

Reflow Stable PCB Connectors

Features & Benefits

- Dimensionally stable during reflow
- Minimal board to Reference Plane height
- Glass Seal Reflow Stable PCB Connectors rated to 500° C
- Epoxy Seal Reflow Stable PCB Connectors rated to 255° C

Applications

- Phased Array Systems
- Missile Seeker and Guidance Systems
- High Density Multiport Configurations



A common problem for design engineers is how to avoid the deformation of Printed Circuit Board (PCB) connectors during reflow. Reflow is the process whereby PCBs are placed in an oven and heated beyond the melting temperature of the solder used to fix the connector onto the board. PCB connectors that feature PTFE as the dielectric may deform and expand, causing the components to tilt or otherwise compromise the expected electrical performance and attachment reliability. To combat this issue, SV Microwave has developed a suite of Reflow Stable PCB Connectors that feature either a glass or epoxy seal as the dielectric material. The dielectrics in this product line exhibit minimal change in volume with respect to temperature.

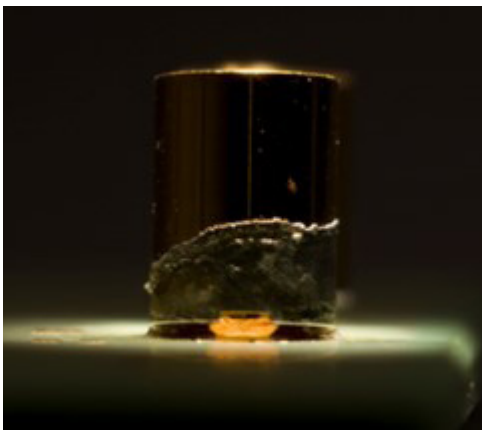


Figure 1: PCB Connector with PTFE tilting and lifting off board during reflow.

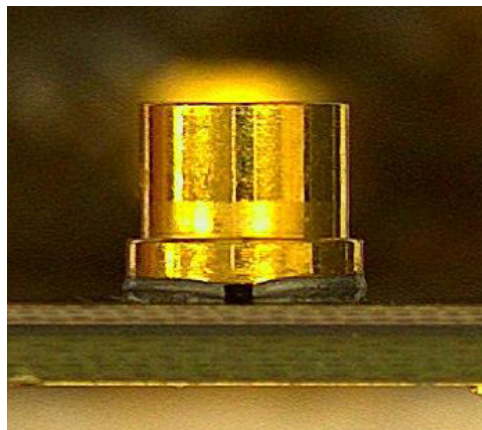


Figure 2: Reflow Stable PCB Connector during reflow. The connector stays firmly on the board.

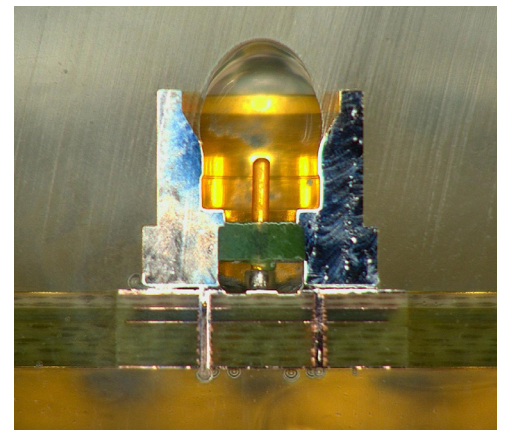


Figure 3: Cross-section of Glass Seal PCB Connector on board.

Electrical Performance

The following electrical data shown in Figure 4, compares SV's Glass Seal PCB Connector and SV's Epoxy Seal PCB Connector. Each SMP connector was tested on PCB test coupon SK-3412A and soldered using Sn96 solder. The VSWR data shown in Figure 4 was gated to the middle of the test coupon trace and includes the surface mount connector and its launch to the PCB.

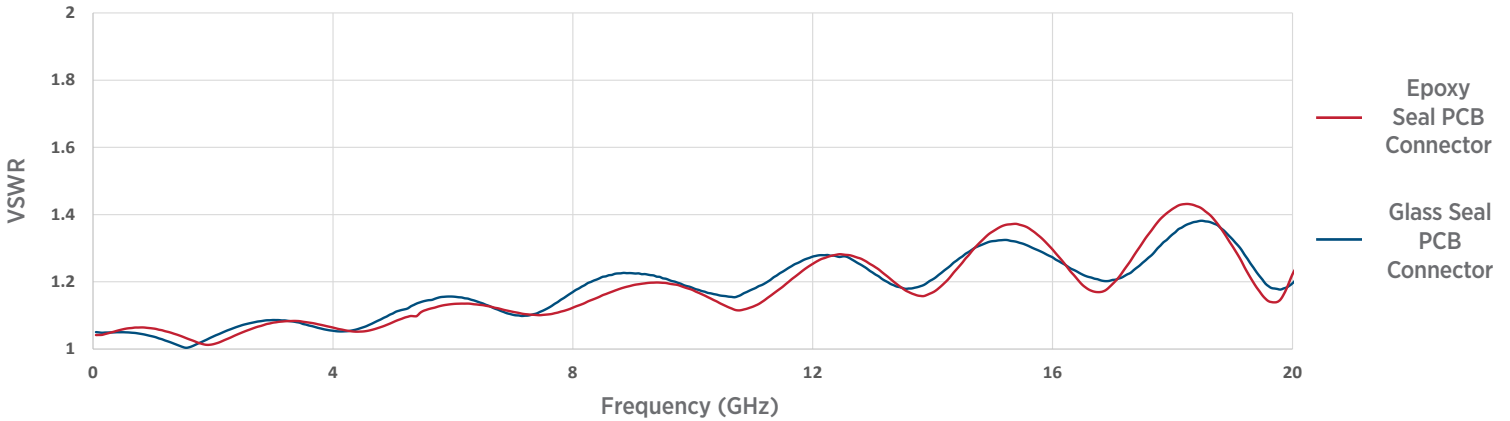


Figure 4: Glass Seal vs. Epoxy Seal PCB Connectors

Characteristics at a Glance

Property	Glass	Epoxy
Lead Time	★	★★★
Cost	★★★	★★★
Outgassing	★★★	★
Temperature Rating	★★★	★★
Frequency	★★★	★★★

ONE STOP SHOP

SV Microwave has the ability to design, manufacture and distribute both COTS and custom Reflow Stable PCB Connectors. Because of this, our lead time for this product line is significantly lower than that of our competition. Our team is able to manufacture single and multiport SMP, SMPM and SMPS configurations in both gold and pre-tinned finishes.

Reflow Stable Product Line

Part Number	Description
1211-20015	SMP Male PCB Surface Mount Connector (Glass Seal), SB
1211-20016	SMP Male PCB Surface Mount Connector (Glass Seal), FD
1211-20019	SMP Male PCB Surface Mount Connector (Glass Seal, Pre-Tinned), SB
1211-20021	SMP Male PCB Surface Mount Connector (Glass Seal, Pre-Tinned), FD
1211-40162	SMP Male PCB Surface Mount Connector (Reflow Stable), FD
3211-20027	SMPM Male PCB Surface Mount Connector (Glass Seal), SB
3211-20028	SMPM Male PCB Surface Mount Connector (Glass Seal), FD
3211-20033	SMPM Male PCB Surface Mount Connector (Glass Seal, Pre-Tinned), SB
3211-20034	SMPM Male PCB Surface Mount Connector (Glass Seal, Pre-Tinned), FD
3211-40175	SMPM Male PCB Surface Mount Connector (Reflow Stable), FD
3811-60005	SMPS Male PCB Surface Mount Connector (Glass Seal) (.009"), SB
3811-60005-TD	SMPS Male PCB Surface Mount Connector (Glass Seal, Tin Dipped) (.009"), SB
3811-60006	SMPS Male PCB Surface Mount Connector (Glass Seal) (.009"), FD
3811-60006-TD	SMPS Male PCB Surface Mount Hermetic (Glass Seal, Tin Dipped) (.009"), FD
3811-40092	SMPS Male PCB Surface Mount Connector (Reflow Stable) (.009"), FD