

Edge-Lock RF PCB Connectors

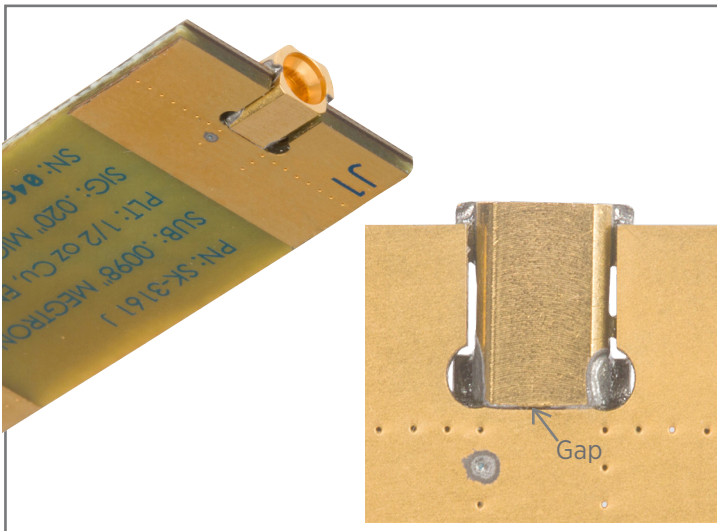
Features & Benefits

- High frequency RF performance up to 40 GHz (2.92mm version)
- Edge-Lock design allows for precision placement prior to reflow process
- No need for custom, expensive reflow oven fixtures
- Connector clamps securely to PCB edge, can be modified to fit most PCB thicknesses

Applications

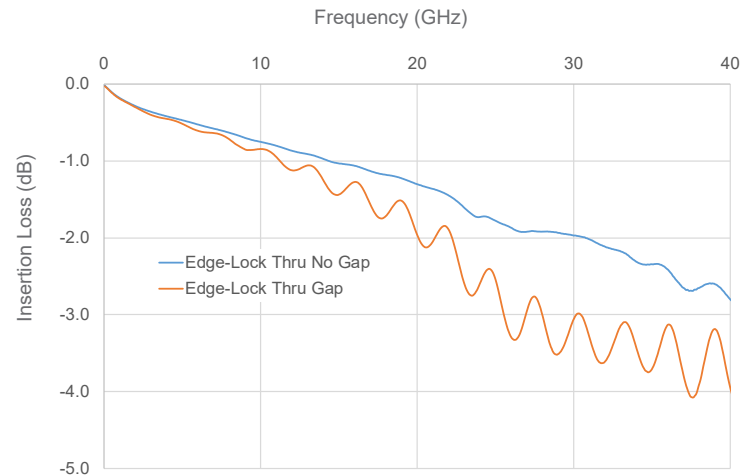
- High speed/frequency component test
- Product evaluation boards
- Mil-Aero radar and communication systems
- Satellite communication systems

Problem: Without proper reflow oven fixtures, edge launch connectors can be difficult to solder properly.



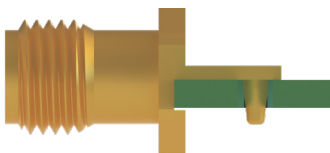
Picture of SMPM edge launch male connector showing gap between edge of connector and edge of circuit board

Consequence: A gap as small as .015" can have a major undesirable effect on return loss performance as evidenced below.

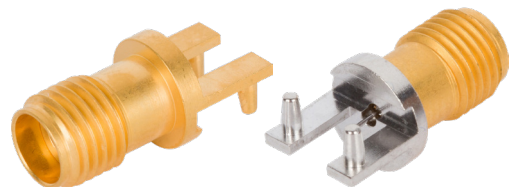


Effect of edge gap on Insertion Loss through measurement

Solution: SV's new Edge-Lock connector series is developed to form an interference fit between the conical alignment pin and the PCB thru-hole, thus pulling the contact lane of the connector in to the edge of the PCB. The result is a fixture-less connector that is primed for reflow without any unnecessary custom fixtures to hold the connector in place. The secure fit between the connector and the PCB edge ensures optimal RF performance throughout the connector's full frequency range.



Edge-Lock connector retention through interference fit of conical alignment pin



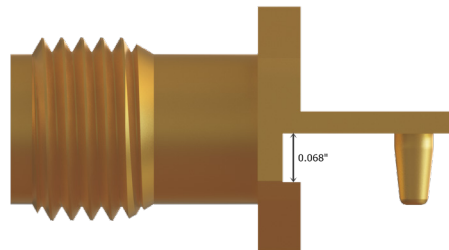
2.92mm Edge-Lock connectors. Standard and pre-tinned variations are available with SV's proprietary process.

Specifications

	SMA	2.92mm
Max Frequency	18 GHz	40 GHz
VSWR	1.05 + .005 * f	1.03 + .005 * f
Insertion Loss	.03 * \sqrt{f}	.04 * \sqrt{f}
DWV	1000 VRMS	500 VRMS
Mating Cycles	500	500
Mating Torque	7-10 in-lbs	7-10 in-lbs
Temperature Rating	-65°C to 165°C	-65°C to 165°C
Vibration	MIL-STD-202, Method 204, Condition D, 20Gs	MIL-STD-202, Method 204, Condition D, 20Gs
Shock	MIL-STD-202, Method 107, Condition B, -65°C to 165°C	MIL-STD-202, Method 107, Condition B, -65°C to 165°C
Part Number	2921-00037	1521-00005



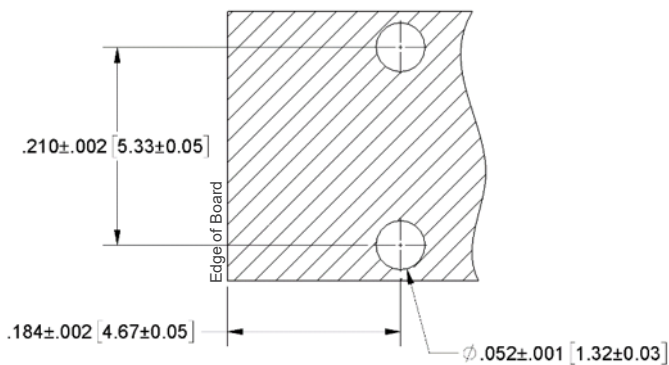
Edge-Lock 2.92mm connector (right) attached to eval board



Side view of Edge-Lock connector designed for .062 ± .003" thick PCB.

Customized for Your Application: SV's Edge-Lock technology can be adapted to any RF connector series for any PCB thickness. Please contact your Applications Engineers at marketing@svmicro.com for more information.

Mounting Pattern Guidelines:



Thru-Hole Diameter Tolerance:

Tolerances of thru-hole diameters are critical for an effective Edge-Lock connector to properly fasten to the PCB. We recommend $.052 \pm .001$ "

Thru-Hole Position:

Position of thru-holes relative to the PCB edge determines the interference fit of the conical pins. In order for the Edge-Lock connector to lock firmly into position, the centerline of the thru-hole to card edge tolerance must be within $.184 \pm .002$ "

PCB Thickness:

Finally, the PCB thickness must be controlled to within $\pm 5\%$ from nominal. In the case of a .062" thick PCB that would be $\pm .003$ "