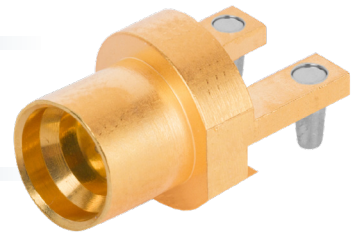


# Edge-Lock RF PCB Connectors



## Features & Benefits

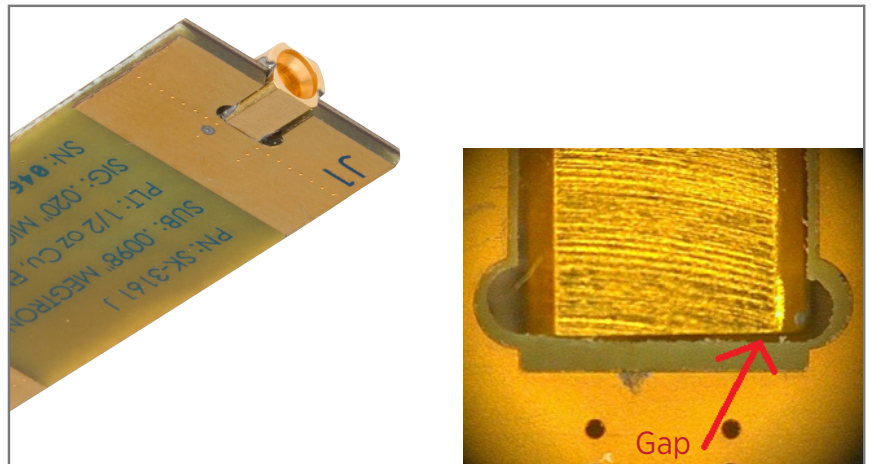
- High frequency RF performance up to 65 GHz (SMPM version)
- Edge-Lock design allows for precision placement prior to reflow process
- No need for custom, expensive reflow oven fixtures
- Connector clamps securely to PCB edge, can be modified to fit most PCB thicknesses
- Available in 2.92mm, SMA, SMP, and SMPM RF Series

## Applications

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

## Problem:

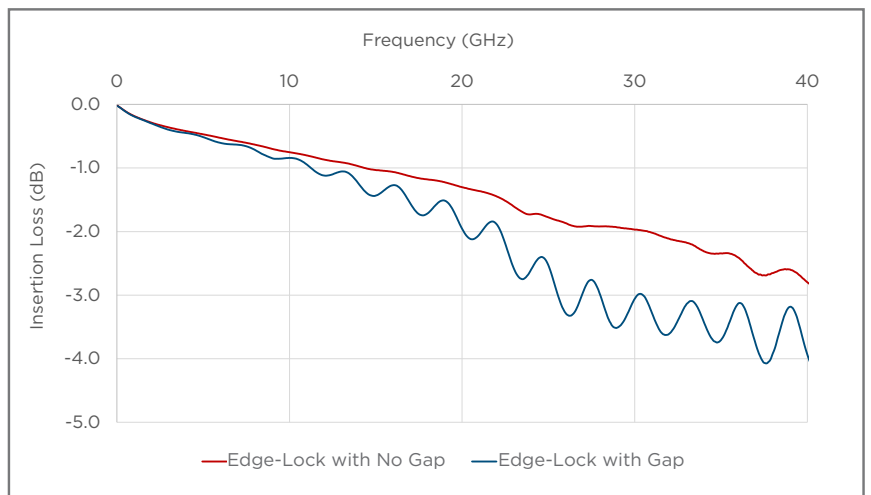
Without proper reflow oven fixtures, edge launch connectors can be difficult to solder properly. As seen in Figure 1, the SMPM edge launch male connector exhibits a gap between the edge of the connector and the edge of the circuit board.



**Figure 1:** Close up of the gap between connector back and PCB

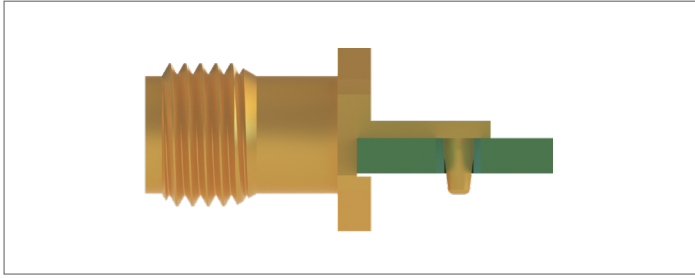
## Consequence:

A gap as small as .015" can have a significant undesirable effect on RF performance, particularly in regard to return loss characteristics, as evidenced here. The chart on the right illustrates the impact of the edge gap through measured insertion loss variation, highlighting how increasing gap distance can negatively affect signal transmission across the interface.

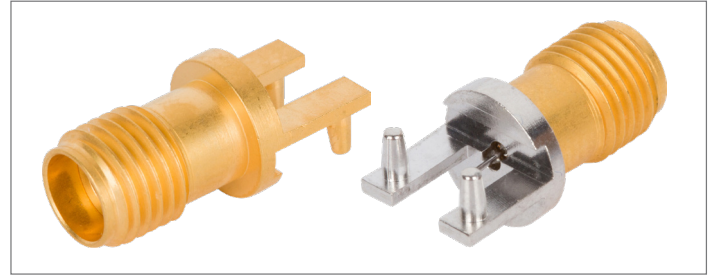


**Figure 2:** Insertion Loss Measurement

**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 need for 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.

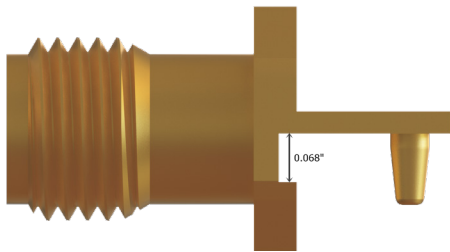


**Figure 3:** Edge-Lock connector retention through interference fit of conical alignment pin



**Figure 4:** 2.92mm Edge-Lock connectors. Standard and pre-tinned variations are available with SV's proprietary process.

## Mounting Pattern Guidelines:



**Figure 5:** Side view of Edge-Lock connector designed for  $.062 \pm .003$ " thick PCB.

### Thru-Hole Diameter Tolerance:

Tolerances of thru-hole diameters are critical for an effective Edge-Lock connector to properly fasten to the PCB.

### 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  $\pm .002$ "

### 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  $\pm .003$ "

## COTS Products Available Through Distribution



**1521-00005**

2.92mm Female, 2 Leg,  
.062" PCB Thickness



**2921-00037**

SMA Female PCB, 2 Leg,  
.062" PCB Thickness



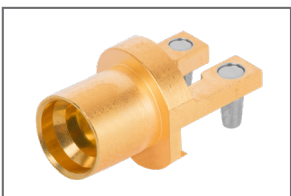
**1211-66444**

SMP Male PCB, 2 Leg, FD,  
.062" PCB Thickness



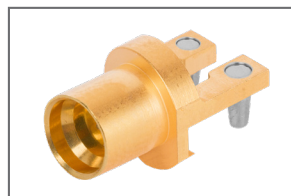
**1211-66443**

SMP Male PCB, 2 Leg, SB,  
.062" PCB Thickness



**3211-60480**

SMPM Male PCB, 2 Leg,  
FD, .062" PCB Thickness



**3211-60479**

SMPM Male PCB, 2 Leg, SB,  
.062" PCB Thickness

**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 [applications@svmicro.com](mailto:applications@svmicro.com) for more information.