SMP Spring Bullets

Features & Benefits

- Eliminates gaps between bullet and shroud for maximum RF performance
- Wide range of available sizes
- Performance guaranteed under all states of compression
- DC - 40 GHz

Applications

- Mil-Aero
- High density, small form factor
- Board to board with multiple simultaneous mates
- Large scale blind-mate arrays

SMP Spring Bullet Performance Under Compression

SV's SMP spring bullets have been designed for repeatable VSWR profiles over the entire range of compression. Repeatability is critical in applications where the compressed length can vary due to tolerance stackup at final integration. The below image shows the nominal (design target) overall length at .050" compression and the fully compressed (.100") condition. The VSWR remains consistent and stable.

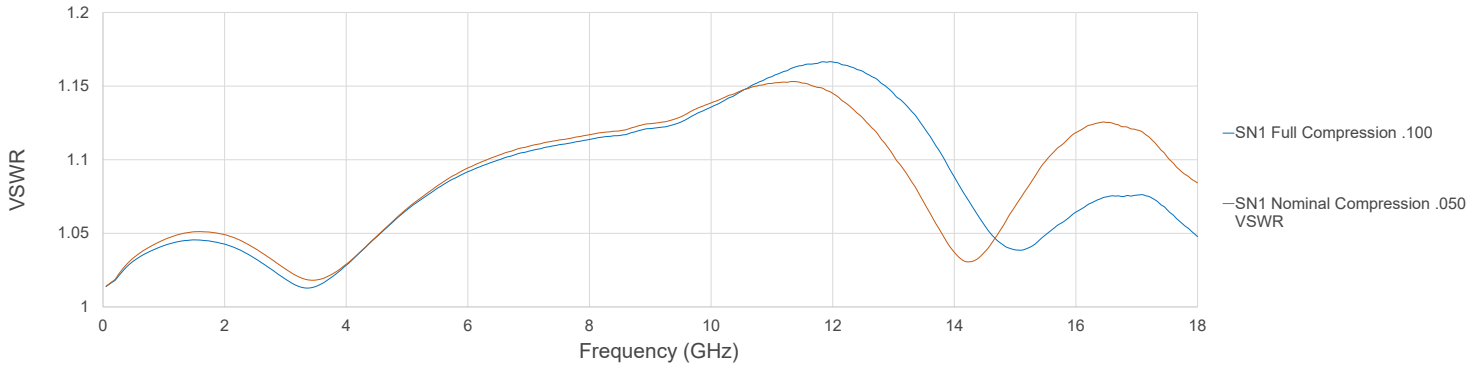

Figure 1: VSWR profile at Nominal (.050") and Full (.100") Compression

Figure 2: P/N 1112-4148 1.000", No Compression

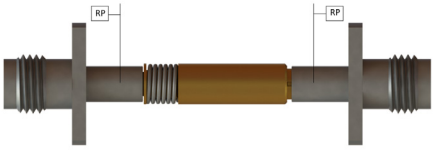

Figure 3: P/N 1112-4148 0.950", Nominal Compression

Figure 4: P/N 1112-4148 0.900" Full Compression

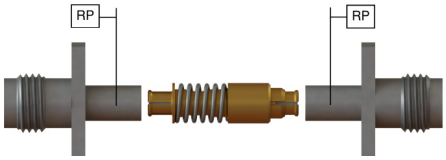

Figure 5: Test set-up for SMP Female to Female Bullet

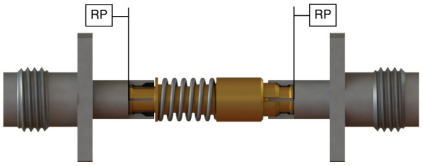

Figure 6: As tested, SMP Female to Female Bullet

Amphenol SV MICROWAVE

O: 561.840.1800
marketing@svmicrowave.com

SMP Spring Bullet Performance Under Compression *(cont'd)*

Figure 7 demonstrates the capability of an SMP spring bullet to maintain similar levels of insertion loss when both nominally and fully compressed.

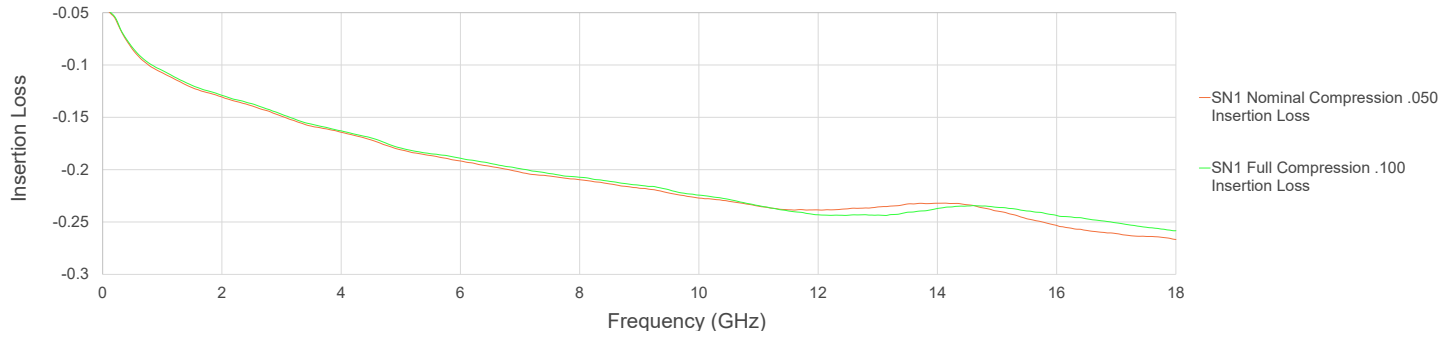

Figure 7: Insertion loss comparison under different states of compression

Ensure Full Mating at each RF Port with SMP Spring Bullets

In Figure 8 shows that the left hand bullet is fully mated (reference planes in contact) while the right hand bullet is offset. This kind of misalignment often happens in multiport applications due to machining and assembly tolerances.

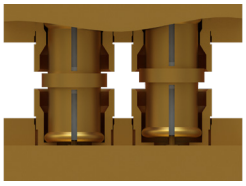

Figure 8:
Fixed Bullets

Figure 9:
Spring Bullets

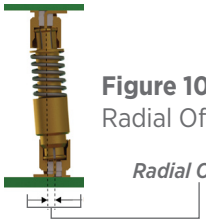

Figure 10:
Radial Offset Definition

Figures 11 and 12 below show the VSWR and Insertion Loss performance under radial offset increments of 2 mils (.002"). Radial offset is defined as the distance between the center lines of two opposing shrouds, as seen in Figure 10, above.

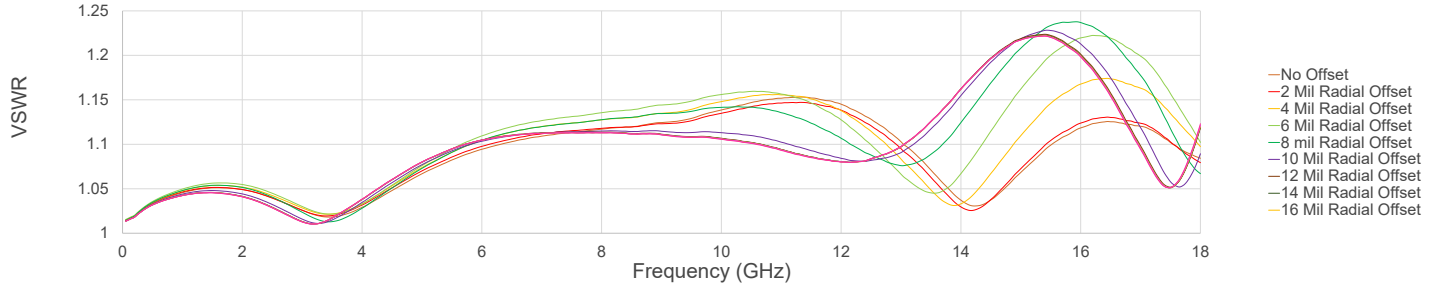

Figure 11: VSWR over radial offset at nominal compression

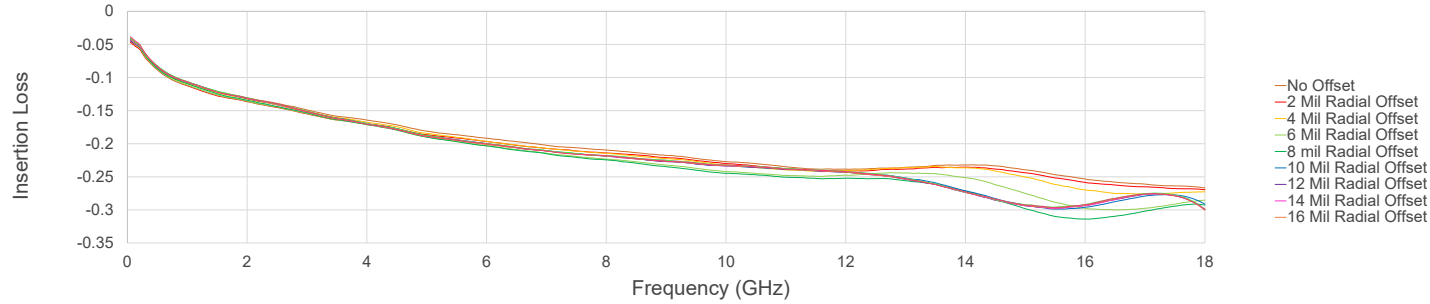

Figure 12: Insertion loss over radial offset at nominal compression

Amphenol SV MICROWAVE

O: 561.840.1800

marketing@svmicrowave.com