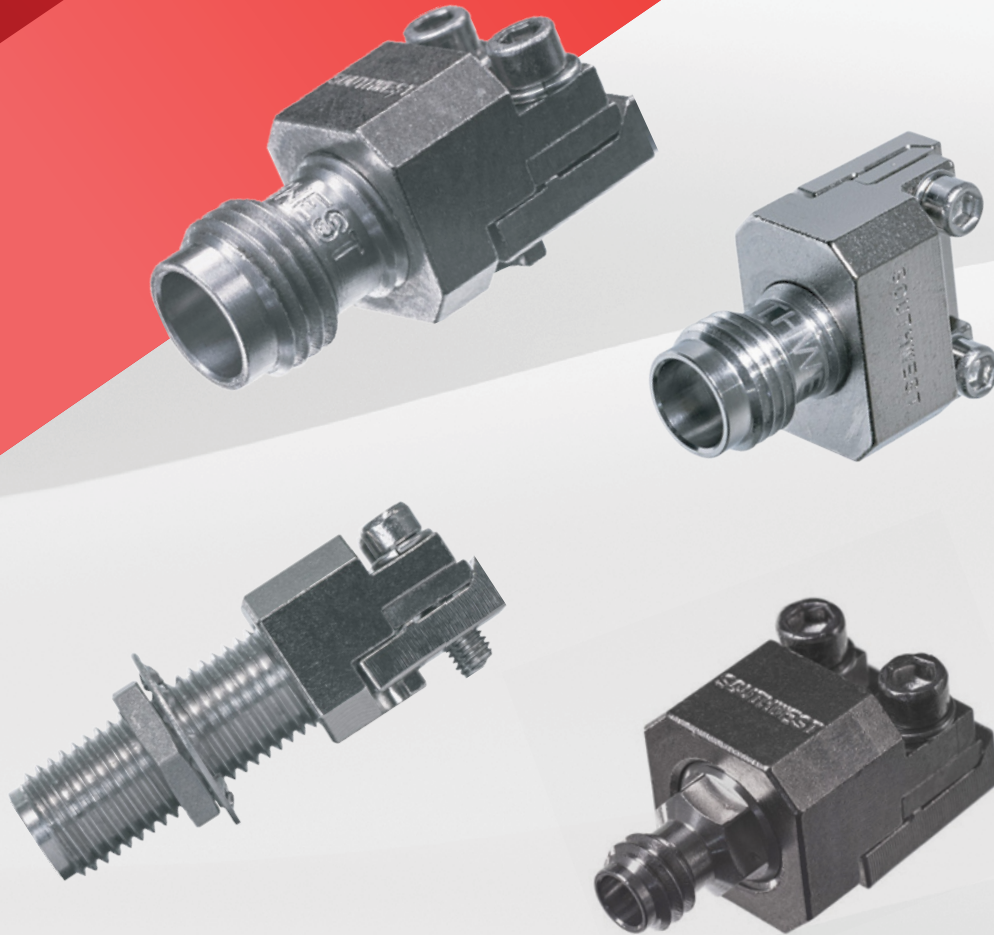




**SOUTHWEST
MICROWAVE**

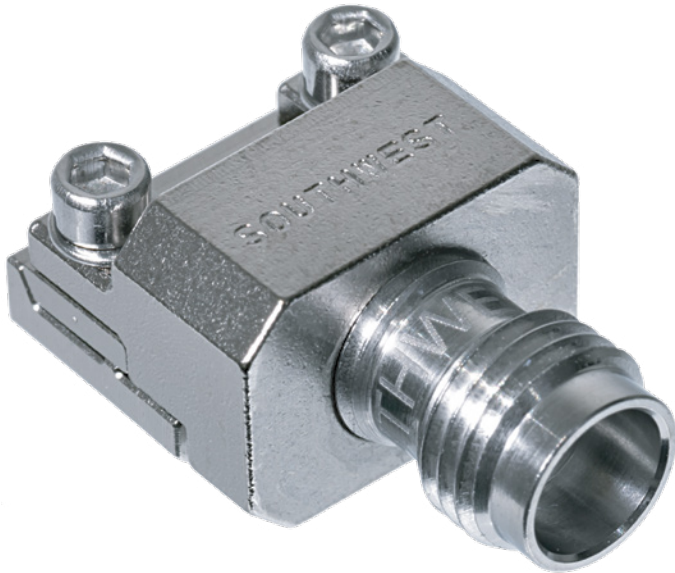
End Launch Connectors DC to 125 GHz

THE PERFORMANCE LEADER IN
MICROWAVE CONNECTORS



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

INTRODUCTION



Southwest Microwave is the original innovator of the solderless, clamp-on end launch connector concept, producing the widest range of options available today. These connectors, available in multiple configurations, have been leading the microwave and digital industries for 20 years and are designed to provide the lowest VSWR, mode-free wide responses up to 125 GHz for single and multilayer microstrip or grounded coplanar printed circuit boards.

These end launch connectors feature a unique two-piece bottom clamp to accommodate any board thickness up to 300 mils for effective grounding between the connector and the circuit board. The connector pin is designed with an interference fit to the circuit board trace eliminating the need for soldering. Combining the bottom clamp with the solderless pin offers ease of removal and reusability.

Newer models include thread-ins for enhanced robustness and narrow block, reducing footprint by 30% for applications where space and weight are limited.

FEATURES

- Available in SMA (27 GHz), 2.92 mm (40 GHz), 2.40 mm (50 GHz), 1.85 mm (67 GHz), 1.35 mm (90 GHz) and 1.0 mm (125 GHz)
- Male and female options along with narrow body and bulkhead feed-through
- Multiple launch configurations for best match to circuit layout
- Unique clamping mechanism accommodates board thicknesses up to .300" (7.62 mm)
- Three transition sizes allow for the best match to a wide variety of microwave substrates
- Soldering the launch pin to signal trace is optional
- Robust, reusable and repairable
- Optional space qualification



DESIGN AND TEST ASSISTANCE

Standalone connector samples are available or can be attached to Southwest Microwave's test boards

3D models for mechanical layouts

Printed circuit board connector launch designs and connector part number recommendations for stack-ups

Connector Encrypted HFSS models (version 18.0 or newer) for EM simulations

SPECIFICATIONS

Materials

RF Connector Materials	
Connector Housing	Passivated CRES Alloy
Contact	Gold Plated BeCu
Contact Capture Bead	SMA, 1.35 mm, 1.0 mm – Ultem 1000 2.92 mm, 2.40 mm – Ultem 1000 & Kei-F 1.85 mm – Ultem 1000 & PTFE
Dielectric	SMA only - PTFE
Connector Fasteners	#0-80 SHCS
Transition Block Materials	
Block & Clamping Plates	Ni Plated Brass Alloy
Pin	Gold Plated BeCu
Dielectric	PTFE
PCB Fasteners	#1-72 SHCS

Mechanical

RF Connector Durability	500 minimum
PCB Mating Cycles	100
Board Thicknesses	.005" (.127 mm) to .300" (7.62 mm)

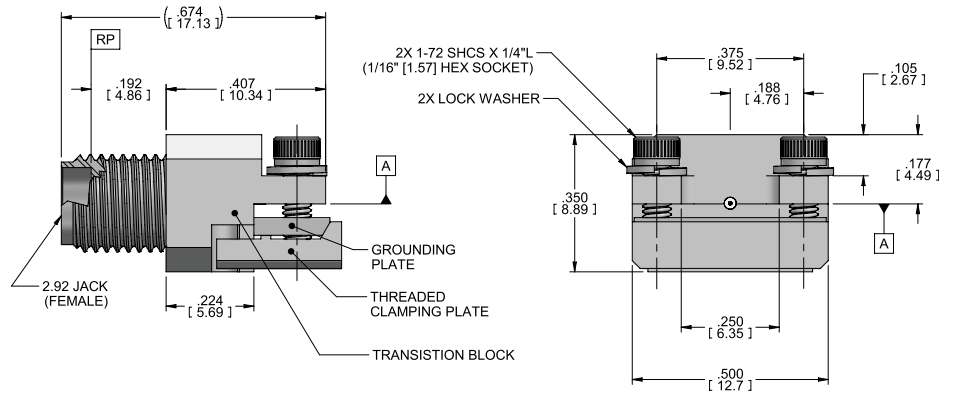
Electrical

Frequency	DC to 125 GHz
Impedance	50 Ohms
Low Insertion Loss	
Low VSWR	

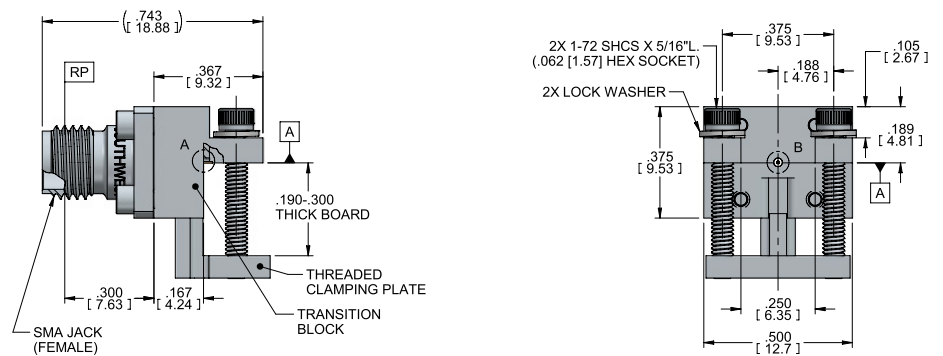
Environmental

Temperature	SMA -65 to +165 °C 2.92 mm and 2.40 mm -55 to +135 °C 1.85 mm, 1.35 mm and 1.0 mm -55 to +165 °C
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xxxx-xA-12
Standard Block, Thread-In
 Up to .065 Board Thickness

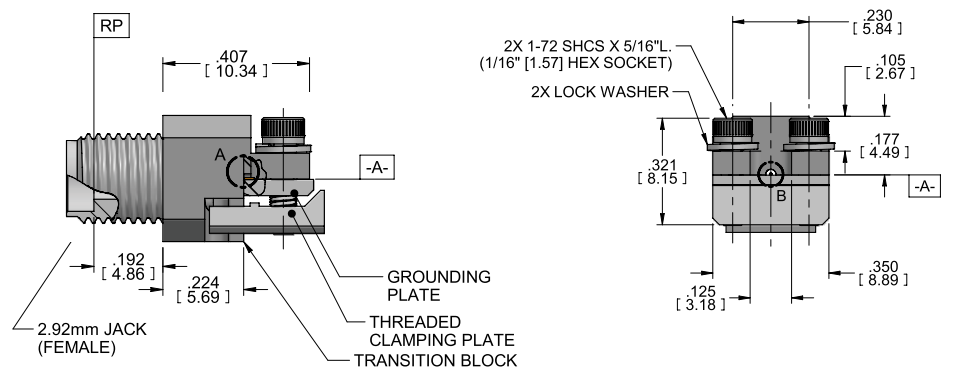


xxxx-xA-7
Standard Block
 .090 to .210 Thick Board



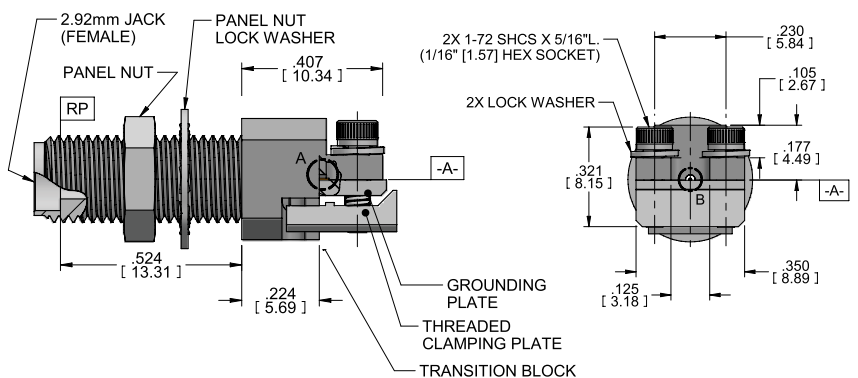
xxxx-xA-8
Standard Block
 .190 to .300 Thick Board

xxxx-xA-9
Narrow Block, Thread-In
 Up to .065 Board Thickness



xxxx-xA-14
Narrow Block, Thread-In
 .040 to .090 Thick Board

xxxx-xA-11
Extended Length
 Up to .065 Board Thickness



xxxx-xA-13
Narrow Block, Extended Length
 .040 to .110 Thick Board

CONNECTOR MODELS

Super SMA (27 GHz)

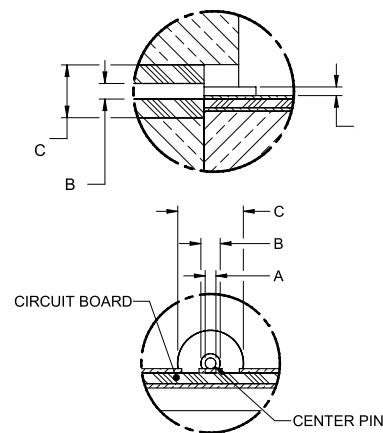
Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standard Block .500" Thread-In (Please contact us for standard block -6 models.)		PCB Thickness	Standard Block .500"		PCB Thickness	Narrow Block .350" Thread-In	
			Female	Male		Female	Male		Female	Male
.010	.0635	up to .065	292-04A-12 292-04Z-6 (non-magnetic)	293-01A-12	.090 to .210 .190 to .300	292-04A-7 292-04A-8	293-01A-7 293-01A-8	up to .065 .040 to .090 .040 to .090	292-04A-9 292-04A-14 292-14A-13	293-01A-9 293-01A-14 293-01A-14
.007	.039	up to .065	292-06A-12	293-03A-12	.090 to .210 .190 to .300	292-06A-7 292-06A-8	293-03A-7 293-03A-8	up to .065 .040 to .090 .040 to .090	292-06A-9 292-06A-14 292-16A-13	293-03A-9 293-03A-14 293-03A-14
.005	.029	up to .065	292-07A-12	293-04A-12	.090 to .210 .190 to .300	292-07A-7 292-07A-8	293-04A-7 293-04A-8	up to .065 .040 to .090	292-07A-9 292-07A-14	293-04A-9 293-04A-14

2.92 mm (40 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standard Block .500" Thread-In (Please contact us for standard block -6 models.)		PCB Thickness	Standard Block .500"		PCB Thickness	Standard Block .500" Thread-In, Extended Length	
			Female	Male		Female	Male		Female	Male
.010	.0635	up to .065	1092-03A-12	1093-01A-12	.090 to .210 .190 to .300	1092-03A-7 1092-03A-8	1093-01A-7 1093-01A-8	up to .065	Contact Us	Contact Us
.007	.039	up to .065	1092-04A-12	1093-03A-12	.090 to .210 .190 to .300	1092-04A-7 1092-04A-8	1093-03A-7 1093-03A-8	up to .065	Contact Us	Contact Us
.005	.029	up to .065	1092-01A-12	1093-04A-12	.090 to .210 .190 to .300	1092-01A-7 1092-01A-8	1093-04A-7 1093-04A-8	up to .065	1092-01A-15	Contact Us

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Narrow Block .350"		PCB Thickness	Extended Length, Narrow Block .350"	
			Female	Male		Female	Male
.010	.0635	up to .065 .40 to .090	1092-03A-9 1092-03A-14	1093-01A-9 1093-01A-14	up to .065 .040 to .090	Contact Us	Contact Us
.007	.039	up to .065 .40 to .090	1092-04A-9 1092-04A-14	1093-03A-9 1093-03A-14	up to .065 .040 to .090	Contact Us	Contact Us
.005	.029	up to .065 .40 to .090	1092-01A-9 1092-01A-14	1093-04A-9 1093-04A-14	.up to .065 .040 to .090	1092-01A-11 1092-01A-13	Contact Us

DIMENSIONS A, B, C



CONNECTOR MODELS

2.40 mm (50 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standard Block .500" Thread-In (Please contact us for standard block -6 models.)		PCB Thickness	Standard Block .500"		PCB Thickness	Narrow Block .350" Thread-In	
			Dim A	Dim C		Inches	Female		Male	Inches
.010	.0635	up to .065	1492-02A-12	1493-01A-12	.090 to .210 .190 to .300	1492-02A-7 1492-02A-8	1493-01A-7 1493-01A-8	up to .065 .040 to .090	1492-02A-9 1492-02A-14	1493-02A-9 1493-02A-14
.007	.039	up to .065	1492-03A-12	1493-03A-12	.090 to .210 .190 to .300	1492-03A-7 1492-03A-8	1493-03A-7 1493-03A-8	up to .065 .040 to .090	1492-03A-9 1492-03A-14	1493-03A-9 1493-03A-14
.005	.029	up to .065	1492-04A-12 *1492-04Z-5 (non-magnetic)	1493-04A-12	.090 to .210 .190 to .300	1492-04A-7 1492-04A-8	1493-04A-7 1493-04A-8	up to .065 .040 to .090	1492-04A-9 1492-04A-14	1493-04A-9 1493-04A-14

*1492-04Z-5 is a non-standard end launch using a 4-hole flange connector and a high -profile standard block.

1.85 mm (67 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standard Block .500" Thread-In (Please contact us for standard block -6 models.)		PCB Thickness	Standard Block .500"		PCB Thickness	Narrow Block .350" Thread-In	
			Dim A	Dim C		Inches	Female		Male	Inches
.007	.039	up to .065	1892-03A-12	1893-03A-12	.090 to .210 .190 to .300	1892-03A-7 1892-03A-8	1893-03A-7 1893-03A-8	up to .065 .040 to .090	1892-03A-9 1892-03A-14	1893-03A-9 1893-03A-14
.005	.029	up to .065	1892-04A-12	1893-04A-12	.090 to .210 .190 to .300	1892-04A-7 1892-04A-8	1893-04A-7 1893-04A-8	up to .065 .040 to .090	1892-04A-9 1892-04A-14	1893-04A-9 1893-04A-14

1.35 mm (90 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standard Block .500" Thread-In	PCB Thickness	Narrow Block .350" Thread-In
			Female		Inches
.005	.029	up to .065	2292-04A-12	up to .065	2292-04A-9

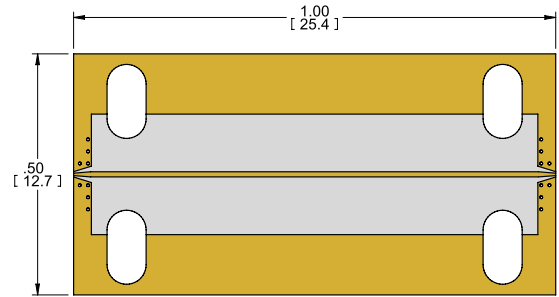
1.00 mm (125 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standard Block .500" Thread-In (Please contact us for standard block -6 models.)		PCB Thickness	Standard Block .500"		PCB Thickness	Narrow Block .350" Thread-In	
			Dim A	Dim C		Inches	Female		Male	Inches
.005	.029	up to .065	2492-04A-12	2493-04A-12	.090 to .210 .190 to .300	2492-04A-7 2492-04A-8	2493-04A-7 2493-04A-8	up to .065 .040 to .090	2492-04A-9 2492-04A-14	2493-04A-9

END LAUNCH TEST BOARDS

Board Type	27 GHz (p/n)	40 GHz (p/n)	50 GHz (p/n)	67 GHz (p/n)	110 GHz (p/n)
.005" R03003 Microstrip					B3003-5M -110
.008" R04003 Microstrip	B4003-8M-27	B4003-8M-40	B4003-8M-50	B4003-8M-67	
.008" R04003 GCPW	B4003-8C-27	B4003-8C-40	B4003-8C-50	B4003-8C-67	
.030" R04350 GCPW	B4350-30C-27	B4350-30C-40	B4350-30C-50		
.005" EZ-IO-F Microstrip					BEZOF-SM-110

Note: All test boards are one inch long and are suitable for either the standard or narrow body connector.



INSTALLATION

Step 1: Mount End Launch Assembly on board in desired position.

Step 2: Make sure launch pin is centered on trace.

Step 3: Insure launch adapter is tight against edge of board.

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

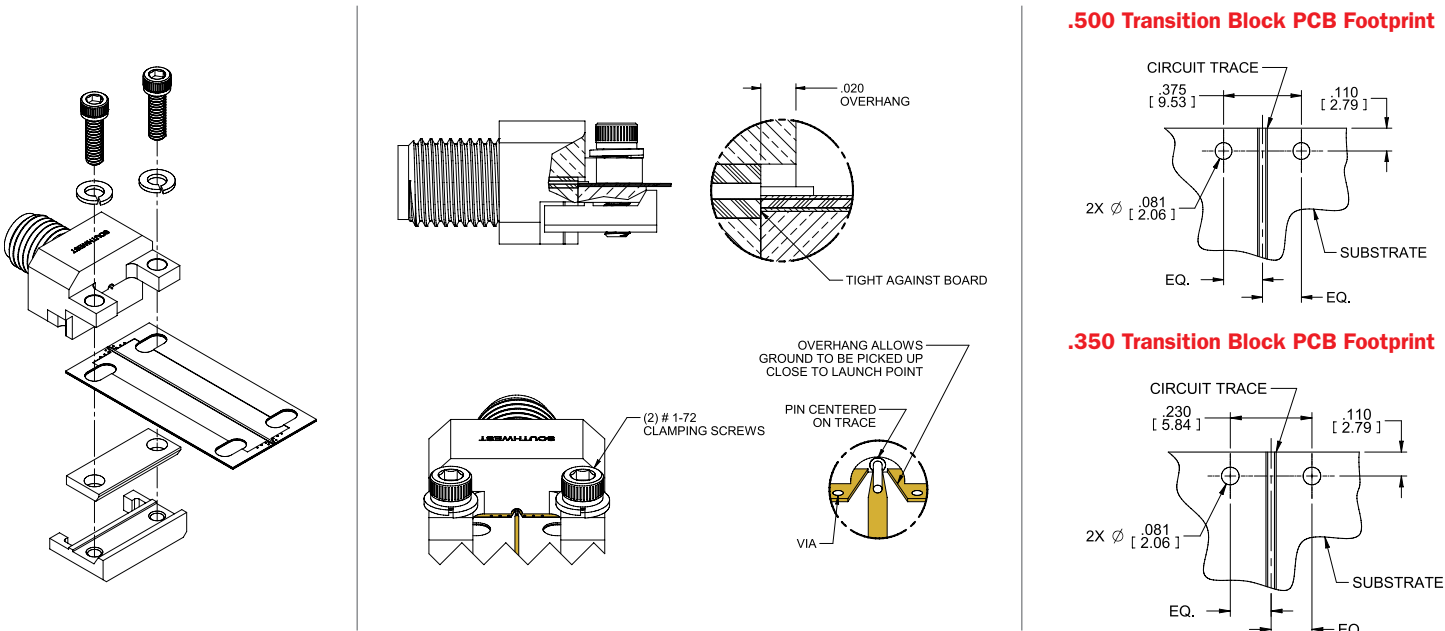
(Note: The amount of torque is board material dependent, should not exceed more than 2 lbs per inch.)

The following steps are optional:

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

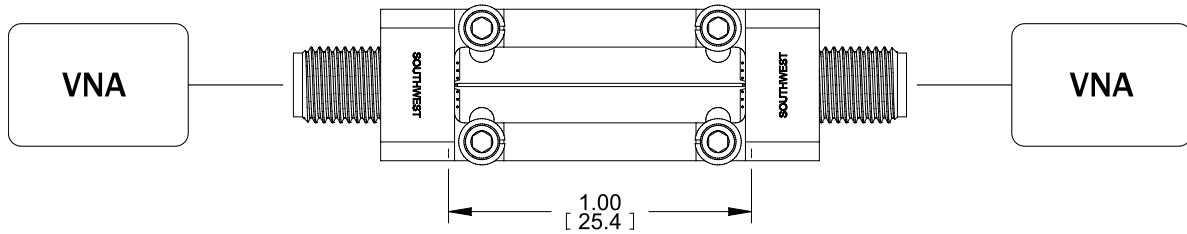
Step 6: Remove any excess solder. (Note: Excess solder will affect performance.)

Step 7: Clean any flux or other residue from around solder joint.



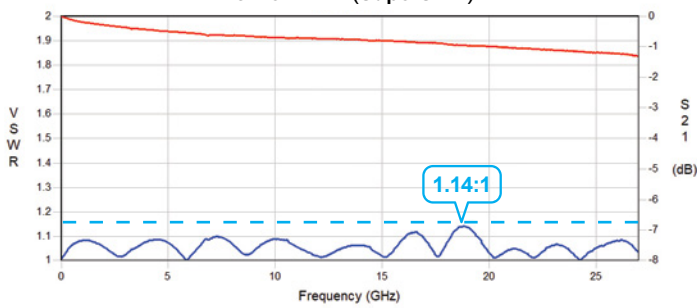
TYPICAL TEST DATA

DEVICE UNDER TEST

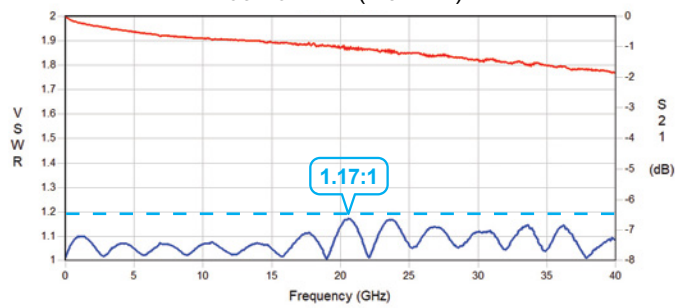


Typical test data shown below represent two End Launch Connectors mounted on a 1-inch long test board as shown in the set-up above.

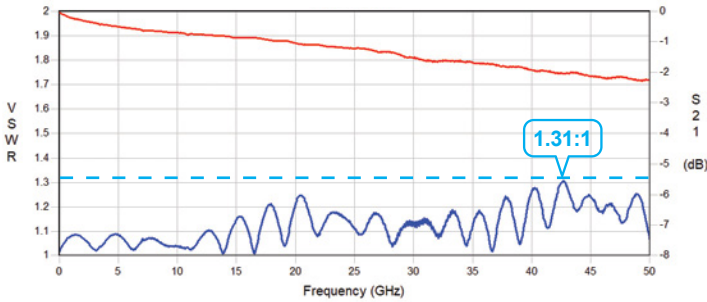
292-07A-12 (SuperSMA)



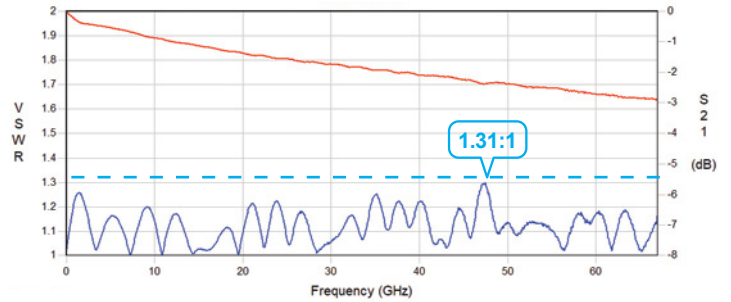
1092-01A-12 (2.92mm)



1492-04A-12 (2.40mm)



1892-04A-12 (1.85mm)



2492-04A-12 (1.0mm)

