

High Voltage/Low Intermodulation SC

Amphenol **SV MICROWAVE**[®] RF Connectors & Components

Features and Benefits

- **Mil 39012 compliance provides consistent performance and dependability**
- **Design optimized for Space applications through the use of tri alloy plating**
- **Outstanding Passive Intermodulation (PIM) performance:
-120 dBc @ 905 MHz with 43 dBm power**
- **Rugged connector body designed to dissipate heat**



Applications

- **Satellite equipment and Space-based components**
- **High power Military Radar**
- **High power lasers**
- **Semiconductor Manufacturing Equipment**

SC Connectors

High Voltage/Low Intermodulation SC Connectors

SV Microwave manufactures high performance SC connectors for various applications. When specifying power for a connector, it is important to indicate whether it is peak power or average power requirement. Peak power is more a function of the voltage breakdown path of the connector, while average power is determined by the ability of the connector to handle elevated temperatures.

One of the primary factors restricting power handling in coaxial connectors is overheating due to restricted heat dissipation. SV has solved this problem through the use of Fluoroloy-H® as the dielectric material. This material has a slightly higher dielectric constant compared to standard PTFE dielectric material, but Fluoroloy-H® has a higher thermal conductivity rate which allows for faster heat dissipation from the center conductor to the outer conductor thus improving overall power handling capability of the connector. Also, heat fins or vent slots may be added to the connector design to enhance heat transfer characteristics.

For Space applications SV Microwave's SC connectors offer excellent passive intermodulation performance through the use of tri alloy plating. The tapered conical dielectric design provides excellent voltage breakdown performance and resistance to multipaction.

SC Connectors - Specifications

Materials and Finish

| | |
|-----------------------|------------------------------|
| Body and Coupling Nut | Tri alloy plated brass |
| Center Contact | Gold plated beryllium copper |

Electricals

| | |
|---------------------------------|--|
| Impedance | 50 Ohms |
| Frequency Range | DC – 11 GHz |
| Voltage Rating | 2000 VRMS @ sea-level 500 VRMS @ 70,000 feet |
| Insulation Resistance | 5000 megohms minimum |
| VSWR | 1.3:1 typical |
| Contact Resistance | 1.0 / .15 milliohms typical |
| Dielectric Withstanding Voltage | MIL-STD-202, method 301 (6000 VRMS) |
| Corona Level | MIL-STD-202, method 105, condition C @ 70,000 ft. (1500 volts) |
| RF High Potential | 4000 VRMS @ 5 MHz |

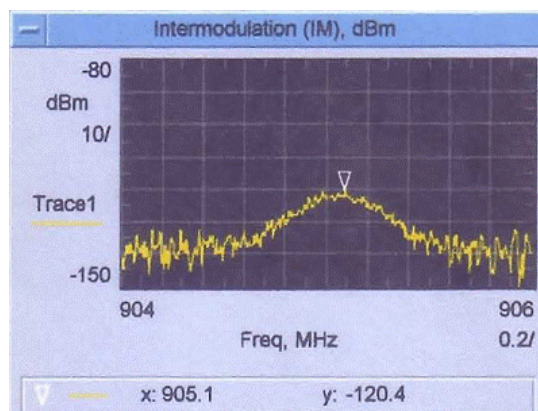
Environmentals

| | |
|-------------------|--|
| Temperature Range | -65°C to +165°C (Consult Factory for Hi-Temp versions) |
|-------------------|--|

Mechanicals

| | |
|---------------|------------------------|
| Mating | 11/16 - 24 UNEF - 2A/B |
| Mating Torque | 12 to 15 inch pounds |

Intermodulation Performance @ 905 MHz, with 43 dBm input power is better than -120 dBc for a mated pair of cable assemblies.



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