SMP Microminiature Push-On Coaxial Connectors
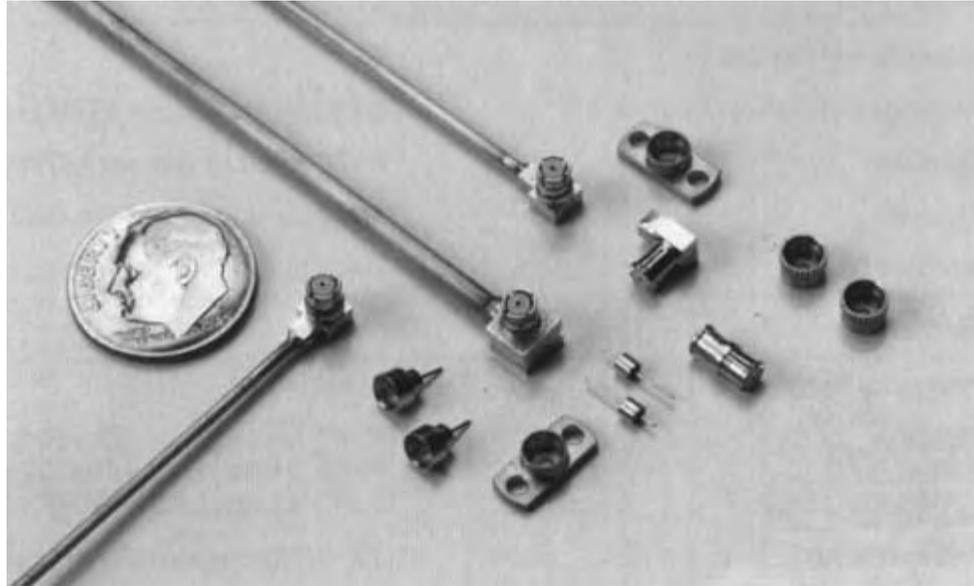
Product Facts

- **Intermateable with Corning Gilbert GPO Series Connector**
- **DESC approved**
- **Enhanced performance features**
- **Simplified Assembly**

Between Series Adapters
For SMP Between Series Adapters, see pages 253-262.

SMP microminiature push-on coaxial connectors provide solutions for today's modular designs with denser packaging requirements. The extremely small size of the SMP offers a versatile solution for high density packaging allowing connector center-to-center spacing of 4.32 [0.17]. The push-on interface facilitates easier assembly and test with a positive snap-in feature to indicate a fully mated connection. The rugged SMP interface can withstand harsh environments of mechanical shock and vibration, typically found in military or aerospace related applications. This SMP connector interface is the standard used by Defense Electronics Supply Center (DESC) to generate the SMP push-on connector series.

SMP connectors can be your design solution for mechanical packaging and frequency response. The SMP interface provides 0.020" of radial misalignment for critical blindmate applications. Mating forces are strictly controlled to ensure reliable connections per mated pair or when simultaneously mating multiple connectors. Cable jacks include an anti-rocking ring to ensure reliable mechanical performance regardless of the operating environment. SMP connectors offer enhanced broadband VSWR performance of

1.15:1 max thru 26GHz and 1.40:1 max thru 40GHz.

Standard design SMP configurations include cable connectors, straight and right-angle, for 0.047 and 0.085 semi-rigid cable, full detent, limited detent and smooth bore mating shrouds that can be bulkhead or flange mounted and glass feedthroughs for coax to circuit launchers. In-series adapters for module to module intermating and between series adapters for integrating or testing systems or components parameters.

SMP Shroud and Jack to Jack Adapter Assembly
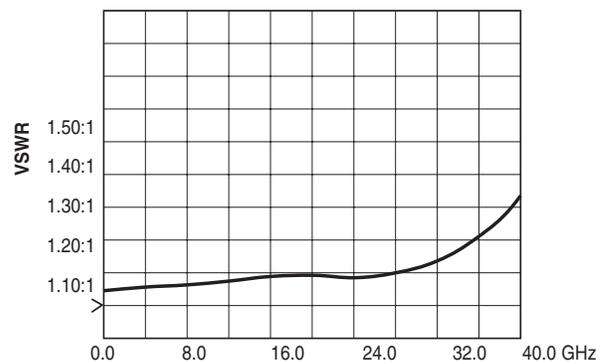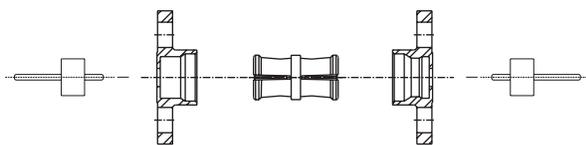
Typical VSWR for SMP Jack to Jack Adapter Part Numbers 1056700-1 and 1056721-1

GPO is a trademark of Corning Gilbert, Inc.   **Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SMP Microminiature Push-On Coaxial Connectors (Continued)

Specifications

General

Materials and Finishes	
Housings and Center Contacts	Beryllium Copper per ASTM-B-196; gold plate over nickel plate
Dielectric	PTFE Fluorocarbon per ASTM-D-1457
Shrouds	Stainless steel per ASTM-A582 Type 303; passivate per ASTM-A380
Hermetic Seal	Glass bead

Electrical

|	
Frequency Range	dc - 40.0 GHz
VSWR	1.10:1 Maximum dc - 23.0 GHz
	1.15:1 Maximum 23.0 - 26.0 GHz
	1.40:1 Maximum 26.0 - 40.0 GHz
Voltage Rating	335 Vrms maximum at sea level
Insertion Loss	0.10 $f\sqrt{(GHz)}$ maximum
Insulation Resistance	5000 megohms minimum
Dielectric Withstanding Voltage	500 volts (VRMS minimum)
RF High Potential	325 volts (VRMS minimum) @ 5 MHz
Impedance	50 ohms nominal
RF Leakage	-80dB to 3 GHz, -65dB from 3 to 26.5 dB minimum
Contact Resistance	Initial center contact 6.0 milliohms maximum
	Outer contact 2.0 milliohms maximum

Mechanical

Durability	100 mating cycles minimum	
Radial Misalignment	±0.020 minimum	
Axial Misalignment	.000/.010	
Force to Engage	full detent	15.0 lbs. maximum
	half detent	10.0 lbs. maximum
	smooth bore	2.0 lbs. maximum
Force to Disengage	full detent	5.0 lbs. minimum
	half detent	2.0 lbs. minimum
	smooth bore	0.5 lbs. minimum
Center Contact Retention	1.5 lbs. minimum axial force	

Environmental

|	
Operating Temperature	-65°C to +165°C
Vibration	per mil-std-202, method 204, test condition D
Shock	per mil-std-202, method 213, test condition I
Thermal Shock	per mil-std-202, method 107, test condition B
Moisture Resistance	per MIL-STD-202 method 106, except step 7b shall be omitted. Resistance shall be 200 megohms within 5 minutes after removal from humidity.

Interface Dimensions

Jack
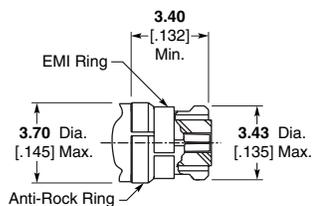
Shroud

Full Detent
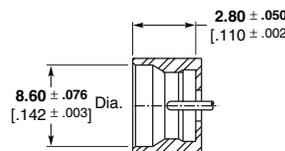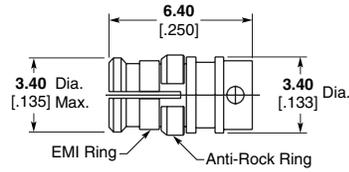

Bullet
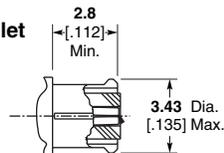
Smooth Bore
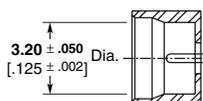
Note: The U.S. Government (DESC) has determined that the above specified interface dimensions are interchangeable and intermatible with Corning Gilbert GPO Series RF Connectors.[1]

GPO is a trademark of Corning Gilbert, Inc.

[1] Per DESC drawing numbers 94007 and 94008, series SMP.

SMP Microminiature Push-On Coaxial Connectors (Continued)

Straight Cable Jack, Solder Attachment

6.40 [.250]

3.40 Dia. [.135] Max.

3.40 Dia. [.133]

EMI Ring — Anti-Rock Ring

Cable	Part No.
.047 Semi-Rigid	1056526-1
.085 Semi-Rigid (RG 405)	1056527-1

Right-Angle Cable Jack, Solder Attachment

4.10 [.161] Max.

5.80 Max. [.230]

EMI Ring — Anti-Rock Ring

Dim.B   Dim.A

3.40 Dia. [.135] Max.
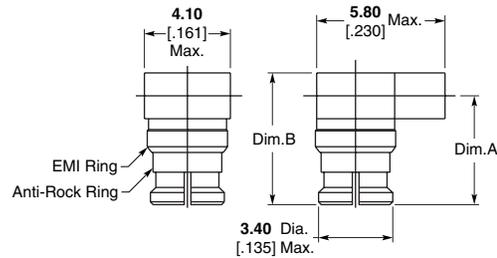
Cable	Dim. A	Dim. B	Part No.
.047 Semi-Rigid	4.8 .190	5.8 .230	1056553-1
.085 Semi-Rigid (RG 405)	5.3 .209	6.7 .265	1056554-1

Jack to Jack Adapter (Bullet)

6.40 / 6.50 [.2525 / .2555]

3.40 Dia. [.133]

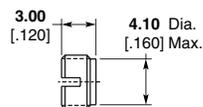3.40 Dia. [.135] Max.
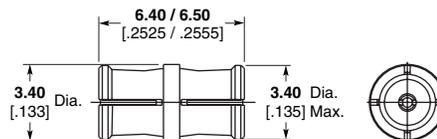
Part No.
1056700-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

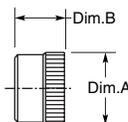## SMP Microminiature Push-On Coaxial Connectors (Continued)

Shroud — Threaded

3.00 [.120]

4.10 Dia. [.160] Max.

Description	Part No.
Full Detent	**1056745-1**
Limited Detent	**1056743-1**
Smooth Bore	**1056744-1**

Shroud — 2 Hole Flange Surface Mount

Dim.C

3.00 [.120]

4.20 [.165]

Dim.B

Dim.A

Dim.D 2 Plcs.

1.10 [.045]
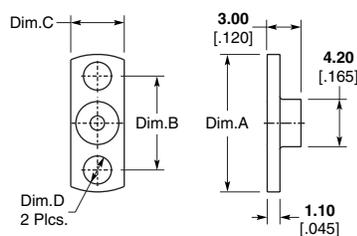
Description	Dim. A	Dim. B	Dim. C	Dim. D	Part No.
	12.2 .480	**8.3** .328	**4.7** .187	**2.5** .098	**1056721-1**
Full Detent	**15.8** .625	**12.2** .481	**5.7** .223	**2.6** .102	**1056722-1**
	10.2 .400	**7.2** .282	**4.2** .165	**1.9** .073	**1056724-1**
Limited Detent	**12.2** .480	**8.3** .328	**4.7** .187	**2.5** .098	**1056729-1**
	10.2 .400	**7.2** .282	**4.2** .165	**1.9** .073	**1056731-1**

Shroud — Press Fit

Dim.B

Dim.A

Description	Dim. A	Dim. B	Part No.
Limited Detent	**3.9** .154	**2.0** .080	**1056736-1**

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SMP Microminiature Push-On Coaxial Connectors (Continued)
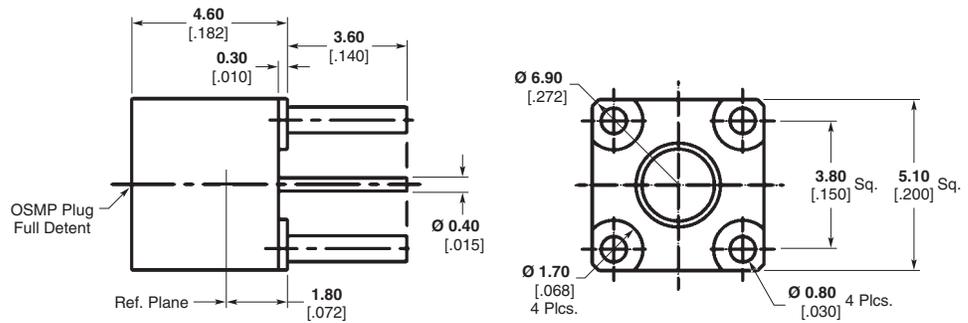
Shroud — Solder-In Hermetic

3.60 [.140]
2.00 [.080]
1.30 [.050]
0.40 [.015] Dia.
3.70 [.145] Dia.
2.50 [.098] Dia.
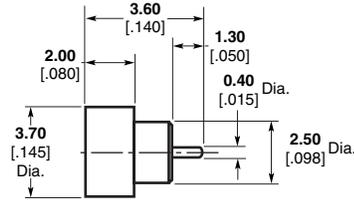
Description	Part No.
Full Detent	1056750-1
Limited Detent	1056751-1
Smooth Bore	1056752-1

Glass Bead Assembly

1.60 [.063]
2.50 [.099]
.400 [.015] Dia.
3.20 [.125]
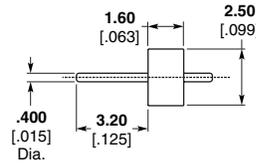
Part No.
1056728-1

Plug, Straight, Full Detent

4.60 [.182]
3.60 [.140]
0.30 [.010]
OSMP Plug Full Detent
Ø 0.40 [.015]
Ref. Plane
1.80 [.072]

Ø 6.90 [.272]
3.80 [.150] Sq.
5.10 [.200] Sq.
Ø 1.70 [.068] 4 Plcs.
Ø 0.80 [.030] 4 Plcs.

Plug, Right-Angle, Limited Detent

9.10 [.358]
4.70 [.186]
2.20 [.085]
0.60 ± 0.10 [.024 ± .002] Dia.
8.10 [.320]
0.50 ± 0.10 [.020 ± .002] Dia.
4.20 [.164]
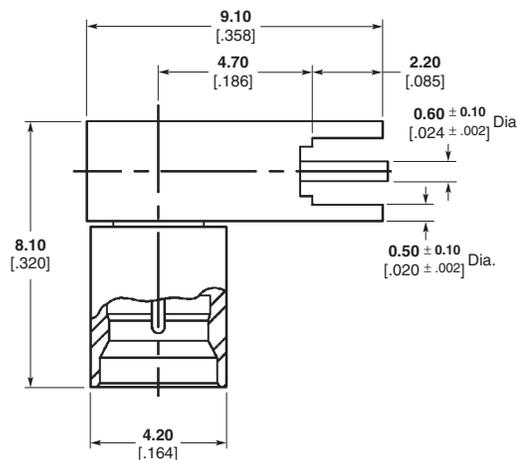
M/A-COM Model Number	Part No.
2965-5006-62	1061692-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.