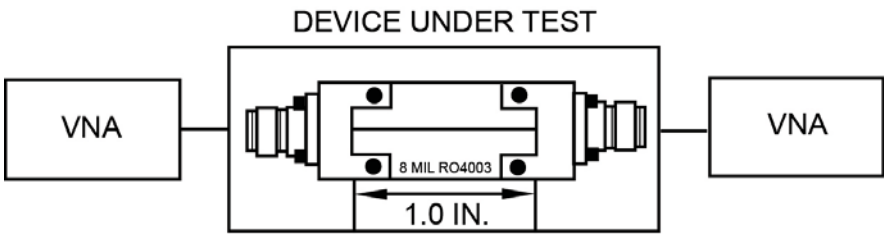
1.58 is the maximum for two 1492-04A-5 End Launch Connectors on a SMI Microstrip test board using .008" Rogers RO4003 coplanar board.

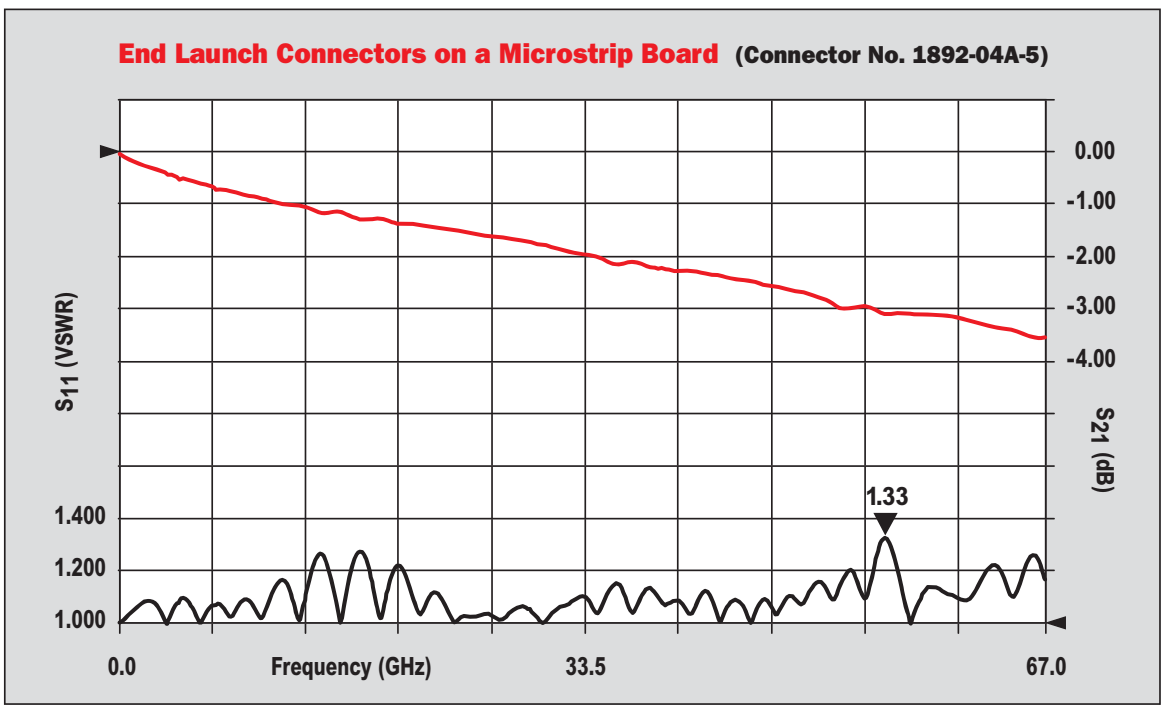
Microstrip Test Data

End Launch Connectors on a Microstrip Board

Below are test results to 67 GHz for two 1892-04A-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.

Connector No. 1892-04A-5





1.33 is the maximum for two 1892-04A-5 End Launch Connectors on a SMI microstrip test board using .008" Rogers RO4003 microstrip board.