THE PERFORMANCE LEADER IN MICROWAVE CONNECTORS



END LAUNCH CONNECTORS DC TO 110 GHz



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 110 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 (K) (40 GHz), 2.40 mm (50 GHz), 1.85 mm (V) (67 GHz) and 1.0 mm (W) (110 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 launch pin to signal trace is optional
- · Robust, reusable and repairable
- Optional space qualification



Design and Test Assistance:

Standalone connector samples 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, 1.0 mm – Ultem 1000 2.92 mm, 2.40 mm – Ultem 1000 & Kel-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 110 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 and 1.0 mm -55 to +165 °C

OUTLINE DRAWINGS

xxxx-xA-12 Standard Block, Thread-In Up to .100 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 .110 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

SuperSMA (27 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standar .500", T (For standa models, pleas	rd Block hread-In ard block -6 se contact us)	PCB Thickness	Standard Block .500°		PCB Thickness	Narrow .38	/ Block 50"
Dim A	Dim C	Inches	Female	Male	Inches	Female	Male	Inches	Female	Male
.010	.0635	up to .100	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 .110	292-04A-9 292-04A-14	293-01A-9 293-01A-14
.007	.039	up to .100	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 .110	292-06A-9 292-06A-14	293-03A-9 293-03A-14
.005	.029	up to .100	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 .110	292-07A-9 292-07A-14	293-04A-9 293-04A-14

2.92mm (40 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standaı .500", T (For standa models, pleas	rd Block hread-In ard block -6 se contact us)	PCB Thickness	Standard Block .500"		Standard Block .500"		PCB Thickness	Standar .500", TI Extende	rd Block hread-In, d Length
Dim A	Dim C	Inches	Female	Male	Inches	Female	Male	Inches	Female	Male		
.010	.0635	up to .100	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 .100	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 .100	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		

2.92mm (40 GHz) Cont'd

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Narrow Block .350″		Narrow Block .350"		PCB Thickness	Narrow .350", Exter	/ Block nded Length	
Dim A	Dim C	Inches	Female	Male	Inches	Female	Male			
.010	.0635	up to .065 .040 to .110	1092-03A-9 1092-03A-14	1093-01A-9 1093-01A-14	up to .065 .040 to .110	Contact Us	Contact Us			
.007	.039	up to .065 .040 to .110	1092-04A-9 1092-04A-14	1093-03A-9 1093-03A-14	up to .065 .040 to .110	Contact Us	Contact Us	CIR		
.005	.029	up to .065 .040 to .110	1092-01A-9 1092-01A-14	1093-04A-9 1093-04A-14	up to .065 .040 to .110	1092-01A-11 1092-01A-13	Contact Us			

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DIMENSIONS A, B, C



2.40mm (50 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standard Block .500", Thread-In (For standard block -6 models, please contact us)		PCB Thickness	Standard Block .500"		Standard Block .500"		PCB Standard Block Thickness .500"		PCB Thickness	Narrow .350", Tl	/ Block hread-In
Dim A	Dim C	Inches	Female	Male	Inches	Female	Male	Inches	Female	Male				
.010	.0635	up to .100	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 .110	1492-02A-9 1492-02A-14	1493-02A-9 1493-02A-14				
.007	.039	up to .100	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 .110	1492-03A-9 1492-03A-14	1493-03A-9 1493-03A-14				
.005	.029	up to .100	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 1432-04A-8	up to .065 .040 to .110	1492-04A-9 1492-04A-14	1493-04A-9 1492-04A-14				

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

1.85mm (67 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standaı .500", T (For standa models, pleas	rd Block hread-In ard block -6 se contact us)	PCB Thickness	Standard Block .500"		PCB Thickness	Narrow Block .350", Thread-In	
Dim A	Dim C	Inches	Female	Male	Inches	Female	Male	Inches	Female	Male
.007	.039	up to .100	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 .110	1892-03A-9 1892-03A-14	1893-03A-9 1893-03A-14
.005	.029	up to .100	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 .110	1892-04A-9 1892-04A-14	1893-04A-9 1893-04A-14

1.0mm (110 GHz)

Launch Pin Diameter	Dielectric Diameter	PCB Thickness	Standar .500", T (For standa models, pleas	rd Block hread-In ard block -6 se contact us)	PCB Thickness	Standa .5(rd Block 00"	PCB Thickness	Narrow .350", T	/ Block hread-In
Dim A	Dim C	Inches	Female	Male	Inches	Female	Male	Inches	Female	Male
.005	.029	up to .100	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 .110	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" RO3003 Microstrip					B3003-5M-110
.008" RO4003 Microstrip	B4003-8M-27	B4003-8M-40	B4003-8M-50	B4003-8M-67	
.008" RO4003 GCPW	B4003-8C-27	B4003-8C-40	B4003-8C-50	B4003-8C-67	
.030" RO4350 GCPW	B4350-30C-27	B4350-30C-40	B4350-30C-50		
.005" EZ-IO-F Microstrip					BTCLM-5M-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, but should not exceed more than 2 lb. 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



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







2 0 2 1 - 2 0 2 2

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