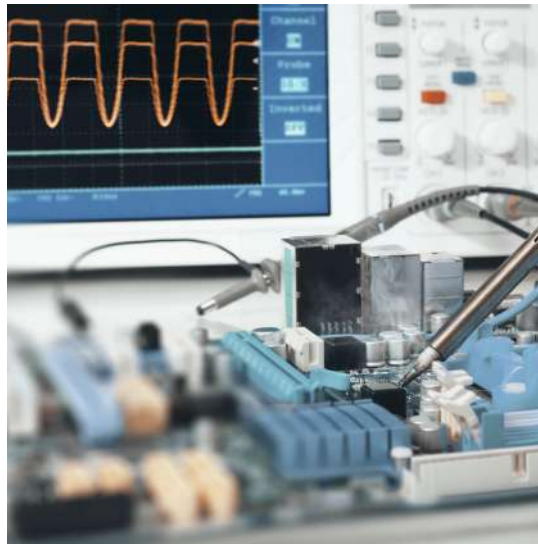
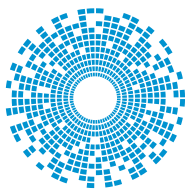


JOHNSON™



High Speed Miniature Product Catalog

SMP3, SMPM and SMP



cinch
CONNECTIVITY SOLUTIONS
a bel group

belfuse.com/cinch

About Bel

Bel is a publicly traded company that has been operated by the same family for over 65 years. Our history of organic growth and acquisitions have broadened our product portfolio. This has established Bel as a world leader with a diverse offering of power, protection and interconnect products. We design and manufacture these products which are primarily used in the networking, telecommunications, computing, military, aerospace, transportation and broadcasting industries. Bel's portfolio of products also finds application in the automotive, medical and consumer electronics markets.

About Johnson™

Johnson designs and manufactures an industry-leading line of RF coaxial connectors and adapters, available in both 50 and 75 Ohm versions, operating up to 67GHz. The range of products available within the product line includes board and cable mount connectors across subminiature, micro-miniature, ultra-miniature and millimeter wave classes as well as semi-rigid, conformable, and flexible RF coaxial cables. Johnson connectors are designed to provide the highest quality data transmission for data, audio, and video applications.

Table of Contents

SMP3

| | |
|---------------------------------------|---|
| Introduction | 3 |
| Specifications | 3 |
| Surface Mount Connectors | 4 |
| Bullet Adapter | 4 |
| SMP3 -1.85mm Between Series Adapters | 5 |
| SMP3 - 2.4mm Between Series Adapters | 6 |
| SMP3 - 2.92mm Between Series Adapters | 7 |

SMPM

| | |
|---|----|
| Introduction | 8 |
| Specifications | 9 |
| PCB Mount Connectors | 11 |
| End Launch Connectors | 12 |
| Vertical Launch Connectors (Microstrip and Stripline) | 12 |
| Flange Mount Connectors | 13 |
| 0.047" Cable Connectors | 13 |
| 0.086" Cable Connectors | 14 |
| Ganged Edge Mount Connectors | 15 |
| Blind Mate Interconnect | 15 |
| Between Series Adapters | 17 |
| Tools | 18 |

SMP

| | |
|---|----|
| Introduction | 19 |
| Specifications | 20 |
| PCB Mount Connectors | 24 |
| End Launch Connectors | 25 |
| Vertical Launch Connectors (Microstrip and Stripline) | 25 |
| Flange Mount Connectors | 26 |
| Hermetic Seal | 27 |
| 0.047" Cable Connectors | 27 |
| 0.086" Cable Connectors | 27 |
| Ganged Connectors | 28 |
| Ganged Edge Mount Connectors | 30 |
| Blind Mate Interconnect | 33 |
| Same Series Adapters | 33 |
| Between Series Adapters | 34 |
| Tools | 34 |
| Assembly Instructions | 35 |
| Competitor Cross Reference | 36 |

Introduction

Cinch Connectivity Solutions introduces the new SMP3 family of connectors. SMP3 is the next generation of sub-miniature push-on style connectors. It follows the prior generation SMPM and SMP connectors. SMP3 is more miniaturized (approximately 30% smaller than SMPM) and operates to 67 GHz by design. It is ideal for applications where there is high shock and vibration. The design is similar to SMPM and SMP for its utilization of a floating bullet. This helps compensate for axial and radial misalignment when mating. This also helps maintain a high performance retention in rugged military applications.

The sub-miniature, push-on connector interface is known for its blind mate capability. The smaller profile allows design engineers to fit the interconnects into dense packaging area.

Specifications

Environmental Specification

Meets or exceeds the applicable paragraph of MIL-PRF-39012

| | |
|-----------------------|--|
| Operating temperature | -65°C to +165°C |
| Thermal shock | MIL-STD-202, Method 107, Condition B |
| Corrosion/Salt Spray | MIL-STD-202, Method 101, Condition B |
| Vibration | MIL-STD-202, Method 204, Condition D |
| Mechanical Shock | MIL-STD-202, Method 213, Condition I |
| Moisture resistance | MIL-STD-202, Method 106 (except step 7b omitted) |

Mechanical Specification

Interface Design: MIL-STD-348A, Series SMP3

| | | |
|---|---|--------|
| Engagement Force (pounds maximum, mated pair) | Full detent (FD) | 2.5 |
| Disengagement Force (pounds minimum, mated pair) | Full detent (FD) | 4.5 |
| Mated Radial Misalignment | Between centerlines of mating planes | 0.010" |
| Mated Axial Misalignment | Between mating planes | |
| Durability (mating cycles minimum) | Full detent (all connectors and adapters) | 100 |

Mounting Holes

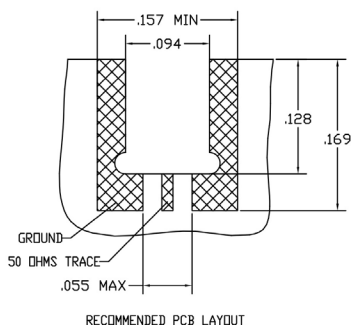


Figure 1

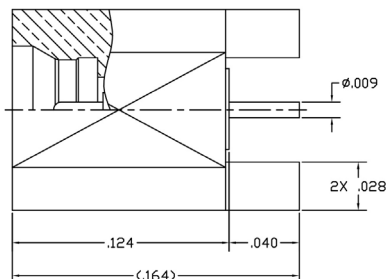


Figure 2

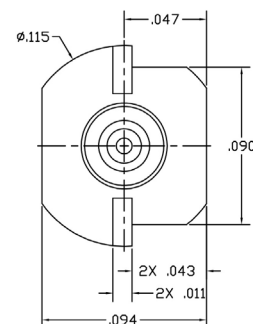
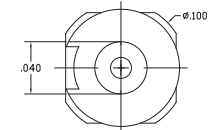
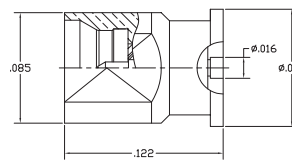
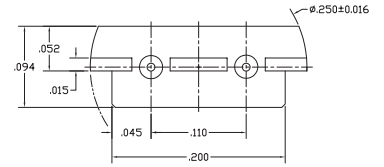
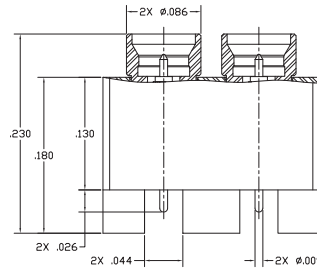
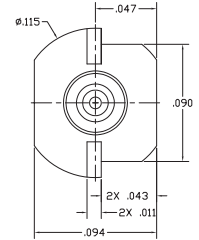
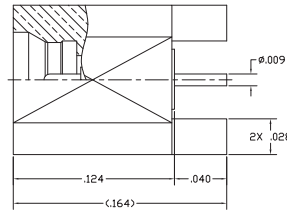


Figure 3

Surface Mount Connectors

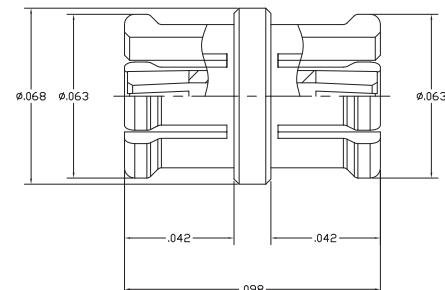
| Part Number | Description | Interface | Interface | VSWR | Frequency Range |
|--------------|------------------------|-------------|-----------|---------|-----------------|
| 123-0701-801 | End Launch Male | Full Detent | 50 Ohms | 1.5 Max | DC - 50 GHz |
| 123-0701-811 | End Launch Male 2 port | Full Detent | 50 Ohms | 1.5 Max | DC - 67 GHz |
| 123-0701-201 | Vertical Surface Mount | Full Detent | 50 Ohms | 1.4 Max | DC - 50 GHz |



Bullet Adapter

Female to Female Bullet Adapter

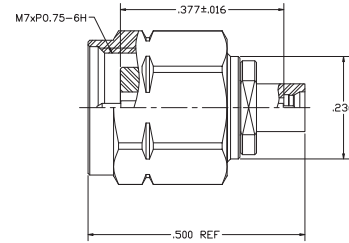
| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|-------------|-----------|---------|-----------------|
| 123-0901-801 | Gold-Plated | 50 Ohms | 1.4 Max | DC - 67 GHz |



SMP3 -1.85mm Between Series Adapters

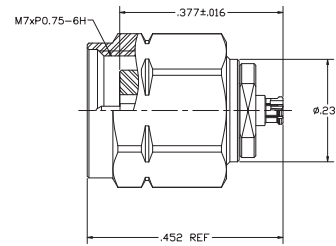
1.85mm Male to SMP3 Male

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|------------|-----------|----------|-----------------|
| 134-1000-032 | Passivated | 50 Ohms | 1.30 Max | DC - 67 GHz |



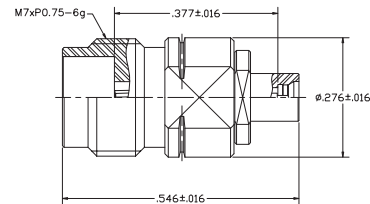
1.85mm Male to SMP3 Female

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|-------------|-----------|----------|-----------------|
| 134-1000-033 | Gold-Plated | 50 Ohms | 1.30 Max | DC - 67 GHz |



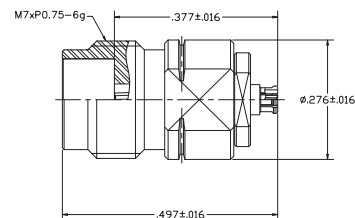
1.85mm Female to SMP3 Male

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|------------|-----------|----------|-----------------|
| 134-1000-034 | Passivated | 50 Ohms | 1.30 Max | DC - 67 GHz |



1.85mm Female to SMP3 Female

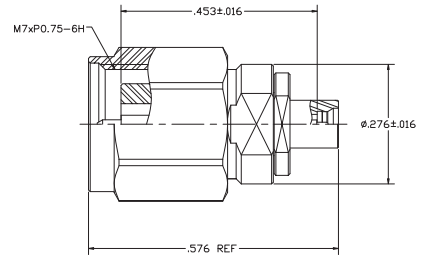
| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|-------------|-----------|----------|-----------------|
| 134-1000-035 | Gold-Plated | 50 Ohms | 1.30 Max | DC - 67 GHz |



SMP3 - 2.4mm Between Series Adapters

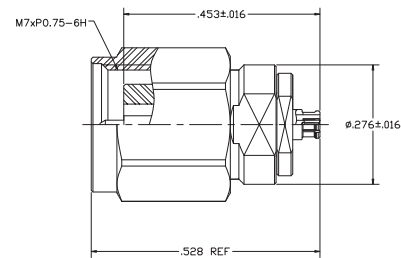
2.4mm Male to SMP3 Male

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|------------|-----------|----------|-----------------|
| 134-1000-036 | Passivated | 50 Ohms | 1.25 Max | DC - 50 GHz |



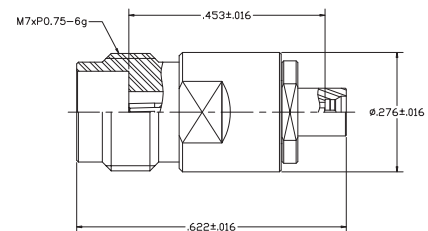
2.4mm Male to SMP3 Female

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|-------------|-----------|----------|-----------------|
| 134-1000-037 | Gold-Plated | 50 Ohms | 1.25 Max | DC - 50 GHz |



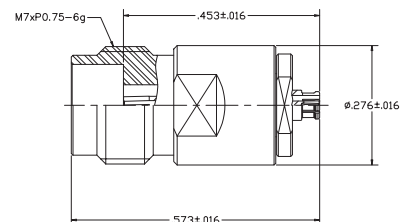
2.4mm Female to SMP3 Male

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|------------|-----------|----------|-----------------|
| 134-1000-038 | Passivated | 50 Ohms | 1.25 Max | DC - 50 GHz |



2.4mm Female to SMP3 Female

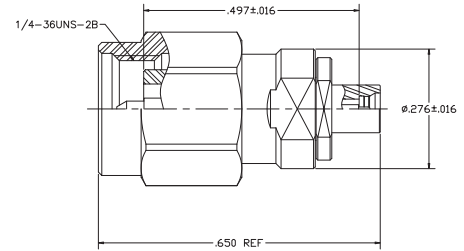
| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|-------------|-----------|----------|-----------------|
| 134-1000-039 | Gold-Plated | 50 Ohms | 1.25 Max | DC - 50 GHz |



SMP3 - 2.92mm Between Series Adapters

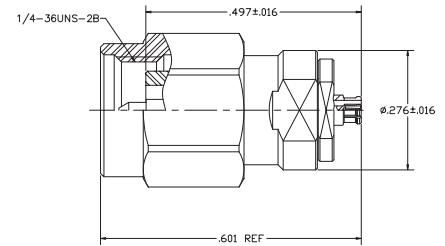
2.92mm Male to SMP3 Male

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|------------|-----------|----------|-----------------|
| 134-1000-040 | Passivated | 50 Ohms | 1.25 Max | DC - 40 GHz |



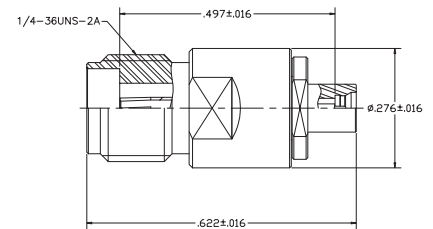
2.92mm Male to SMP3 Female

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|-------------|-----------|----------|-----------------|
| 134-1000-041 | Gold-Plated | 50 Ohms | 1.25 Max | DC - 40 GHz |



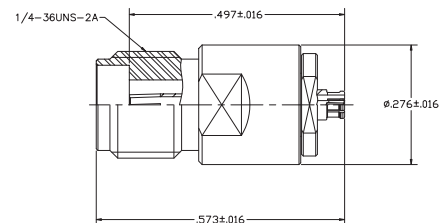
2.92mm Female to SMP3 Male

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|------------|-----------|----------|-----------------|
| 134-1000-042 | Passivated | 50 Ohms | 1.25 Max | DC - 40 GHz |



2.92mm Female to SMP3 Female

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|-------------|-----------|----------|-----------------|
| 134-1000-043 | Gold-Plated | 50 Ohms | 1.25 Max | DC - 40 GHz |



Introduction

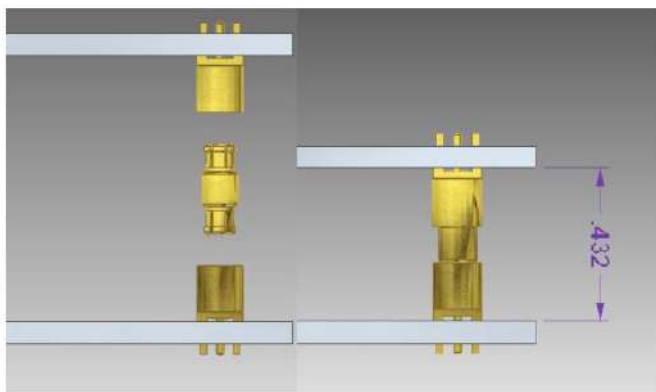
Cinch Connectivity Solutions offers the Johnson line of SMPPM connectors. The sub-miniature, push-on style micro interfaces are distinguished for blind mating and for their size (about 35% smaller than the SMP design) and becoming increasingly popular for the two-fold design benefit of allowing for a higher-density of connection points and maintaining solid Return Loss performance from DC-level frequencies up to 65 GHz.

The Johnson SMPPM family includes PC mount, End Launch and Vertical Launch styles, and straight and right-angled, 0.047" and 0.086" cabled connectors and sealable flange mounts. All male connectors are offered in both full detent or smooth bore designs to meet your preference of engagement / disengagement forces. Detent features are provided to retain the push-on connectors in mated condition. Different levels of engage and disengage forces are accomplished by various Detent offerings in the shroud housing.

The SMPPM bullet adapter provides the same coveted blind mate functionality as the larger SMP size connectors, mitigating axial and radial misalignment with negligible change to VSWR and other signal losses. The SMPPM-series is perfect for use in test equipment, instrumentation, phased array radar and MIMO and active antenna applications.

Key Features & Benefits

- 35% smaller than SMP connectors
- DC-65GHz
- Bullet adapter provides blind mate capabilities
- Excellent electrical performance with axial and radial misalignment
- Available in PC mount, end launch and cabled styles



Estimated spacing between two mated boards connected via PC mount and bullet adapters

Specifications

The Johnson SMPM Connector Family provides an excellent solution for demanding applications requiring high frequency transmission.

- Precision manufacturing allows superior electrical performance of 1.15 to 18 GHz, 1.25 to 40 GHz and 1.45 to 65 GHz.
- Connector mating interface per MIL-STD-348A
- Mating interface control provides consistent electrical performance.
- Available in end launch, board mount, flange mount, vertical launch, cabled connector and bullet adapter/ between series adapter styles

Electrical Specification

| | | | | |
|---|---|---------------------------------|------------------------------------|------------------------------------|
| Impedance | 50 ohms | | | |
| Frequency Range: | Bullet adapter, semi-rigid straight cabled connectors | 0-40 GHz | | |
| | All other in-series adapters and connectors | 0-18 GHz | | |
| VSWR: (maximum) | Bullet adapter: | $\frac{0-18 \text{ GHz}}{1.15}$ | $\frac{18-40 \text{ GHz}}{1.25}$ | $\frac{40-65 \text{ GHz}}{1.45}$ |
| | Connectors: | $\frac{0-20 \text{ GHz}}{1.20}$ | $\frac{20-26.5 \text{ GHz}}{1.25}$ | $\frac{26.5-40 \text{ GHz}}{1.30}$ |
| Note: See drawing for additional specifications | | | | |
| Insertion Loss: (dB maximum, tested at 10GHz) | Adapters and connectors | 0.10 √ F (GHz) | | |
| Working Voltage: | 335 Vrms maximum at sea level, 65 Vrms maximum at 70,000 feet | | | |
| Dielectric Withstanding Voltage: | 500 Vrms minimum at sea level | | | |
| RF High Potential Withstanding Voltage: | 325 Vrms minimum at sea level, tested at 4 and 7MHz | | | |
| Corona Level: | 190 Vrms minimum at 70,000 feet | | | |
| Contact Resistance: (milliohms maximum initial, not applicable after environmental testing) | Inner conductor | 6.0 | | |
| | Outer conductor | 2.0 | | |
| Insulation Resistance: | 5000 megohms minimum | | | |
| RF Leakage: | Adapters and connectors | -80 | | |

Mechanical Specification

Interface Design: MIL-STD-348A, Series SMPM

| | | | |
|---|---|--------------------|----------------|
| Engagement Force (pounds maximum, mated pair) | Full detent (FD) | 15.0 | |
| | Limited detent (LD) | 10.0 | |
| | Smooth bore and catcher's mitt (SB and CM) | 2.0 | |
| Disengagement Force (pounds minimum, mated pair) | Full detent (FD) | 5.0 | |
| | Limited detent (LD) | 2.0 | |
| | Smooth bore and catcher's mitt (SB and CM) | 0.5 | |
| Mated Radial Misalignment (inches maximum allowed) | Between centerlines of mating planes (FD,LD, SB) | 0.010" | |
| | Between centerlines of mating planes (CM only) | 0.020" | |
| Mated Axial Misalignment | 010 inches maximum allowed between mating planes (female adapters only) | | |
| Durability (mating cycles minimum) | Full detent (all connectors and adapters) | 100 | |
| | Limited detent | 500 | |
| | Smooth bore and catcher's mitt | 1000 | |
| Contact Retention | 1.5 pounds minimum axial force (captivated contact) | | |
| Cable Retention: (minimum) | | Axial Force* (lbs) | Torque (in-oz) |
| | Cabled connectors for RG-405 (0.086 semi-rigid) | 30 | 16.0 |
| | Cabled connectors for M17/151 (0.047 semi-rigid) | 20 | N/A |

*Or cable breaking strength, whichever is less

Environmental Specification

Meets or exceeds the applicable paragraph of MIL-PRF-39012

| | |
|-------------------------|--|
| Operating temperature | -65°C to +165°C |
| Thermal shock | MIL-STD-202, Method 107, Condition B (except high temp +165°C or max high temp of cable) |
| Corrosion | MIL-STD-202, Method 101, Condition B |
| Vibration | MIL-STD-202, Method 204, Condition D |
| Shock (specified pulse) | MIL-STD-202, Method 213, Condition I |
| Moisture resistance | MIL-STD-202, Method 106 (except step 7b) |

Mechanical Specification

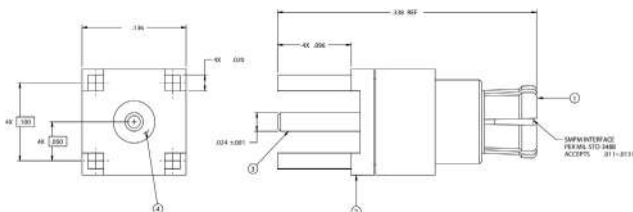
| | |
|--|---|
| Bodies: 348A, Series SMP | Beryllium copper per ASTM B196, gold* plated per MIL-DTL-45204 (0.00005" min) |
| Hermetic seal bodies (male) | Kovar alloy per ASTM F15, gold* plated per MIL-DTL-45204 (0.00005" min) |
| All other shroud bodies (male) | Stainless steel, type 303, per ASTM A582, passivated per MIL-DTL-14072 (EL 300) |
| Connector and adapter contacts (male and female) | Beryllium copper per ASTM B196, gold* plated per MIL-DTL-45204 (0.00005" min) |
| Hermetic seal center pins | Kovar alloy per ASTM F15, gold* plated per MIL-DTL-45204 (0.00005" min) |
| EML/anti-rock rings | Beryllium copper per ASTM B196, gold* plated per MIL-DTL-45204 (0.00003" min) |
| PC mount legs | Brass per ASTM B16, gold* plated per MIL-DTL-45204 (0.00003" min) |
| Connector and adapter insulators | Brass per ASTM B16, gold* plated per MIL-DTL-45204 (0.00003" min) |
| Hermetic seal glass | Corning 7070 |

*All gold plated parts include a 0.00005" minimum nickel barrier layer

PCB Mount Connectors

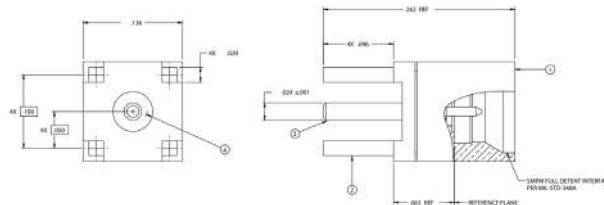
Straight PC mount, female

| Part Number | Material | VSWR | Frequency Range |
|--------------|-------------|--------------------------|-----------------|
| 125-0801-201 | Gold Plated | Dependent on application | 0 - 40 GHz |



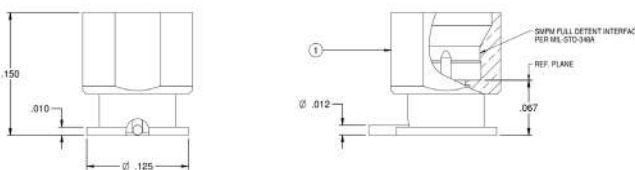
Straight PC mount male

| Part Number | Material | Interface | VSWR | Frequency Range |
|--------------|-------------|-------------|--------------------------|-----------------|
| 125-0701-201 | Gold Plated | Full Detent | Dependent on application | 0 - 40 GHz |
| 125-2701-201 | Gold Plated | Smooth Bore | Dependent on application | 0 - 40 GHz |



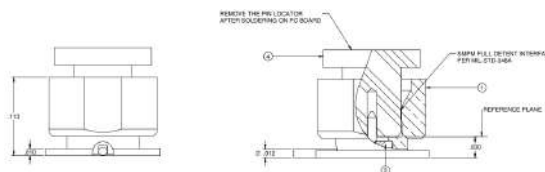
Straight PC Mount, male, 0.150" height (Low Profile)

| Part Number | Material | Interface | VSWR | Frequency Range |
|--------------|-------------|-------------|--------------------------|-----------------|
| 125-0701-211 | Gold Plated | Full Detent | Dependent on application | 0 - 20 GHz |



Straight PC Mount, male, 0.113" height (Super Low Profile)

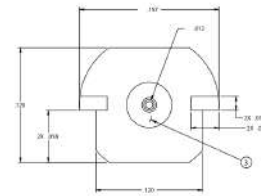
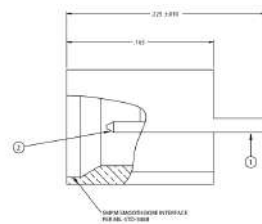
| Part Number | Material | Interface | VSWR | Frequency Range |
|--------------|-------------|-------------|--------------------------|-----------------|
| 125-0701-221 | Gold Plated | Full Detent | Dependent on application | 0 - 20 GHz |



End Launch Connectors

End Launch Male

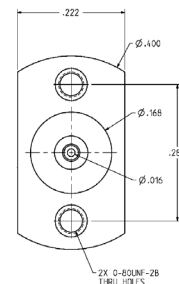
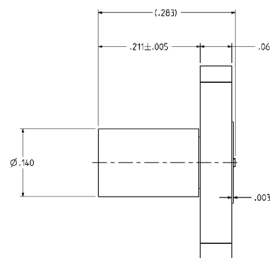
| Part Number | Material | Interface | VSWR | Frequency Range |
|--------------|-------------|-------------|--------------------------|-----------------|
| 125-0701-801 | Gold Plated | Full Detent | Dependent on application | 0 - 40 GHz |
| 125-2701-801 | Gold Plated | Smooth Bore | Dependent on application | 0 - 40 GHz |



Vertical Launch Connectors

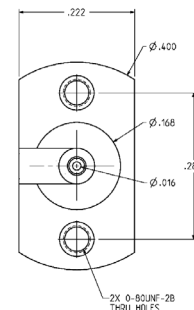
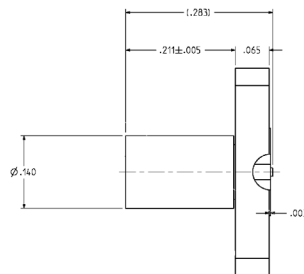
SMPM Compression Connector, Microstrip

| Part Number | Material | Impedance | VSWR | Frequency Range |
|--------------|-------------|-----------|------------------------------|-----------------|
| 125-0701-241 | Gold-Plated | 50 Ohms | 1.4 Typical from DC - 50 GHz | DC - 65 GHz |



SMPM Compression Connector, Stripline

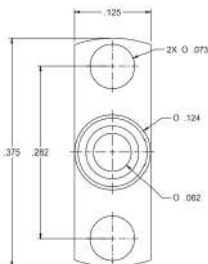
| Part Number | Material | Impedance | Maximum Frequency | VSWR |
|--------------|-------------|-----------|-------------------|------------------------------|
| 125-0701-251 | Gold-Plated | 50 Ohms | DC - 65 GHz | 1.4 Typical from DC - 50 GHz |



Flange Mount Connectors

2-hole flange mount male shroud, full detent

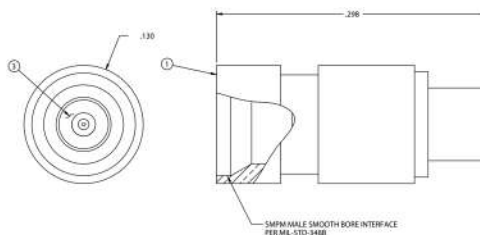
| Part Number | Material | Interface | Frequency Range |
|--------------|-------------|-------------|-----------------|
| 125-0701-602 | Gold Plated | Full Detent | DC - 40 GHz |
| 125-2701-602 | Gold Plated | Smooth Bore | DC - 40 GHz |



0.047" Cable Connectors

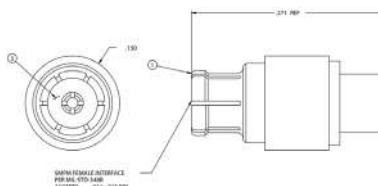
Straight male for 0.047" semi-rigid cable

| Part Number | Material | Interface | VSWR | Frequency Range |
|--------------|-------------|-------------|--|-----------------|
| 125-0592-001 | Gold Plated | Full Detent | 1.15 Max to 26.5 GHz 1.30 Max to 40 GHz | DC - 40 GHz |
| 125-2592-001 | Gold Plated | Smooth Bore | 1.15 Max to 26.5 GHz 1.30 Max to 40 GHz | DC - 40 GHz |



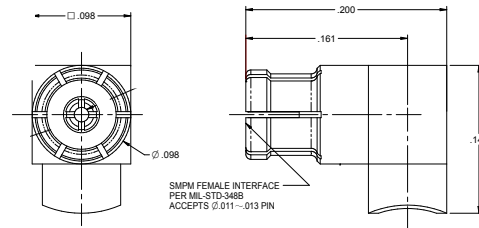
Straight female for 0.047" cable

| Part Number | Material | VSWR | Frequency Range |
|--------------|-------------|------------------------------------|-----------------|
| 125-0692-001 | Gold Plated | 1.15 to 26.5 GHz 1.30 to 40 GHz | DC - 40 GHz |



Low profile right-angled female for 0.047" cable, full detent

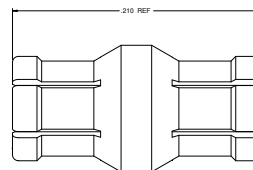
| Part Number | Material | VSWR | Frequency Range |
|--------------|-------------|----------------------------------|-----------------|
| 125-0692-111 | Gold Plated | 1.10 to 10 GHz 1.25 to 20 GHz | DC - 20 GHz |



0.086" Cable Connectors

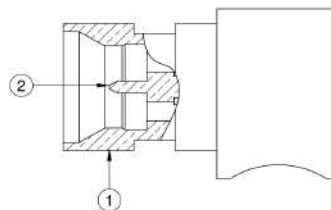
Straight male for 0.086" semi-rigid cable, full detent

| Part Number | Material | VSWR | Frequency Range |
|--------------|-------------|----------------------------------|----------------------------|
| 125-0593-001 | Gold Plated | 1.15 Max 1.25 Max 1.45 Max | 18 GHz 40 GHz 65 GHz |



Right angle male for 0.086" semi-rigid cable, full detent

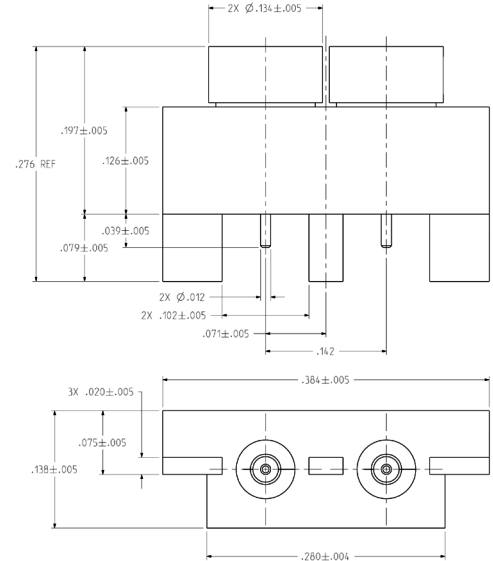
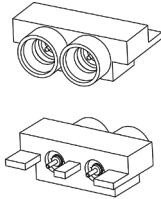
| Part Number | Material | VSWR | Frequency Range |
|--------------|-------------|----------------------------------|-----------------|
| 125-0593-101 | Gold Plated | 1.10 to 10 GHz 1.25 to 20 GHz | DC - 40 GHz |



Ganged Edge Mount Connectors

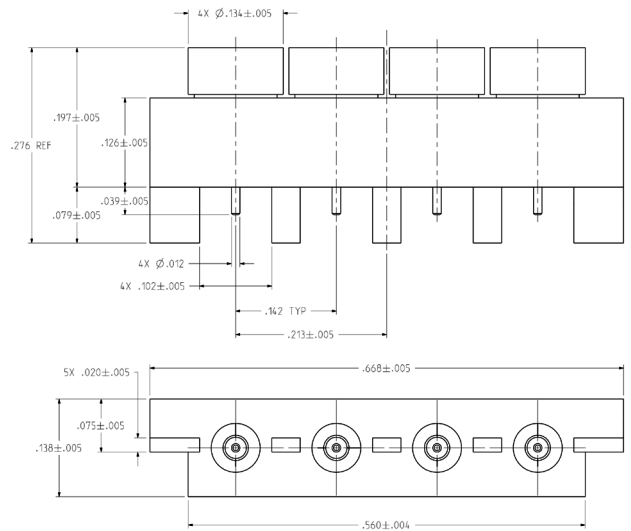
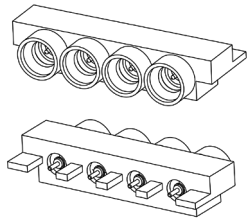
Male, Full Detent, PCB Edge Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|----------|-----------------|
| 125-0701-821 | 2 | Full Detent | 1.15 Max | 0 - 65 GHz |



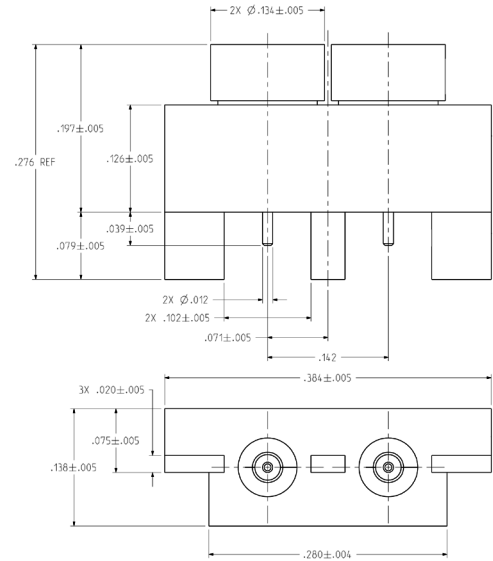
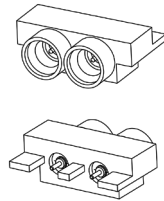
Male, Full Detent, PCB Edge Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|----------|-----------------|
| 125-0701-831 | 4 | Full Detent | 1.15 Max | 0 - 65 GHz |



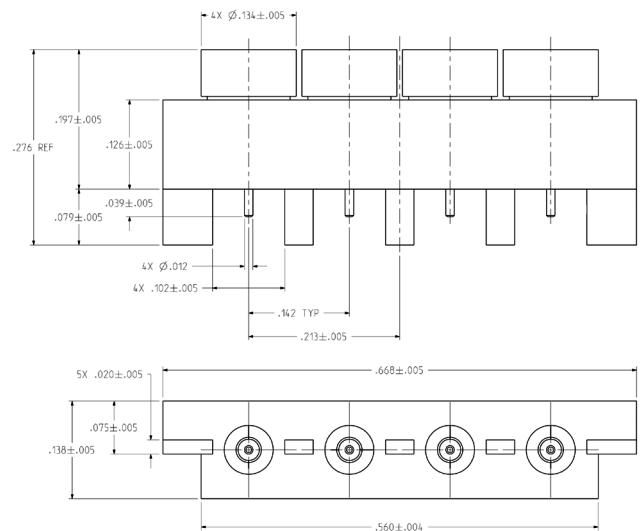
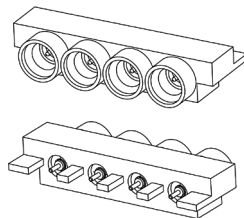
Male, Smooth Bore, PCB Edge Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|----------|-----------------|
| 125-2701-811 | 2 | Smooth Bore | 1.15 Max | 0 - 65 GHz |



Male, Smooth Bore, PCB Edge Mount

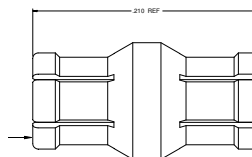
| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|----------|-----------------|
| 125-2701-821 | 4 | Smooth Bore | 1.15 Max | 0 - 65 GHz |



Blind Mate Interconnect

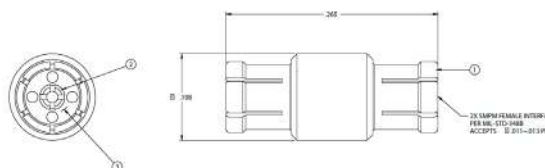
Bullet adapter, 0.210" Length

| Part Number | Material | VSWR | Frequency Range |
|--------------|-------------|----------------------------------|---|
| 125-0901-811 | Gold Plated | 1.15 Max 1.25 Max 1.45 Max | DC – 18 GHz 18 – 40 GHz 40 – 65 GHz |



Bullet adapter, 0.265" Length

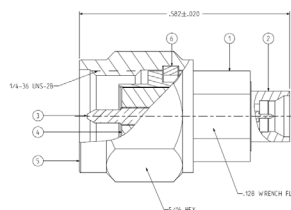
| Part Number | Material | VSWR | Frequency Range |
|--------------|-------------|----------------------------------|---|
| 125-0901-801 | Gold Plated | 1.15 Max 1.25 Max 1.45 Max | DC – 18 GHz 18 – 40 GHz 40 – 65 GHz |



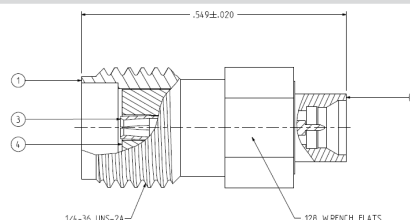
Between Series Adapters

SMA-SMPM Adapters

| Part Number | Interface | VSWR | Frequency |
|--------------|-----------------------|----------------------|------------------------------|
| 134-1001-001 | SMA Plug to SMPM Plug | 1.20 Max 1.25 Max | DC - 20 GHz 20 - 26.5 GHz |
| 134-1001-002 | SMA Plug to SMPM Jack | 1.20 Max 1.25 Max | DC - 20 GHz 20 - 26.5 GHz |

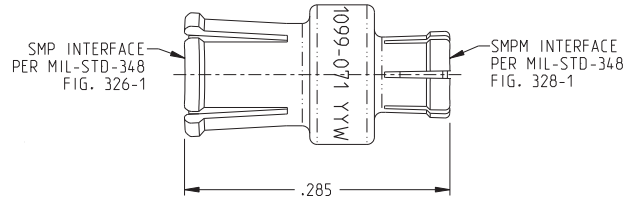


| Part Number | Interface | VSWR | Frequency |
|--------------|-----------------------|----------------------|------------------------------|
| 134-1001-003 | SMA Jack to SMPM Jack | 1.20 Max 1.25 Max | DC - 20 GHz 20 - 26.5 GHz |
| 134-1001-004 | SMA Jack to SMPM Plug | 1.20 Max 1.25 Max | DC - 20 GHz 20 - 26.5 GHz |



SMP-SMPPM Adapters

| Part Number | Interface | VSWR | Frequency |
|--------------|------------------------|----------------------------------|---|
| 134-1099-071 | SMP Jack to SMPPM Plug | 1.15 Max 1.25 Max 1.45 Max | DC - 18 GHz 18 - 26.5 GHz 26.5 - 40 GHz |



Tools

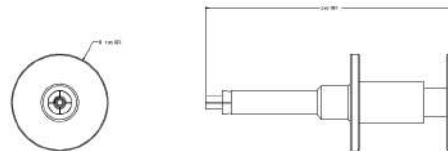
SMPPM extraction tool for cabled connectors

| Part Number | Material |
|--------------|-------------|
| 125-0000-900 | Gold Plated |



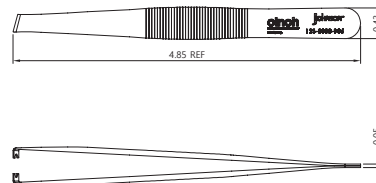
SMPPM bullet adapter installation/extraction tool

| Part Number | Material |
|--------------|-------------|
| 125-0000-901 | Gold Plated |



SMPPM bullet extraction removal tool

| Part Number | Material |
|--------------|-------------|
| 125-0000-906 | Gold Plated |



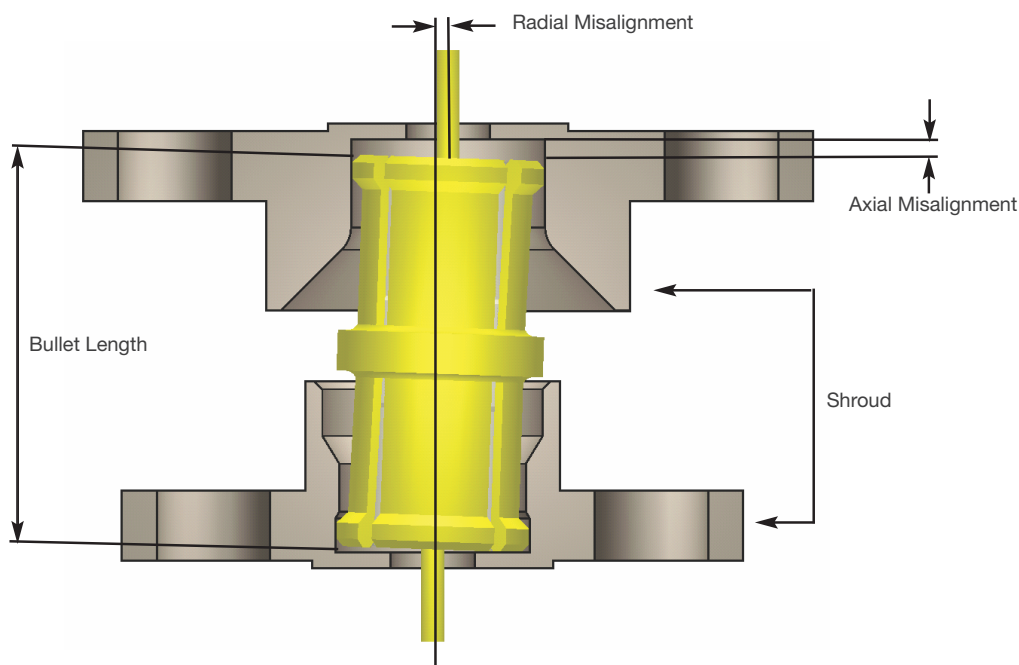
Introduction

Cinch Connectivity Solutions offers the Johnson line of industry standard SMP connectors. The sub-miniature, push-on connector interface is known for its micro miniature size and its blind mate capability. The smaller profile allows design engineers to fit the interconnects into dense packaging area. Blind mate means to accommodate for an up to 9 degree axial and radial misalignment with minimal impact on VSWR performance. This makes it ideal for application with shock and vibration. SMP has intermate compatibility with the Corning Gilbert GPO and other industry SMP connectors.

The SMP family offers connectors in various form factors including: End Launch, PC mount thru hole and surface mount, Vertical Launch (solderless compression mount), 2 hole flange, 4 hole flange, Ganged 2 port and 4 port in Vertical, Right Angle and Edge Launch, Straight and Right Angle cabled connectors for 0.086" and 0.047" cable types. The female-female bullet adapter is available in different lengths. Johnson offers shroud types: Full Detent, Limited Detent, Smooth Bore, and Catcher's Mitt. The family additionally provides between series adapters SMA-SMP, SMP-SMPM, 2.92mm-SMP, 2.4mm-SMP.

SMP connectors exhibit excellent return loss performance at frequencies from DC to 40 GHz. The design of the SMP bullet and shroud system allows for both axial and radial misalignment. The basic system is comprised of an inner "bullet" adapter, and two outer receptacles called "shrouds". The bullet provides a flexible link between the shroud connections. In blind-mate applications, one shroud connector will be typically specified as a snap-on interface and the other as a slide-on. This ensures that the bullet adapter remains fixed in the same shroud connector when the connection is disengaged.

The two snap-on interfaces Full Detent (FD) and Limited Detent (LD) each have different engage and disengage coupling forces. The LD is typically selected as the snap-on interface in PCB mount or blind-mate applications, while the FD is mainly used for cabled connections where higher retention forces are required. The two slide-on interfaces Smooth Bore (SB) and Catcher's Mitt (CM) allow for reduced connection forces as compared to the snap-on versions. The push-on interface creates a sliding connection that does not physically locate the mating reference planes, allowing for axial and radial misalignment. Both the SB and CM have the same engage/disengage forces; however the CM is typically specified as the shroud configuration in blind-mate applications as its generous lead-in chamfer helps capture and guide the bullet into place.



Specifications

The Johnson SMP Connector Family provides an excellent solution for demanding applications requiring high frequency transmission.

- Precision manufacturing allows superior electrical performance > 40 GHz with VSWR performance to < 1.70 Max
- Connector mating interface per MIL-STD-348A
- Mating interface control provides consistent electrical performance.
- Available in end launch, board mount, flange mount, vertical launch, cabled connector and bullet adapter/ between series adapter styles

Electrical Specification

| | | | |
|---|---|------------------------------------|------------------------------------|
| Impedance | 50 ohms | | |
| Frequency Range: | Bullet adapter, semi-rigid straight cabled connectors | 0-40 GHz | |
| | All other in-series adapters and connectors | 0-18 GHz | |
| VSWR: (maximum) | Bullet adapter: | $\frac{0-18 \text{ GHz}}{1.10}$ | $\frac{18-26.5 \text{ GHz}}{1.30}$ |
| | Connectors: | $\frac{0-18 \text{ GHz}}{1.20}$ | $\frac{18-26.5 \text{ GHz}}{1.35}$ |
| | | $\frac{26.5-40 \text{ GHz}}{1.70}$ | $\frac{26.5-40 \text{ GHz}}{1.70}$ |
| | Note: See drawing for additional specifications | | |
| Insertion Loss: (dB maximum, tested at 10GHz) | Adapters and connectors | 0.10 √ F (GHz) | |
| Working Voltage: | 335 Vrms maximum at sea level, 65 Vrms maximum at 70,000 feet | | |
| Dielectric Withstanding Voltage: | 500 Vrms minimum at sea level | | |
| RF High Potential Withstanding Voltage: | 325 Vrms minimum at sea level, tested at 4 and 7MHz | | |
| Corona Level: | 190 Vrms minimum at 70,000 feet | | |
| Contact Resistance: (milliohms maximum initial, not applicable after environmental testing) | Inner conductor | 6.0 | |
| | Outer conductor | 2.0 | |
| Insulation Resistance: | 5000 megohms minimum | | |
| RF Leakage: | Adapters and connectors | -80 | |

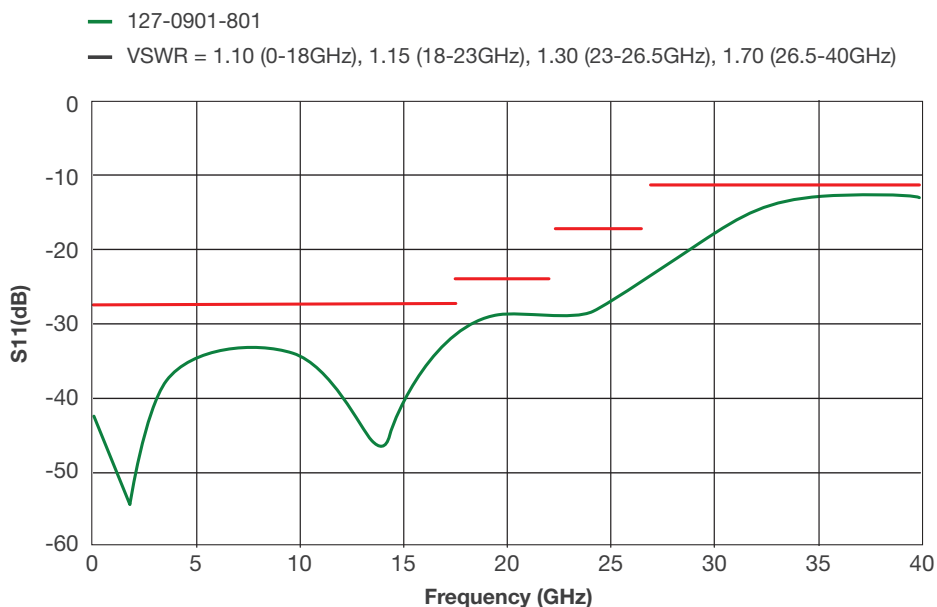
Mechanical Specification

Interface Design: MIL-STD-348A, Series SMP

| | | | |
|---|---|--------------------|----------------|
| Engagement Force (pounds maximum, mated pair) | Full detent (FD) | 15.0 | |
| | Limited detent (LD) | 10.0 | |
| | Smooth bore and catcher's mitt (SB and CM) | 2.0 | |
| Disengagement Force (pounds minimum, mated pair) | Full detent (FD) | 5.0 | |
| | Limited detent (LD) | 2.0 | |
| | Smooth bore and catcher's mitt (SB and CM) | 0.5 | |
| Mated Radial Misalignment (inches maximum allowed) | Between centerlines of mating planes (FD,LD, SB) | 0.010" | |
| | Between centerlines of mating planes (CM only) | 0.020" | |
| Mated Axial Misalignment | 010 inches maximum allowed between mating planes (female adapters only) | | |
| Durability (mating cycles minimum) | Full detent (all connectors and adapters) | 100 | |
| | Limited detent | 500 | |
| | Smooth bore and catcher's mitt | 1000 | |
| Contact Retention | 1.5 pounds minimum axial force (captivated contact) | | |
| Cable Retention: (minimum) | | Axial Force* (lbs) | Torque (in-oz) |
| | Cabled connectors for RG-405 (0.086 semi-rigid) | 30 | 16.0 |
| | Cabled connectors for M17/151 (0.047 semi-rigid) | 20 | N/A |

*Or cable breaking strength, whichever is less

Typical Measured Return Loss Bullet Adapter 127-0901-801



Environmental Specification

Meets or exceeds the applicable paragraph of MIL-PRF-39012

| | |
|-------------------------|--|
| Operating temperature | -65°C to +165°C |
| Thermal shock | MIL-STD-202, Method 107, Condition B (except high temp +165°C or max high temp of cable) |
| Corrosion | MIL-STD-202, Method 101, Condition B |
| Vibration | MIL-STD-202, Method 204, Condition D |
| Shock (specified pulse) | MIL-STD-202, Method 213, Condition I |
| Moisture resistance | MIL-STD-202, Method 106 (except step 7b) |

Mechanical Specification

| | |
|--|---|
| Bodies: 348A, Series SMP | Beryllium copper per ASTM B196, gold* plated per MIL-DTL-45204 (0.00005" min) |
| Hermetic seal bodies (male) | Kovar alloy per ASTM F15, gold* plated per MIL-DTL-45204 (0.00005" min) |
| All other shroud bodies (male) | Stainless steel, type 303, per ASTM A582, passivated per MIL-DTL-14072 (EL 300) |
| Connector and adapter contacts (male and female) | Beryllium copper per ASTM B196, gold* plated per MIL-DTL-45204 (0.00005" min) |
| Hermetic seal center pins | Kovar alloy per ASTM F15, gold* plated per MIL-DTL-45204 (0.00005" min) |
| EMI/anti-rock rings | Beryllium copper per ASTM B196, gold* plated per MIL-DTL-45204 (0.00003" min) |
| PC mount legs | Brass per ASTM B16, gold* plated per MIL-DTL-45204 (0.00003" min) |
| Connector and adapter insulators | Brass per ASTM B16, gold* plated per MIL-DTL-45204 (0.00003" min) |
| Hermetic seal glass | Corning 7070 |

*All gold plated parts include a 0.00005" minimum nickel barrier layer

Mounting Holes

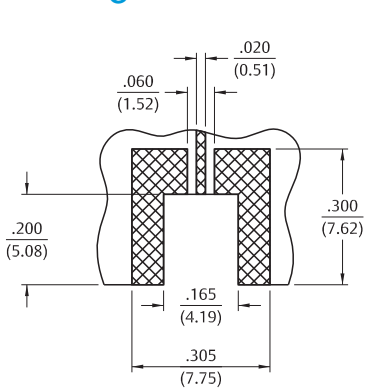


Figure 1

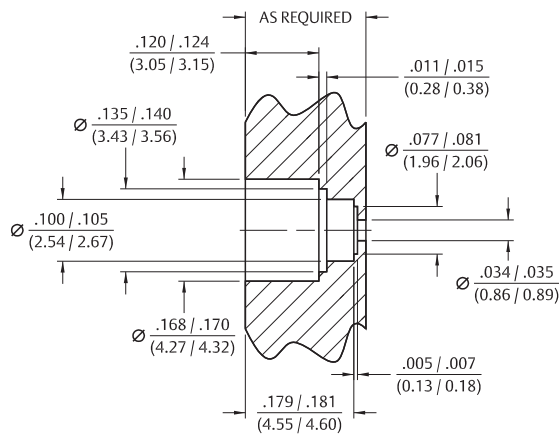


Figure 2

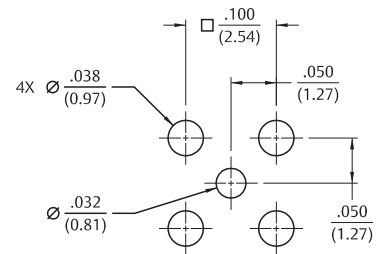
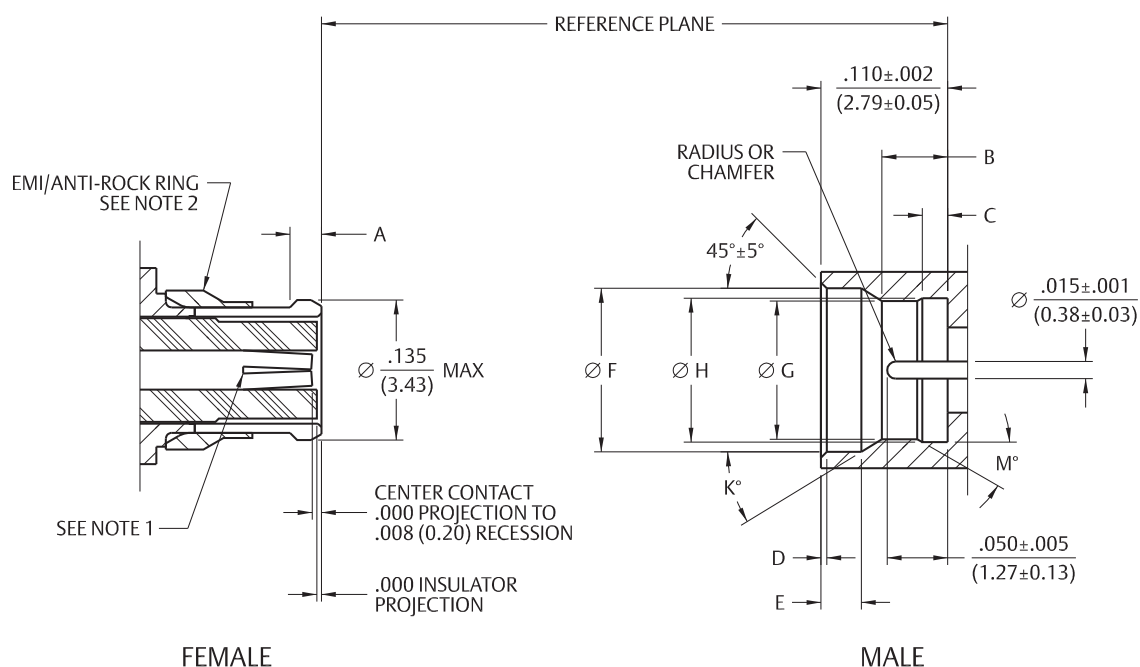


Figure 3

*This pattern is for reference only. Pattern will vary depending on board type and specific electrical and mechanical requirements.

Mating Engagement for SMP Series per MIL-STD-348A



Notes:

1. Socket to accept mating pin $\text{Ø}0.015\pm0.001$ (0.38±0.03).
2. EMI/Anti-Rock Ring configuration optional, used on cabled connectors only. Shall not prevent proper mating engagement.
3. All dimensions shown in inches. Metric equivalents (rounded to nearest 0.01mm) are given for general information only.

SMP Female Connector Interface

| Dimension | Cabled | | Uncabled | |
|-----------|--------------|--------------|--------------|--------------|
| | Minimum | Maximum | Minimum | Maximum |
| A | 0.025 (0.64) | 0.035 (0.89) | 0.018 (0.46) | 0.025 (0.64) |

SMP Male Connector Interface

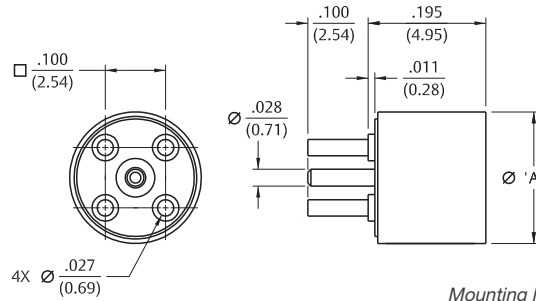
| Dimension | Full Detent | | Limited Detent | | Smooth Bore | | Catcher's Mitt | |
|-----------|---------------|---------------|----------------|---------------|--------------|--------------|----------------|--------------|
| | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum |
| B | 0.051 (1.30) | 0.057 (1.45) | 0.054 (1.37) | 0.060 (1.52) | 0.059 (1.50) | 0.065 (1.65) | N/A | N/A |
| C | 0.0205 (0.52) | 0.0235 (0.60) | 0.0205 (0.52) | 0.0235 (0.60) | N/A | N/A | N/A | N/A |
| D | 0.003 (0.08) | 0.008 (0.20) | 0.003 (0.08) | 0.008 (0.20) | 0.003 (0.08) | 0.008 (0.20) | 0.043 (1.09) | 0.047 (1.19) |
| E | 0.033 (0.84) | 0.037 (0.94) | 0.033 (0.84) | 0.037 (0.94) | 0.033 (0.84) | 0.037 (0.94) | N/A | N/A |
| F | 0.139 (3.53) | 0.145 (3.68) | 0.139 (3.53) | 0.145 (3.68) | 0.139 (3.53) | 0.145 (3.68) | 0.123 (3.12) | 0.127 (3.23) |
| G | 0.114 (2.90) | 0.118 (3.00) | 0.118 (3.00) | 0.122 (3.10) | 0.123 (3.12) | 0.127 (3.23) | N/A | N/A |
| H | 0.124 (3.15) | 0.126 (3.20) | 0.124 (3.15) | 0.126 (3.20) | N/A | N/A | N/A | N/A |
| K | 35° REF | 35° REF | 35° REF | 35° REF | 35° REF | 35° REF | N/A | N/A |
| M | 30° REF | 30° REF | 30° REF | 30° REF | N/A | N/A | N/A | N/A |

PCB Mount Connectors

Straight PCMount Male Receptacle

| Part Number | Material | Interface | Frequency Range | "A" |
|--------------|-------------|----------------|-----------------|--------------|
| 127-0701-201 | Passivated* | Full Detent | 0-12GHz | 0.218 (5.54) |
| 127-1701-201 | Passivated* | Limited Detent | 0-12GHz | 0.218 (5.54) |
| 127-2701-201 | Passivated* | Smooth Bore | 0-12GHz | 0.218 (5.54) |
| 127-3701-201 | Passivated* | Catcher's Mitt | 0-12GHz | 0.234 (5.94) |

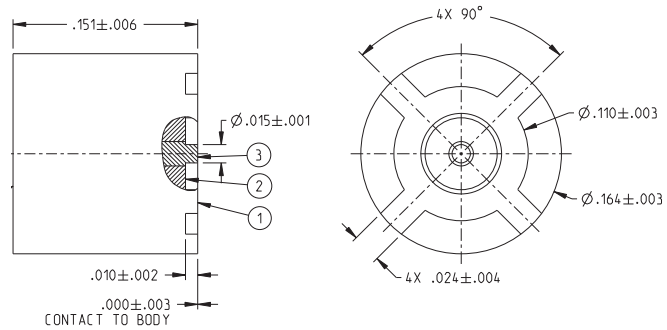
* Base and legs gold plated brass



Mounting hole layout figure 3 on page 6

SMP Male, Straight Surface Mount

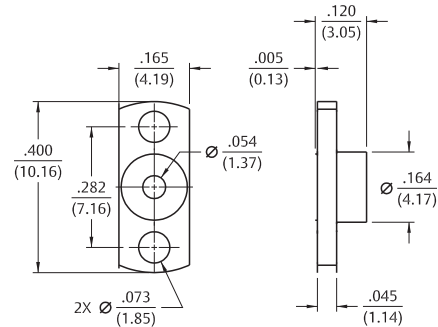
| Part Number | Material | Interface | Impedance | VSWR | Maximum Frequency |
|--------------|-------------|----------------|-----------|---------|-------------------|
| 127-0701-221 | Gold-Plated | Full Detent | 50 Ohms | 1.5 Max | 18 GHz |
| 127-1701-221 | Gold-Plated | Limited Detent | 50 Ohms | 1.5 Max | 18 GHz |
| 127-2701-221 | Gold-Plated | Smooth Bore | 50 Ohms | 1.5 Max | 18 GHz |



Flange Mount Connectors

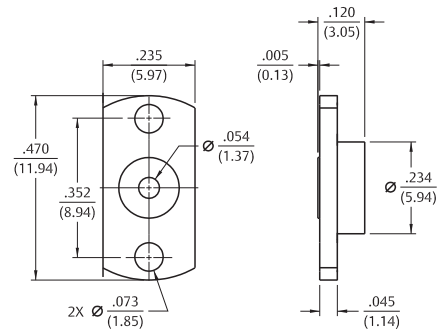
2-Hole Flange Mount Male Shroud - Without Contact

| Part Number | Material | Interface |
|--------------|------------|----------------|
| 127-0701-602 | Passivated | Full Detent |
| 127-1701-602 | Passivated | Limited Detent |
| 127-2701-602 | Passivated | Smooth Bore |



2-Hole Flange Mount Male Catcher's Mitt Shroud - Without Contact

| Part Number | Material | Interface |
|--------------|------------|----------------|
| 127-3701-602 | Passivated | Catcher's Mitt |

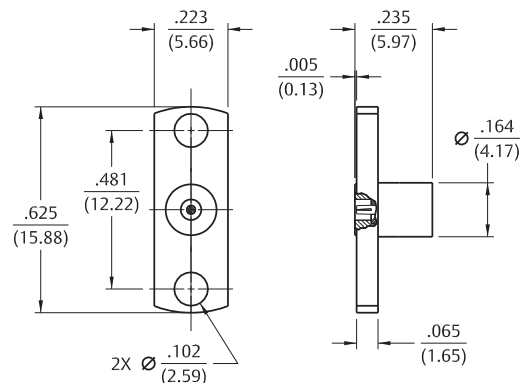


Mounting hole layout figure 1 on page 6

2-Hole Flange Mount Male Field Replaceable

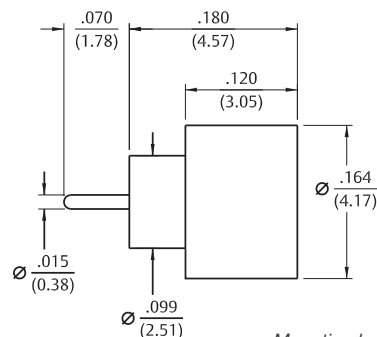
| Part Number | Material | Interface | VSWR | Frequency Range* | Accepts Pin Size |
|--------------|------------|----------------|--------------|------------------|------------------|
| 127-0701-612 | Passivated | Full Detent | 1.15 typical | 0-18 GHz | 0.012 (0.030) |
| 127-1701-612 | Passivated | Limited Detent | 1.15 typical | 0-18 GHz | 0.012 (0.030) |
| 127-2701-612 | Passivated | Smooth Bore | 1.15 typical | 0-18 GHz | 0.012 (0.030) |

* Two connectors mated back to back with hermetic seal fixture



Hermetic Seal

| Part Number | Material | Interface | Frequency Range |
|--------------|-------------|----------------|-----------------|
| 127-0701-601 | Gold Plated | Full Detent | 0-18 GHz |
| 127-1701-601 | Gold Plated | Limited Detent | 0-18 GHz |
| 127-2701-601 | Gold Plated | Smooth Bore | 0-18 GHz |



Mounting hole layout figure 2 on page 7

0.047" Cable Connectors

| Part Number | Material | Cable Type | VSWR | Frequency Range* | Figure |
|--------------|-------------|---------------------------------------|----------------------------------|--|--------|
| 127-0692-001 | Gold Plated | M17/151, 0.047 Semi-Rigid Straight | 1.20 max 1.35 max 1.70 max | 0-18 GHz 18-26.5 GHz 26.5-40 GHz | 1 |
| 127-0692-101 | Gold Plated | M17/151, 0.047 Semi-Rigid Right Angle | 1.20 max 0-18 GHz | 127-0692-101 | 2 |

* Specifications dependent on cable ratings

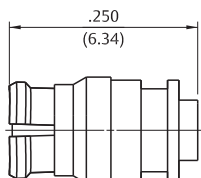


Figure 1
0.047"

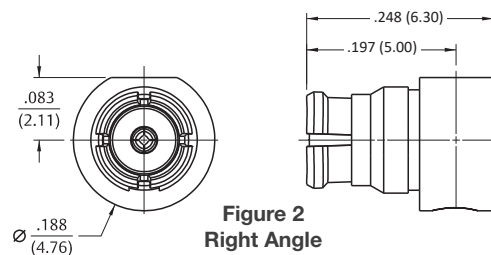


Figure 2
Right Angle

0.086" Cable Connectors

| Part Number | Material | Cable Type | VSWR | Frequency Range* | Figure |
|--------------|-------------|--------------------------------------|----------------------------------|--|--------|
| 127-0693-001 | Gold Plated | RG-405, 0.086 Semi-Rigid Straight | 1.20 max 1.35 max 1.70 max | 0-18 GHz 18-26.5 GHz 26.5-40 GHz | 3 |
| 127-0693-101 | | RG-405, 0.086 Semi-Rigid Right Angle | 1.20 max 0-18GHz | 127-0693-101 | 4 |

* Specifications dependent on cable ratings

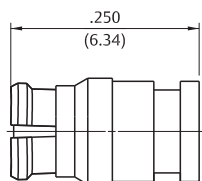


Figure 3
0.086"

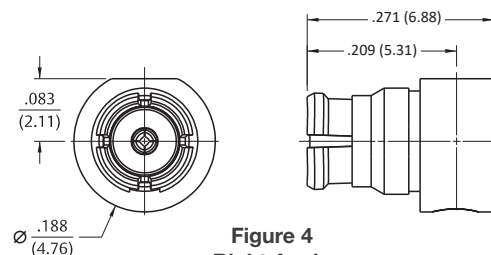
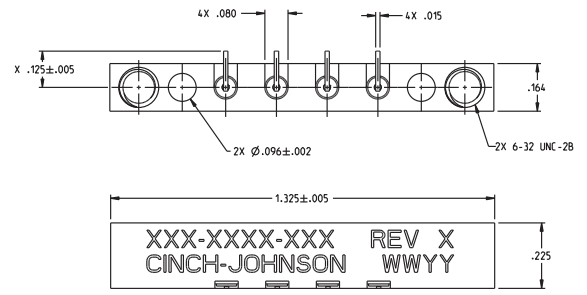
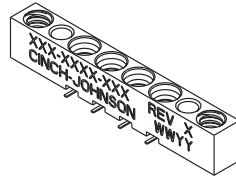


Figure 4
Right Angle

Ganged Connectors

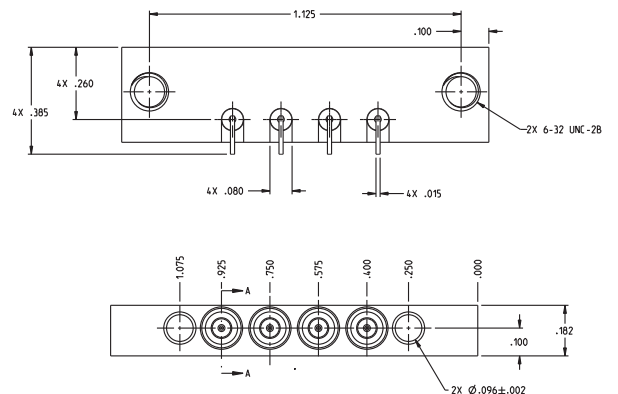
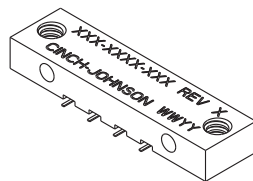
Male, Full Detent, Vertical PCB Surface Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|----------------------|-----------------------------|
| 127-0711-221 | 4 | Full Detent | 1.25 Max 1.50 Max | 0 - 18 GHz 18 - 26.5 GHz |



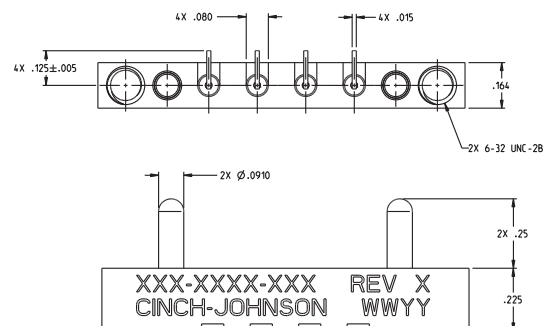
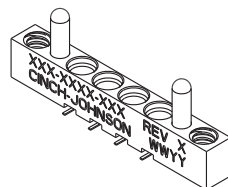
Male, Full Detent, Right Angle PCB Surface Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|----------------------|-----------------------------|
| 127-0711-321 | 4 | Full Detent | 1.25 Max 1.50 Max | 0 - 18 GHz 18 - 26.5 GHz |



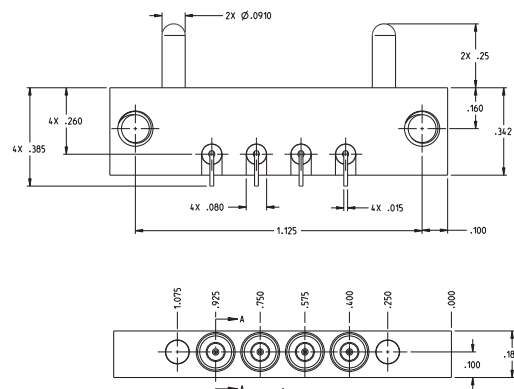
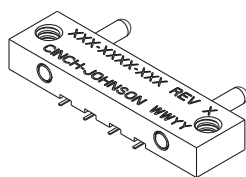
Male, Smooth Bore/Limited Detent, Vertical PCB Surface Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|----------------|----------------------|-----------------------------|
| 127-2711-221 | 4 | Smooth Bore | 1.25 Max 1.50 Max | 0 - 18 GHz 18 - 26.5 GHz |
| 127-1721-221 | 4 | Limited Detent | 1.25 Max 1.50 Max | 0 - 18 GHz 18 - 26.5 GHz |



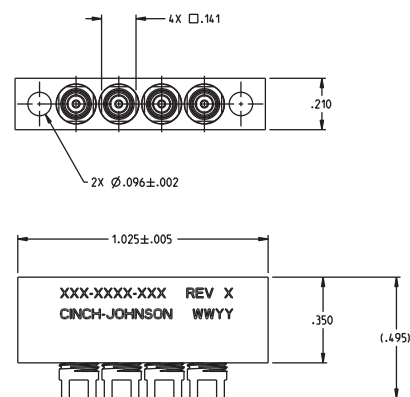
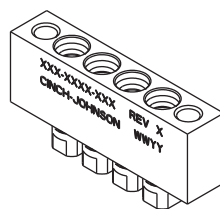
Male, Smooth Bore/Limited Detent Right Angle PCB Surface Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|----------------|----------------------|-----------------------------|
| 127-2711-321 | 4 | Smooth Bore | 1.25 Max 1.50 Max | 0 - 18 GHz 18 - 26.5 GHz |
| 127-1721-321 | 4 | Limited Detent | 1.25 Max 1.50 Max | 0 - 18 GHz 18 - 26.5 GHz |



Male, Full Detent, Cabled

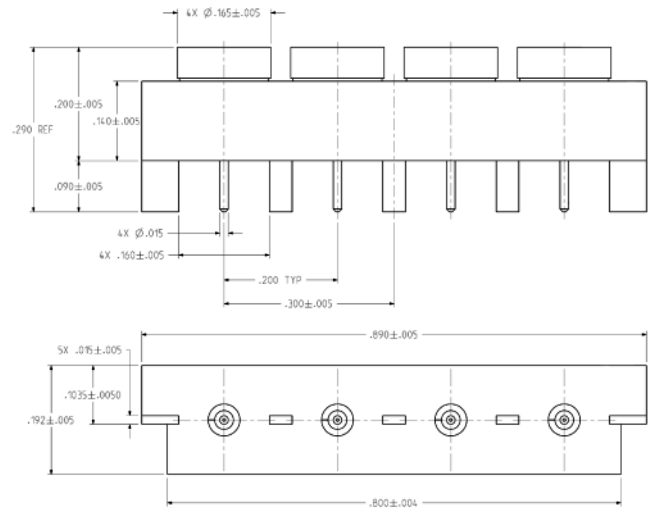
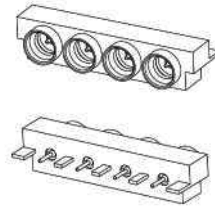
| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|----------------------------------|--|
| 127-0593-011 | 4 | Full Detent | 1.25 Max 1.35 Max 1.50 Max | 0 - 18 GHz 18 - 26.5 GHz 26.5 - 40 GHz |



Ganged Edge Mount Connectors

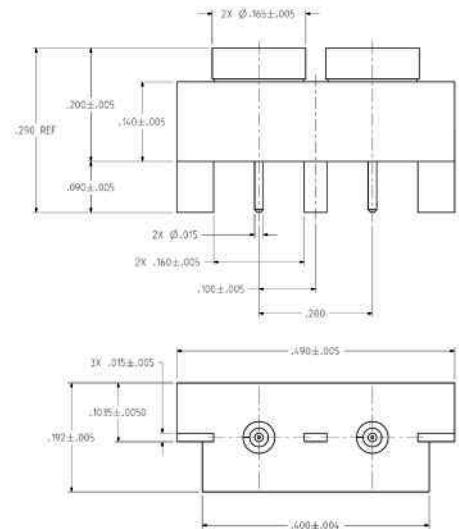
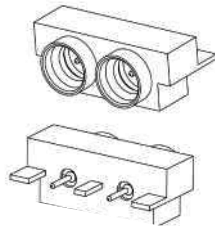
Male, Full Detent, PCB Edge Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|---------|-----------------|
| 127-0701-811 | 4 | Full Detent | 1.5 Max | 0 - 40 GHz |



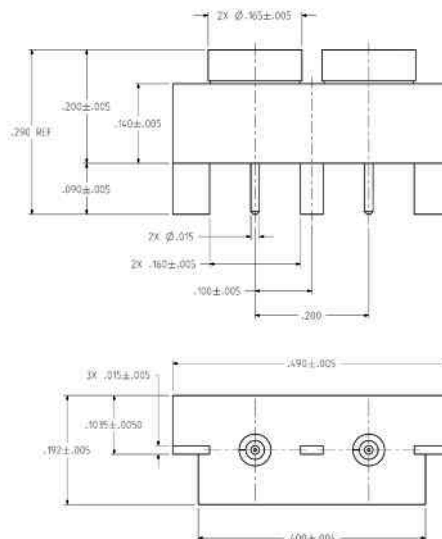
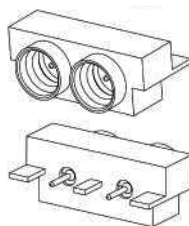
Male, Full Detent, PCB Edge Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|---------|-----------------|
| 127-0701-821 | 2 | Full Detent | 1.5 Max | 0 - 40 GHz |



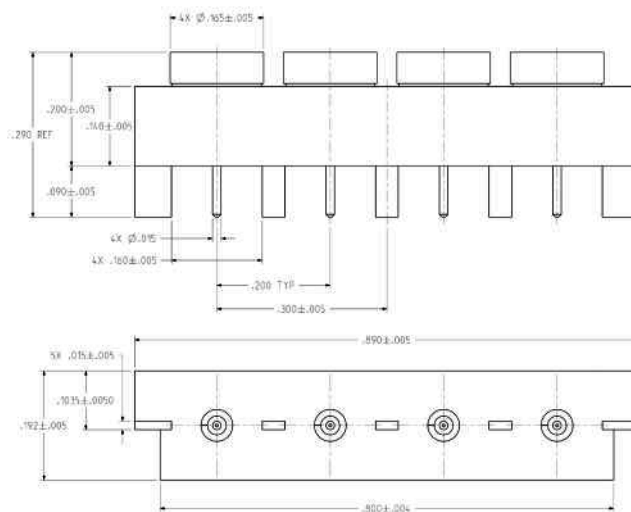
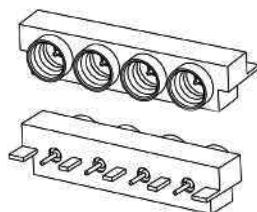
Male, Limited Detent, PCB Edge Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|----------------|---------|-----------------|
| 127-1701-821 | 2 | Limited Detent | 1.5 Max | 0 - 40 GHz |



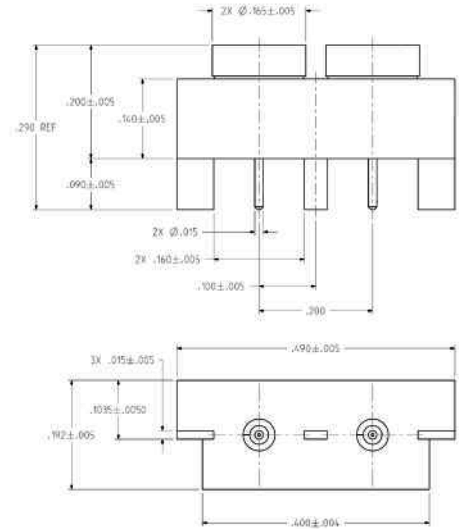
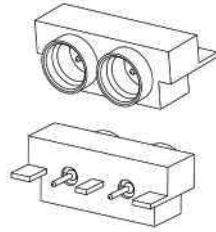
Male, Limited Detent, PCB Edge Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|----------------|---------|-----------------|
| 127-1701-831 | 4 | Limited Detent | 1.5 Max | 0 - 40 GHz |



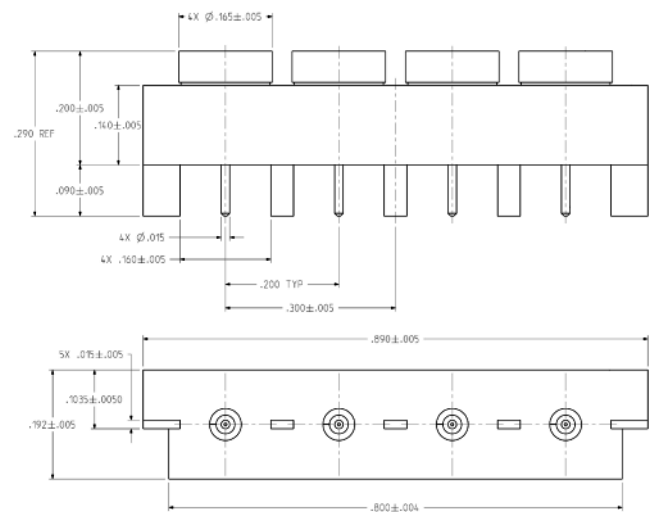
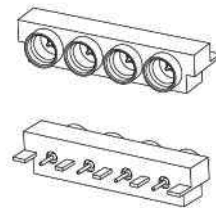
Male, Smooth Bore, PCB Edge Mount

| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|---------|-----------------|
| 127-2701-811 | 2 | Smooth Bore | 1.5 Max | 0 - 40 GHz |



Male, Smooth Bore, PCB Edge Mount

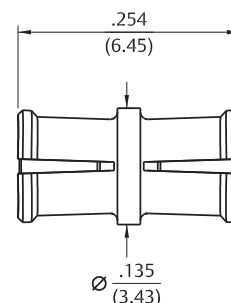
| Part Number | No. of Ports | Interface | VSWR | Frequency Range |
|--------------|--------------|-------------|---------|-----------------|
| 127-2701-821 | 4 | Smooth Bore | 1.5 Max | 0 - 40 GHz |



Blind Mate Interconnects

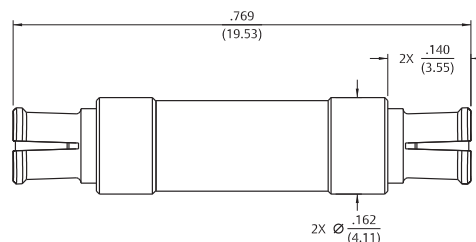
Female to Female Bullet Adapter

| Part Number | Material | VSWR | Frequency Range |
|--------------|-------------|--|---|
| 127-0901-801 | Gold Plated | 1.10 Max 1.15 Max 1.30 Max 1.70 Max | 0-18 GHz 18-23 GHz 23-26.5 GHz 26.5-40 GHz |



Female to Female Long Bullet Adapter

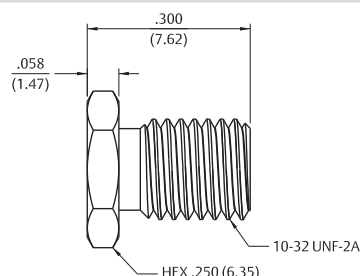
| Part Number | Material | VSWR | Frequency Range |
|--------------|--------------|----------------------------------|----------------------------------|
| 127-0901-811 | 127-0901-811 | 1.10 Max 1.15 Max 1.20 Max | 0-4 GHz 4-12 GHz 12-18 GHz |



Same Series Adapters

Male to Male Catcher's Mitt Adapters, Stainless Steel

| Part Number | Material | Interface | VSWR | Frequency Range |
|--------------|-----------------------------|----------------|----------------------------------|------------------------------------|
| 127-0901-822 | Stainless Steel, Passivated | Full Detent | 1.10 max 1.15 max 1.20 max | 0-4 GHz, 4-12 GHz, 12-18 GHz |
| 127-1901-822 | Stainless Steel, Passivated | Limited Detent | 1.10 max 1.15 max 1.20 max | 0-4 GHz, 4-12 GHz, 12-18 GHz |
| 127-2901-822 | Stainless Steel, Passivated | Smooth Bore | 1.10 max 1.15 max 1.20 max | 0-4 GHz, 4-12 GHz, 12-18 GHz |



Between Series Adapters

SMA to SMP Adapters

| Part Number | Material | Interface | VSWR | Frequency Range | Figure | Dimension A |
|--------------|-------------|----------------------|----------------------|-------------------------|--------|--------------|
| 134-1019-441 | Gold Plated | SMA Plug to SMP Plug | 1.20 max 1.25 max | 0-20 GHz 20-26.5 GHz | 1 | .621 (15.77) |
| 134-1019-451 | Gold Plated | SMA Plug to SMP Jack | 1.20 max 1.25 max | 0-20 GHz 20-26.5 GHz | 1 | .561 (14.25) |
| 134-1019-461 | Gold Plated | SMA Jack to SMP Jack | 1.20 max 1.25 max | 0-20 GHz 20-26.5 GHz | 2 | .529 (13.44) |
| 134-1019-471 | Gold Plated | SMA Jack to SMP Plug | 1.20 max 1.25 max | 0-20 GHz 20-26.5 GHz | 2 | .574 (14.58) |

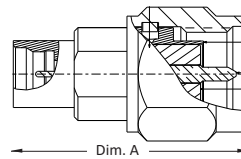


Figure 1

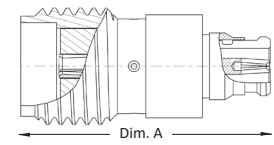
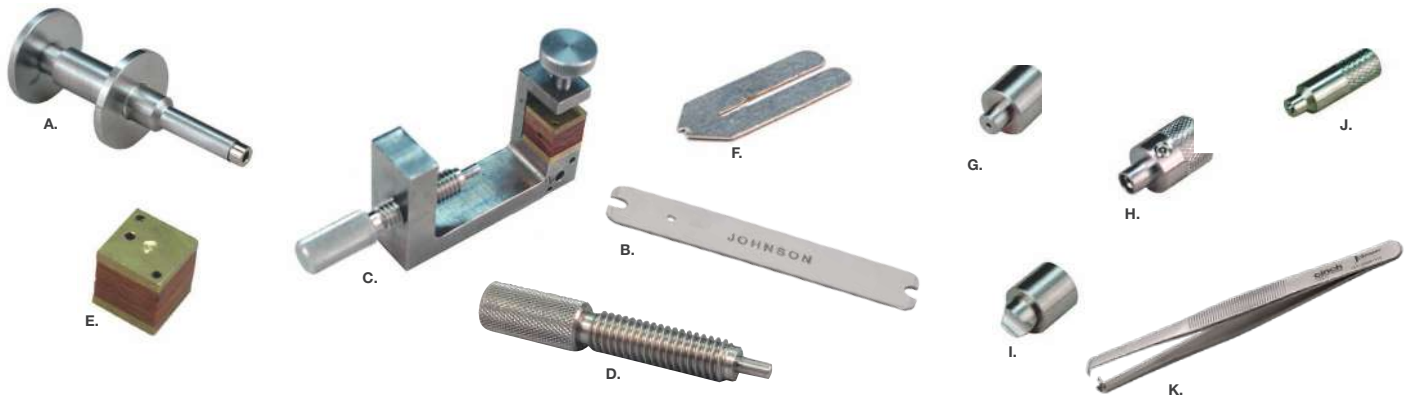


Figure 2

Tools

Accurate assembly of the semi-rigid cabled connectors is obtained with the tools listed below. Industry standard devices are used if possible for customer convenience and tool compatibility.



| Part Number | Item | Description |
|--------------|------|---|
| 127-0000-900 | A | SMP bullet extraction tool |
| 127-0000-901 | B | SMP cabled connector removal tool |
| 140-0000-962 | C | Soldering vise (does not include clamp inserts or stop screw) |
| 140-0000-981 | D | Stop screw for soldering vise |
| 140-0000-964 | E | Semi-rigid cable clamp inserts for 0.086" OD cable |
| 140-0000-997 | E | Semi-rigid cable clamp inserts for 0.047" OD cable |
| 140-0000-984 | F | Solder shim for 0.086" OD cable |
| 127-0000-902 | G | SMP center contact holder |
| 127-0000-903 | H | SMP interface locator tool |
| 127-0000-904 | I | SMP right angle body holder |
| 127-0000-905 | J | SMP Full Detent shroud centering tool |
| 127-0000-906 | J | SMP Limited Detent shroud centering tool |
| 127-0000-907 | J | SMP Smooth Bore shroud centering tool |
| 127-0000-910 | K | SMP bullet extraction removal tool |

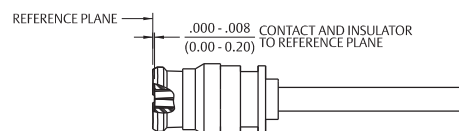
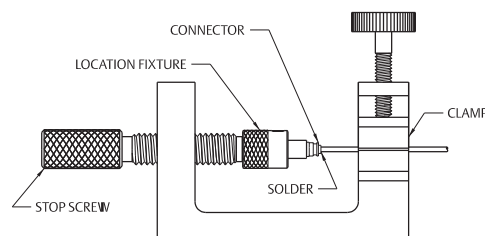
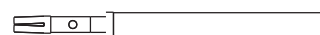
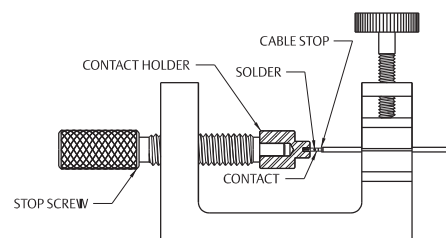
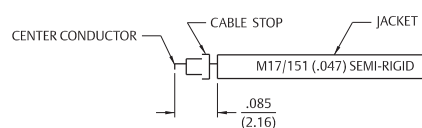
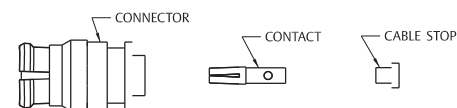
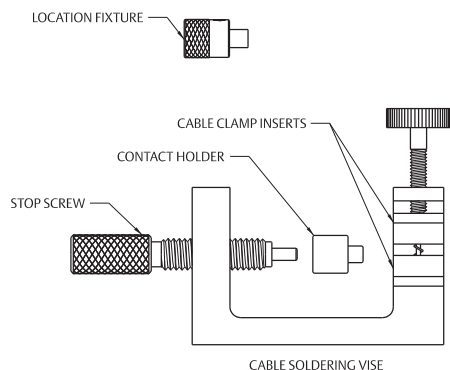
Assembly Instructions

SMP Straight Female Solder Style for 0.047 OD Semi-Rigid Cable

1. Identify tools (5 piece parts) and connector parts (3 piece parts).
2. Strip cable jacket and dielectric to dimension shown. Do not nick center conductor. Clean all debris from prepared cable.
3. Insert center conductor into cable stop as shown and place contact onto center conductor.
4. Insert contact into contact holder fixture and clamp cable in vise. Tighten stop screw until light pressure is applied between contact, cable stop and cable jacket.
5. Solder contact to center conductor through solder hole using 0.016 (0.41) diameter flux core solder wire or solder paste. Use a minimum amount of solder and heat for a good joint. Do not allow heat to build up for a long period of time as cable stop may melt.
6. After solder joint has cooled, remove cable from vise. Remove any excess solder from contact with a sharp blade and clean all debris from contact and cable.
7. Insert contact into connector assembly, making sure cable stop bottoms out against internal shoulder of connector body. Insert connector assembly into interface location fixture and clamp cable in vise. Make sure connector assembly is fully engaged within location fixture. Tighten stop screw until light pressure is applied between connector assembly and cable stop.
8. Solder end of connector body to cable jacket, using a minimum amount of solder and heat for a full fillet joint. Allow assembly to cool before removing connector from vise and location fixture. Best results are obtained when contact location is flush to 0.004 (0.10) recessed from reference plane. Interface location fixture is pre-set at factory, but can be adjusted to control location.

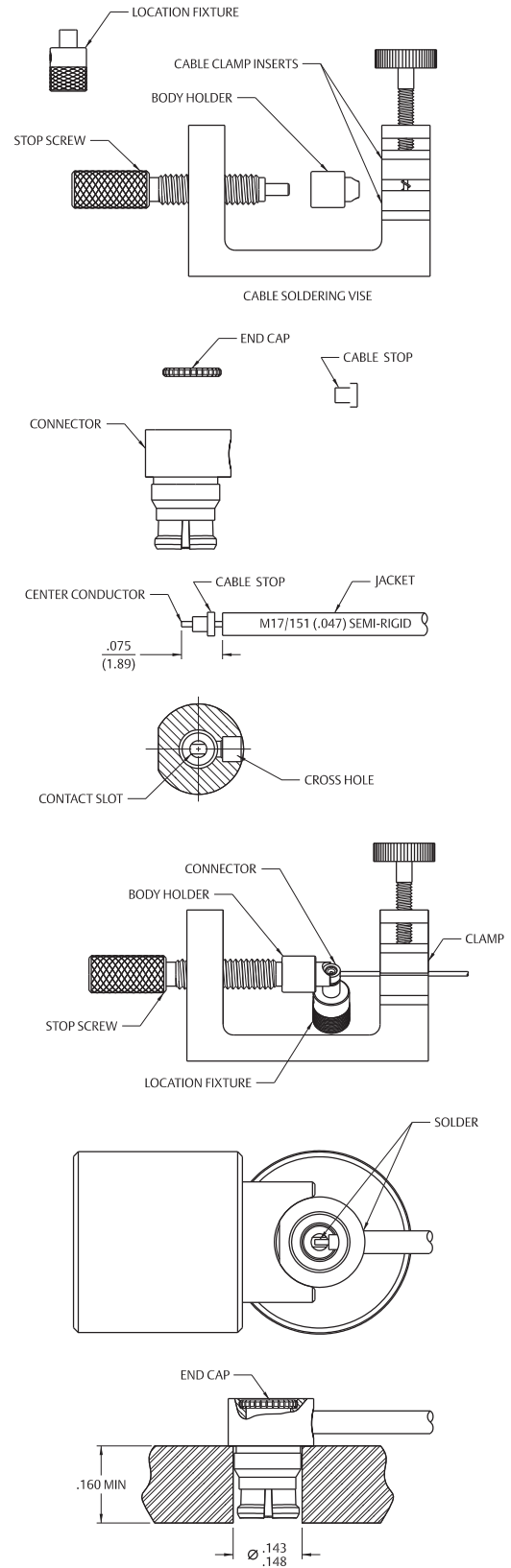
| Part Number | Cable Group |
|--------------|--------------------------------|
| 127-0692-101 | MIL-C-17/151, 0.047 Semi-Rigid |

| Part Number | Tool |
|--------------|----------------------------|
| 140-0000-962 | Cable Vise |
| 140-0000-981 | Stop Screw |
| 140-0000-997 | Clamp Inserts |
| 127-0000-902 | Contact Holder |
| 127-0000-903 | Interface Location Fixture |



SMP Right Angle Female Solder Style for 0.047 OD Semi-Rigid Cable

1. Identify tools (5 piece parts) and connector parts (3 piece parts).
2. Strip cable jacket and dielectric to dimension shown. Do not nick center conductor. Clean all debris from prepared cable.
3. Insert center conductor into cable stop as shown. Make sure slot in connector contact is aligned with cross hole in body as shown. Insert cable into cross hole in connector body, making sure cable stop bottoms out against internal shoulder of connector body.
4. Insert connector assembly into interface location fixture and clamp cable in vise using body holder fixture as shown. Tighten stop screw until light pressure is applied between connector body, cable stop and cable jacket.
5. Solder contact to center conductor through rear access port in connector body using a minimum amount of solder and heat for a good joint.
6. After center conductor solder joint has cooled, solder connector body to cable jacket, using a minimum amount of solder and heat for a full fillet joint. Take care so that solder does not flow onto anti-rock ring or into rear access port. Allow assembly to cool before removing connector from vise and location fixture.
7. Using a fixture plate as shown, press end cap into rear access port using a 0.156 (3.96) diameter flat punch until fully seated within body counter bore.
8. Best results are obtained when contact location is flush to 0.004 (0.10) recessed from reference plane. Interface location fixture is pre-set at factory, but can be adjusted to control location.

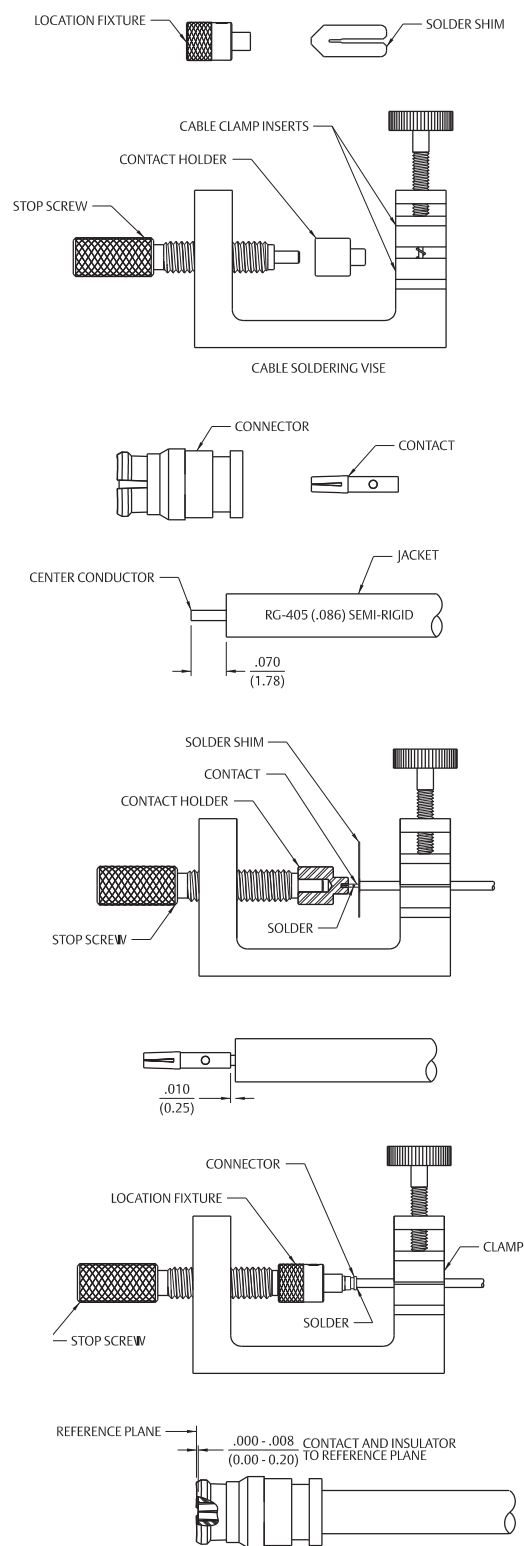


| Part Number | Cable Group |
|--------------|--------------------------------|
| 127-0692-101 | MIL-C-17/151, 0.047 Semi-Rigid |

| Part Number | Tool |
|--------------|----------------------------|
| 140-0000-962 | Cable Vise |
| 140-0000-981 | Stop Screw |
| 140-0000-997 | Clamp Inserts |
| 127-0000-904 | Body Holder |
| 127-0000-903 | Interface Location Fixture |

SMP Straight Female Solder Style for 0.086 OD Semi-Rigid Cable

1. Identify tools (6 piece parts) and connector parts (2 piece parts).
2. Strip cable jacket and dielectric to dimension shown. Do not nick center conductor. Clean all debris from prepared cable.
3. Place contact onto center conductor, insert solder shim between cable jacket and contact.
4. Insert contact into contact holder fixture and clamp cable in vise. Tighten stop screw until light pressure is applied between contact, solder shim and cable jacket.
5. Solder contact to center conductor through solder hole using 0.016 (0.41) diameter flux core solder wire or solder paste. Use a minimum amount of solder and heat for a good joint.
6. After solder joint has cooled, remove solder shim and cable from vise. Remove any excess solder from contact with a sharp blade and clean all debris from contact and cable.
7. Insert contact into connector assembly, making sure cable jacket bottoms out against internal shoulder of connector body. Insert connector assembly into interface location fixture and clamp cable in vise. Make sure connector assembly is fully engaged within location fixture. Tighten stop screw until light pressure is applied between connector assembly and cable jacket.
8. Solder end of connector body to cable jacket, using a minimum amount of solder and heat for a full fillet joint. Allow assembly to cool before removing connector from vise and location fixture. Best results are obtained when contact location is flush to 0.004 (0.10) recessed from reference plane. Interface location fixture is preset at factory, but can be adjusted to control location.



| Part Number | Cable Group |
|--------------|--------------------------|
| 127-0693-001 | RG-405, 0.086 Semi-Rigid |

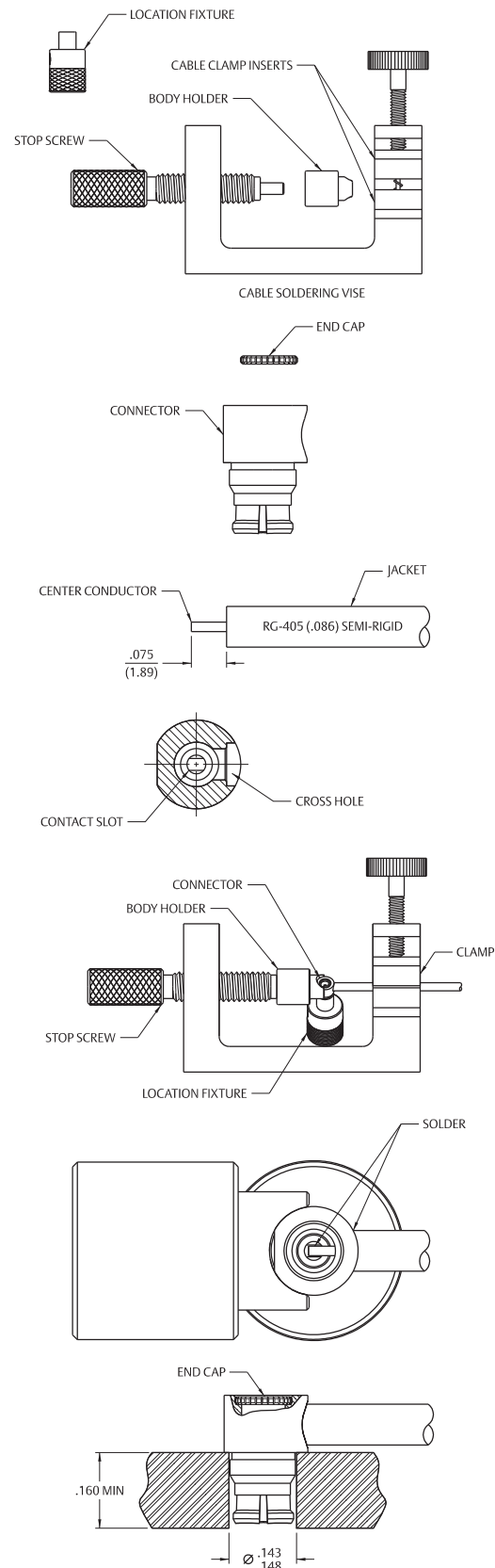
| Part Number | Tool |
|--------------|----------------------------|
| 140-0000-962 | Cable Vise |
| 140-0000-981 | Stop Screw |
| 140-0000-964 | Clamp Inserts |
| 140-0000-984 | Solder Shim |
| 127-0000-902 | Contact Holder |
| 127-0000-903 | Interface Location Fixture |

SMP Right Angle Female Solder Style for 0.086 OD Semi-Rigid Cable

1. Identify tools (5 piece parts) and connector parts (2 piece parts).
2. Strip cable jacket and dielectric to dimension shown. Do not nick center conductor. Clean all debris from prepared cable.
3. Make sure slot in connector contact is aligned with cross hole in body as shown. Insert cable into cross hole in connector body, making sure cable jacket bottoms out against internal shoulder of connector body.
4. Insert connector assembly into interface location fixture and clamp cable in vise using body holder fixture as shown. Tighten stop screw until light pressure is applied between connector body and cable jacket.
5. Solder contact to center conductor through rear access port in connector body using a minimum amount of solder and heat for a good joint. Do not allow solder to build up along exposed center conductor.
6. After center conductor solder joint has cooled, solder connector body to cable jacket, using a minimum amount of solder and heat for a full fillet joint. Take care so that solder does not flow onto anti-rock ring or into rear access port. Allow assembly to cool before removing connector from vise and location fixture.
7. Using a fixture plate as shown, press end cap into rear access port using a 0.156 (3.96) diameter flat punch until fully seated within body counter bore.
8. Best results are obtained when contact location is flush to 0.004 (0.10) recessed from reference plane. Interface location fixture is preset at factory, but can be adjusted to control location.

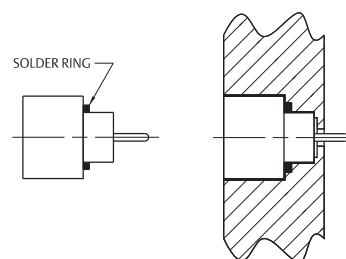
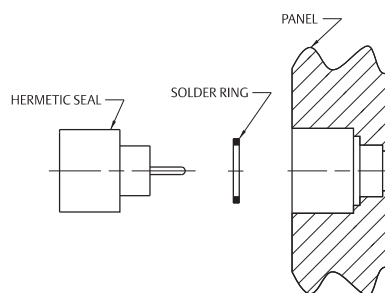
| Part Number | Cable Group |
|--------------|--------------------------|
| 127-0693-101 | RG-405, 0.086 Semi-Rigid |

| Part Number | Tool |
|--------------|----------------------------|
| 140-0000-962 | Cable Vise |
| 140-0000-981 | Stop Screw |
| 140-0000-964 | Clamp Inserts |
| 127-0000-904 | Body Holder |
| 127-0000-903 | Interface Location Fixture |



SMP Hermetic Seal Installation

1. Prepare housing panel per figure 2 as shown on page 6
2. Install solder ring on hermetic seal as shown. Recommended ring size is 0.103 (2.62) ID x 0.128 (3.25) OD x 0.015 (0.38) thick.
3. Solder in place as shown

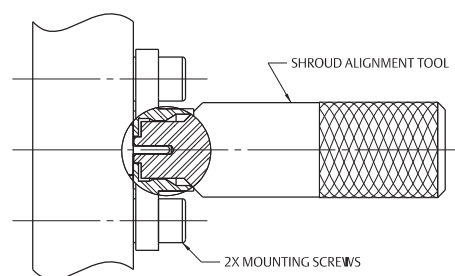


| Part Number | Interface |
|--------------|----------------|
| 127-0711-601 | Full Detent |
| 127-1711-601 | Limited Detent |
| 127-2711-601 | Smooth Bore |

SMP Shroud Installation

1. Install appropriate assembly tool into shroud as shown.
2. While holding tool in place, align flange mount with mounting holes in panel. Install fasteners and torque to 6-8 in/lbs.

| Shroud Part Number | Tool Part Number |
|--------------------|------------------|
| 127-0701-602 | 127-0000-905 |
| 127-1701-602 | 127-0000-906 |
| 127-2701-602 | 127-0000-905 |
| 127-3701-602 | 127-0000-905 |



Competitor Cross Reference

| Description | Johnson | Tensolite | Corning Gilbert | Micro-Mode | SV Microwave | AEP | Rosenberger |
|---|--------------|------------|-----------------|------------|--------------|---------------|--------------|
| Straight Female M17/151 (0.047 SR) Cabled | 127-0692-001 | P651-1CC | A014-B11-01 | MMSP-6120 | 1203-4000 | 7500-1582-011 | 19K101-270E4 |
| Straight Female RG 405 (0.086 SR) Cabled | 127-0693-001 | P651-2CC | A014-D11-01 | MMSP-2508 | 1204-4000 | 7500-1562-010 | 19K101-271E4 |
| Right Angle Female M17/151 (0.047 SR) Cabled | 127-0692-101 | P652-1CC | A015-B11-01 | MMSP-6968 | 1213-4006 | 7501-1562-011 | 19K202-270E4 |
| Right Angle Female RG 405 (0.086 SR) Cabled | 127-0693-101 | P652-2CC | A015-D11-01 | MMSP-2598 | 1214-4001 | 7501-1562-010 | 19K202-271E4 |
| Field Replaceable 0.012 Socket 2 Hole Flange Male FD | 127-0701-612 | P836-4CCF | --- | --- | SF1250-6000 | --- | --- |
| Field Replaceable 0.012 Socket 2 Hole Flange Male LD | 127-1701-612 | P836-5CCF | --- | --- | --- | --- | --- |
| Field Replaceable 0.012 Socket 2 Hole Flange Male SB | 127-2701-612 | P836-6CCF | --- | --- | --- | --- | --- |
| Adapter Bullet Female/Female 0.254 | 127-0901-801 | P650-1CC | A1A1-0001-01 | MMSP-2500 | 1290-4004 | 5280-1502-000 | 19K101-K00E4 |
| Adapter Female/Female 0.769 | 127-0901-811 | P617-1CC | --- | MMSP-3829 | 1290-4007 | 5280-1502-001 | 19K115-K00E4 |
| Adapter Male CM/Male FD | 127-0901-822 | P912-1CCSF | A3A6-0539-01 | --- | --- | --- | --- |
| Adapter Male CM/Male LD | 127-1901-822 | P912-2CCSF | --- | --- | --- | --- | --- |
| Adapter Male CM/Male SB | 127-2901-822 | P912-3CCSF | --- | --- | SF1293-6004 | --- | --- |
| Shroud 2 Hole Flange 0.165 Wide x 0.400 High FD | 127-0701-602 | P670-3SF | A001-A23-04 | MMSP-2514 | SF1254-6006 | --- | --- |
| Shroud 2 Hole Flange 0.165 Wide x 0.400 High LD | 127-1701-602 | P672-3SF | A001-A24-04 | MMSP-6095 | SF1254-6007 | --- | --- |
| Shroud 2 Hole Flange 0.165 Wide x 0.400 High SB | 127-2701-602 | P673-3SF | A001-A25-04 | MMSP-6067 | SF1254-6008 | --- | --- |
| Shroud 2 Hole Flange 0.235 Wide x 0.470 High CM | 127-3701-602 | P671-1SF | --- | --- | --- | --- | --- |
| PC Mount Straight 0.218 OD 0.100 Legs Male FD | 127-0701-201 | P654-5CC | A008-L33-01 | MMSP-7448 | SF1287-6001 | --- | --- |
| PC Mount Straight 0.218 OD 0.100 Legs Male LD | 127-1701-201 | P654-6CC | A008-L34-01 | MMSP-7449 | --- | --- | --- |
| PC Mount Straight 0.218 OD 0.100 Legs Male SB | 127-2701-201 | P654-7CC | A008-L35-01 | --- | --- | --- | --- |
| PC Mount Straight 0.235 OD 0.100 Legs Male CM | 127-3701-201 | P654-8CC | --- | --- | --- | --- | --- |
| End Launch Surface Mount Male FD | 127-0701-801 | P606-1CC | A010-L13-02 | MMSP-7457 | --- | --- | --- |
| End Launch Surface Mount Male LD | 127-1701-801 | P606-2CC | A010-L14-02 | MMSP-3805 | --- | --- | 19S202-40ME4 |
| End Launch Surface Mount Male SB | 127-2701-801 | P606-3CC | A010-L15-02 | MMSP-7347 | --- | --- | --- |
| Hermetic Feedthrough Shroud Male FD | 127-0711-601 | P840-9CC | A007-L43-01-70 | MMSP-2771 | --- | --- | --- |
| Hermetic Feedthrough Shroud Male LD | 127-1711-601 | P794-2CC | A007-L44-01-70 | MMSP-2875 | --- | --- | --- |
| Hermetic Feedthrough Shroud Male SB | 127-2711-601 | --- | A007-L45-01-70 | MMSP-2979 | --- | --- | --- |