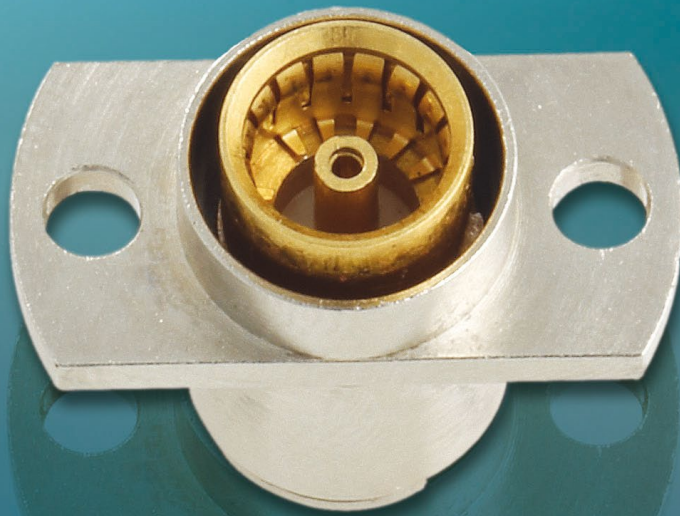


# SECTION 7



**SMA / SMA-COM / BMA**

*R125 / R124 / R128*

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### SMA

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### SMA-COM

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## Introduction

|     | BMA         |
|-----|-------------|
| 50Ω | DC - 22 GHz |

### GENERAL

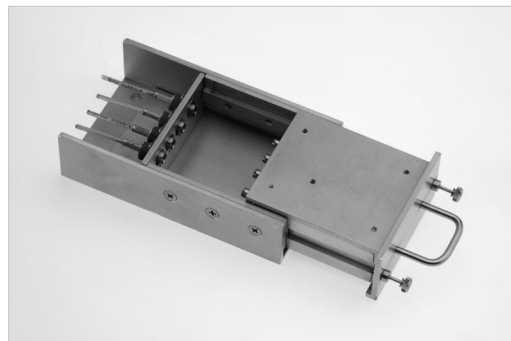
- Blind mate connector
- Slide-on coupling
- High frequency
- Float mount design allows large axial and radial misalignment

### APPLICABLE STANDARDS

- MIL-STD-348 Fig. 321
- CEI 1169-33
- Compatible with OSP series

### APPLICATIONS

- Airborne and ground radars
- Active electronically scanned array antennas
- Rack and panel telecommunication equipments
- Military microwave modules



Radiall's BMA series has been designed for applications where reliability, durability and performances at high frequency are essential. BMA is a blind mate connector widely used to interconnect microwave modules with multiple coaxial ports. Float mount connectors are recommended for multiple interconnects. Contact Radiall for mounting tolerances.

### WIDE RANGE

The BMA product range consists of cable connectors for flexible cables, semi-rigid cables and SHF cables, floating bulkhead or flange mount, PCB receptacles, press mount receptacles, screw-on receptacles, hermetic receptacles, coaxial contacts for rectangular or circular multipin connectors and adapters.

### NEW SPRING FINGERS OUTER CONTACT

In 2007, a new outer contact was designed and introduced on all BMA female connectors. The new spring fingers outer contact provides improved performances and stability at high frequency up to 22 GHz. Old BMA female part numbers are obsolete and have been replaced with new part numbers which are listed in this catalog.

## Characteristics

| Test / Characteristics | Values / Remarks |
|------------------------|------------------|
|------------------------|------------------|

## ELECTRICAL CHARACTERISTICS

|                                                      |                                                                                              |                                      |
|------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------|
| Impedance                                            | 50Ω                                                                                          |                                      |
| Frequency range                                      | DC - 22 GHz                                                                                  |                                      |
| V.S.W.R.                                             | .085"/ RG405 semi-rigid cable: 1.05 + 0.01 F (GHz)                                           |                                      |
| Insertion loss (typ.) dB                             | 0.03 √ F (GHz)                                                                               |                                      |
| RF leakage (min.) dB                                 | -90 + F (GHz) for gold and BBR connector body<br>-80 + F (GHz) for passivated connector body |                                      |
| Insulation resistance                                | ≥ 5000 MΩ                                                                                    |                                      |
| Contact resistance                                   | Center contact : 5 mΩ max. / Outer contact : 2.5 mΩ max.                                     |                                      |
| Voltage in V. RMS<br>• At sea level<br>• At 70000 ft | Dielectric withstanding voltage<br>≥ 1000 V.<br>200 V.                                       | Working voltage<br>≤ 335 V.<br>85 V. |

## MECHANICAL CHARACTERISTICS

|                                                               |                                                           |                                                            |
|---------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|
| Durability                                                    | >1000 cycles                                              |                                                            |
| Force to engage                                               | 13.6 N [3 lbf] max.                                       |                                                            |
| Force to disengage                                            | 0.56 N [0.13 lbf] min.                                    |                                                            |
| Cable retention force                                         | .085"/ RG405 cable                                        | .141"/ RG402 cable                                         |
|                                                               | > 136 N [30 lbf]                                          | > 272 N [61 lbf]                                           |
| Center contact retention force                                | 27 N [6 lbf] min.                                         |                                                            |
| Misalignment<br>• Radial misalignment<br>• Axial misalignment | Fixed mount<br>± 0.1mm (.004 in)<br>0.38mm (.015 in) max. | Float mount<br>± 0.51mm (.020 in)<br>1.52mm (.060 in) min. |

## ENVIRONMENTAL CHARACTERISTICS

|                                                               |                                                      |
|---------------------------------------------------------------|------------------------------------------------------|
| Temperature range<br>• Standard models<br>• Semi-rigid cables | -65°C / + 165°C<br>-65°C / +105°C                    |
| Thermal cycling                                               | MIL-STD-202, Method 107, Condition B, -65°C / +125°C |
| Vibration                                                     | MIL-STD-202, Method 204, Condition D, 20 g           |
| Shock                                                         | MIL-STD-202, Method 213, Condition A, 50 g           |
| Bumps                                                         | CECC 22000, Paragraph 4.6.2, 4000 bumps per axis     |
| Moisture resistance                                           | MIL-STD-202, Method 106                              |
| Corrosion                                                     | MIL-STD-202, Method 101, Condition A, 96H            |
| Degree of protection                                          | IP54 (male connector with O-ring)                    |

## MATERIALS AND PLATING

|                 | Material                                                 | Plating                   |
|-----------------|----------------------------------------------------------|---------------------------|
| Body/Nut        | Stainless steel (standard BMA)<br>Brass (commercial BMA) | Gold or Passivated<br>BBR |
| Center contacts | Brass (male)<br>Beryllium copper (female)                | Gold over Nickel or NPGR  |
| Outer contact   | Beryllium copper                                         | NPGR                      |
| Gaskets         | Silicon rubber                                           |                           |
| Insulators      | PTFE                                                     |                           |

## Plugs and contacts

### STRAIGHT PLUGS, SOLDER TYPE FOR SEMI-RIGID CABLES

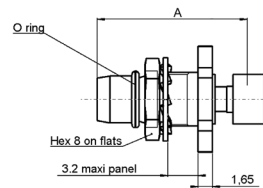


Fig. 1

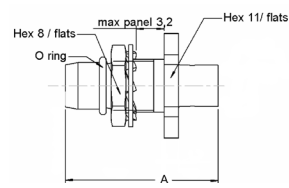


Fig. 2

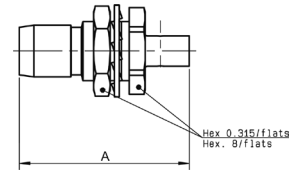


Fig. 3

| Cable group | Cable group dia. | Part number  | Fig. | Dimension A (mm) | Panel drilling | Body            | Finish          | Captive center contact | Note                          |
|-------------|------------------|--------------|------|------------------|----------------|-----------------|-----------------|------------------------|-------------------------------|
| RG405       | .085"            | R128 052 901 | 1    | 17               | P01            | Stainless steel | Passivated      | yes (epoxy)            | Crimp type, easy installation |
|             |                  | R128 052 000 | 2    | Gold             |                |                 |                 |                        |                               |
|             |                  | R128 052 827 | 3    | Brass            |                | BBR             | yes (4 indents) | No O-ring              |                               |
| RG402       | .141"            | R128 055 000 | 2    | 17.6             |                | Stainless steel | Gold            | yes (epoxy)            |                               |
|             |                  | R128 055 827 | 3    |                  |                | Brass           | BBR             | yes (4 indents)        | No O-ring                     |

### STRAIGHT BULKHEAD PLUGS CRIMP TYPE FOR FLEXIBLE CABLE

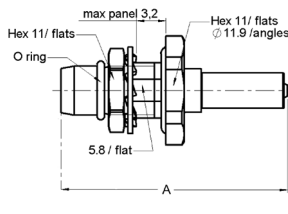


Fig. 1

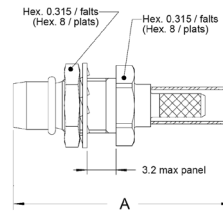


Fig. 2

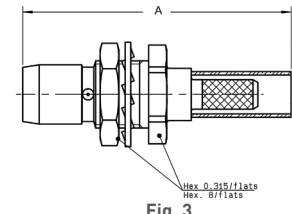


Fig. 3

| Cable group           | Cable group dia. | Part number  | Fig. | Dimension A (mm) | Panel drilling | Body & finish              | Captive center contact | Note       |
|-----------------------|------------------|--------------|------|------------------|----------------|----------------------------|------------------------|------------|
| RG174 / RG316         | 2.6/50/S         | R128 081 001 | 1    | 24.6             | P02            | Stainless steel passivated | yes (barb)             | Waterproof |
|                       |                  | R128 083 001 | 2    | 24.2             | P01            | Stainless steel passivated | yes (epoxy)            |            |
|                       |                  | R128 083 827 |      |                  |                |                            |                        |            |
| RD316                 | 2.6/50/D         | R128 084 827 | 3    |                  |                | Brass BBR                  | yes (4 indents)        | No O-ring  |
| RG142 / RG223 / RG400 | 5/50D            | R128 088 827 |      |                  |                |                            |                        |            |

### STRAIGHT CONTACTS SIZE 8 FOR MIL-STD-38999 CONNECTORS SOLDER TYPE

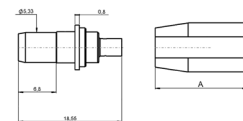


Fig. 1

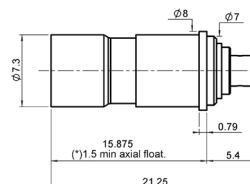


Fig. 2

| Cable group | Cable group dia. | Part number  | Body & finish               | Fig. | Captive center contact | Gender |
|-------------|------------------|--------------|-----------------------------|------|------------------------|--------|
| RG405       | .085"            | R128 053 000 | Stainless steel Gold plated | 1    | yes (epoxy)            | Pin    |
|             |                  | R128 294 710 |                             | 2    |                        | Socket |
| RG402       | .141"            | R128 056 000 |                             | 1    |                        | Pin    |
|             |                  | R128 296 710 |                             | 2    |                        | Socket |

## Jacks

## STRAIGHT FLOATING JACKS SOLDER TYPE FOR SEMI-RIGID CABLE

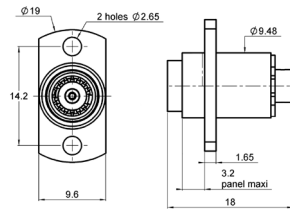
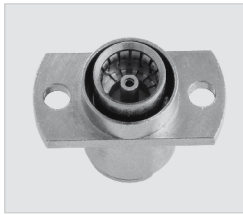


Fig. 1

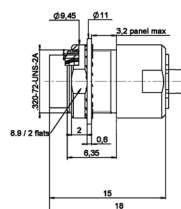


Fig. 2

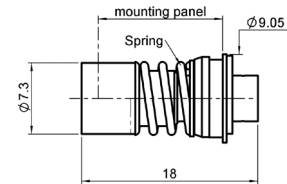


Fig. 3

| Cable group | Cable group dia. | Part number  | Fig. | Panel drilling | Body & finish               | Captive center contact | Panel mount   |
|-------------|------------------|--------------|------|----------------|-----------------------------|------------------------|---------------|
| RG405       | .085"            | R128 292 700 | 1    | P03            | Stainless steel gold plated | yes (epoxy)            | 2-hole flange |
|             |                  | R128 292 727 |      |                | Brass BBR                   | yes (4 indents)        | Bulkhead      |
|             |                  | R128 293 702 | 2    | P18            | Stainless steel gold plated | yes (epoxy)            | Snap-in       |
|             |                  | R128 294 700 |      |                | Brass BBR                   | yes (4 indents)        | 2-hole flange |
| RG402       | .141"            | R128 296 700 | 1    | P03            | Stainless steel gold plated | yes (epoxy)            | Snap-in       |
|             |                  | R128 295 700 |      |                | Brass BBR                   | yes (4 indents)        | 2-hole flange |
|             |                  | R128 295 727 |      |                | Stainless steel gold plated | yes (epoxy)            | Snap-in       |

## STRAIGHT FLOATING JACKS CRIMP TYPE FOR FLEXIBLE CABLE

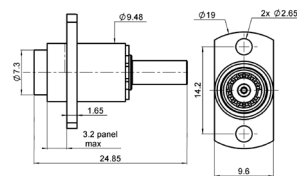


Fig. 1

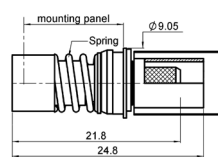


Fig. 2

| Cable group           | Cable group dia. | Part number  | Fig. | Panel drilling | Body & finish              | Captive center contact | Panel mount   |
|-----------------------|------------------|--------------|------|----------------|----------------------------|------------------------|---------------|
| RG174 / RG316         | 2.6/50S          | R128 263 707 | 1    | P03            | Brass BBR                  | yes (4 indents)        | 2-hole flange |
| RD316                 | 2.6/50D          | R128 264 707 |      |                | Stainless steel passivated | yes (epoxy)            | Snap-in       |
| RG142 / RG223 / RG400 | 5/50/D           | R128 268 717 |      |                | Brass BBR                  | yes (4 indents)        | 2-hole flange |
| RG174 / RG316         | 2.6/50/S         | R128 263 711 |      |                | Stainless steel passivated | yes (epoxy)            | Snap-in       |
| RG142 / RG223 / RG400 | 5/50/D           | R128 268 701 | 2    | P04            | Brass BBR                  | yes (4 indents)        | 2-hole flange |
| RG174 / RG316         | 2.6/50/S         | R128 233 701 |      |                | Stainless steel passivated | yes (epoxy)            | Snap-in       |
| RG142 / RG223 / RG400 | 5/50/D           | R128 238 701 |      |                | Brass BBR                  | yes (4 indents)        | 2-hole flange |

## Jacks and receptacles

### RIGHT ANGLE FLOATING JACKS FOR SEMI-RIGID AND FLEXIBLE CABLE

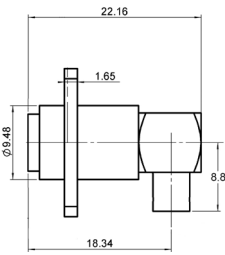


Fig. 1

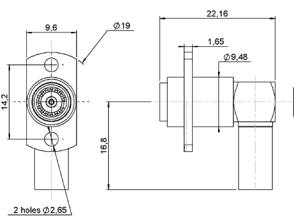


Fig. 2

| Cable group           | Cable group dia. | Part number  | Fig. | Panel drilling | Body & finish              | Captive center contact | Note        |
|-----------------------|------------------|--------------|------|----------------|----------------------------|------------------------|-------------|
| RG402                 | .141"            | R128 359 707 | 1    | P03            | Brass BBR                  | yes (4 indents)        | Solder type |
| RG405                 | .085"            | R128 360 701 |      |                | Stainless steel passivated | yes (epoxy)            |             |
|                       |                  | R128 360 717 |      |                | Brass BBR                  | yes (4 indents)        | Crimp type  |
| RG142 / RG223 / RG400 | 5/50/D           | R128 368 707 | 2    |                |                            |                        |             |

### STRAIGHT SMT MALE RECEPTACLES

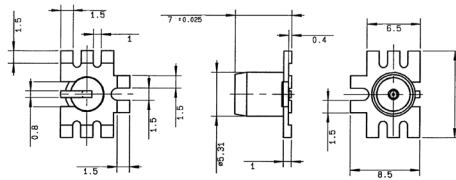


Fig. 1

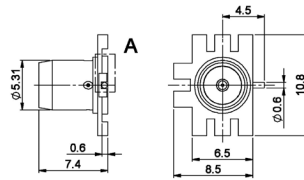


Fig. 2

| Part number  | Fig. | Body & finish     | Captive center contact | Note               |
|--------------|------|-------------------|------------------------|--------------------|
| R128 424 848 | 1    | Brass, tin plated | Yes (4 indents)        | Tape & Reel 250pcs |
| R128 424 860 | 2    | Brass NPGR        |                        |                    |

### PCB MALE RECEPTACLES

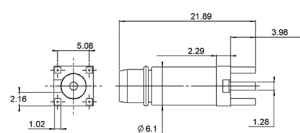


Fig. 1

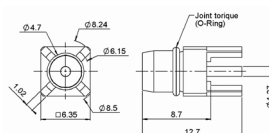


Fig. 2

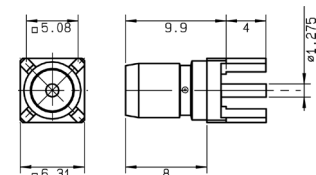


Fig. 3

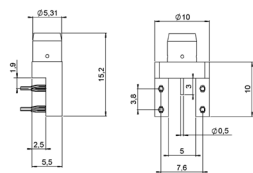


Fig. 4

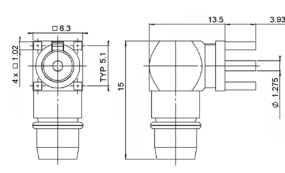


Fig. 5

| Part number  | Fig. | Panel drilling | Body & finish               | Captive center contact | Note                     |
|--------------|------|----------------|-----------------------------|------------------------|--------------------------|
| R128 425 110 | 1    | P09            | Stainless steel gold plated | yes (barb)             | No O-ring                |
| R128 425 300 | 2    |                |                             | yes (epoxy)            |                          |
| R128 425 820 | 3    | P07            | Brass gold plated           | yes (4 indents)        | Press-fit edge-card type |
| R128 405 161 | 4    |                |                             |                        | No O-ring                |
| R128 665 820 | 5    | P07            | Stainless steel gold plated | yes                    | No O-ring                |
| R128 665 100 |      | P09            |                             |                        |                          |

## Receptacles

## PCB FEMALE RECEPTACLES

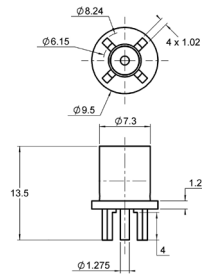


Fig. 1

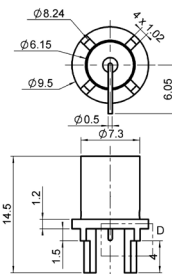


Fig. 2

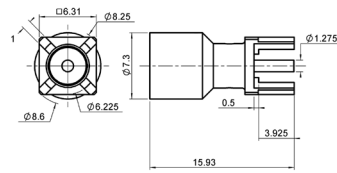


Fig. 3

| Part number  | Fig. | Panel drilling | Body & finish               | Captive center contact |
|--------------|------|----------------|-----------------------------|------------------------|
| R128 426 700 | 3    | P09            | Brass gold plated           | yes (4 indents)        |
| R128 426 710 | 1    | P10            | Stainless steel gold plated | yes (epoxy)            |
| R128 427 700 | 2    | P11            |                             |                        |

## NARROW AND SQUARE FLANGE EXTENDED DIELECTRIC MALE RECEPTACLES

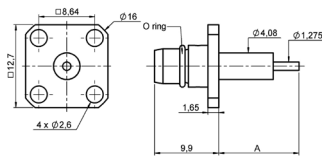


Fig. 1

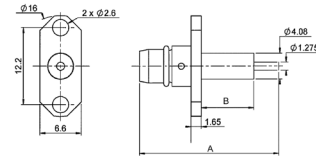


Fig. 2

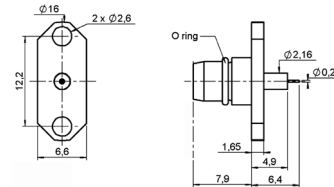


Fig. 3

| Part number  | Fig. | Dimension |        | Panel drilling | Body & finish              | Captive center contact | Panel mount   | Note      |
|--------------|------|-----------|--------|----------------|----------------------------|------------------------|---------------|-----------|
|              |      | A (mm)    | B (mm) |                |                            |                        |               |           |
| R128 444 201 | 1    | 12.4      | 8.4    | P06            | Stainless steel passivated | yes (epoxy)            | 4 hole flange | No O-ring |
| R128 444 307 |      | 10.7      | 5.6    |                | Brass BBR                  | yes (4 indents)        |               |           |
| R128 474 201 | 2    | 22.3      | 8.4    | P05            | Stainless steel passivated | yes (epoxy)            | 2 hole flange |           |
| R128 474 211 |      | 17.4      | 5      |                | Brass BBR                  | yes (4 indents)        |               |           |
| R128 474 847 |      | 16.4      |        |                |                            |                        |               |           |
| R128 474 857 |      | 22.3      | 8.4    |                |                            |                        |               |           |
| R128 484 001 | 3    |           |        | P13            | Stainless steel passivated | yes (epoxy)            |               |           |

## NARROW AND SQUARE FLANGE EXTENDED DIELECTRIC FEMALE RECEPTACLES

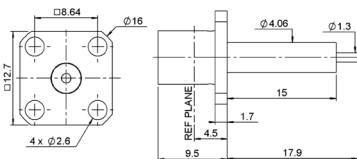


Fig. 1

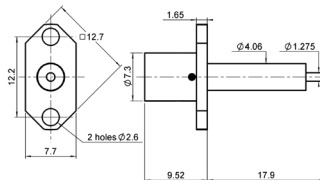


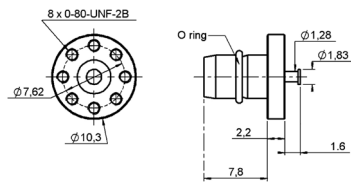
Fig. 2

| Part number  | Fig. | Panel drilling | Body & finish              | Captive center contact | Note          |
|--------------|------|----------------|----------------------------|------------------------|---------------|
| R128 414 701 | 1    | P06            | Stainless steel passivated | yes (epoxy)            | Square flange |
| R128 464 701 | 2    | P12            |                            |                        | 2 hole flange |



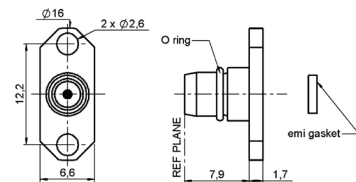
## Receptacles

### SPECIAL FLANGE MALE RECEPTACLE



| Part number  | Panel drilling | Body & finish              | Captive center contact | Note                |
|--------------|----------------|----------------------------|------------------------|---------------------|
| R128 545 011 | P16            | Stainless steel passivated | no                     | Turret contact type |

### NARROW FLANGE REPLACEABLE MALE RECEPTACLES



| Part number  | Panel drilling | Body & finish              | Captive center contact | Accept pin diameter | Note          |
|--------------|----------------|----------------------------|------------------------|---------------------|---------------|
| R128 490 021 | P13            | Stainless steel passivated | yes (epoxy)            | 0.93 mm             | No EMI gasket |
| R128 481 001 |                |                            |                        | 0.3 mm              | EMI gasket    |
| R128 481 011 |                |                            |                        | 0.5 mm              |               |

### SCREW-ON AND PRESS-FIT MALE RECEPTACLES

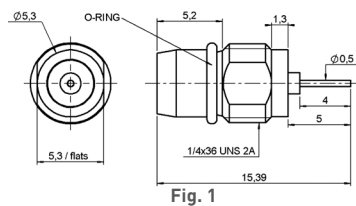


Fig. 1

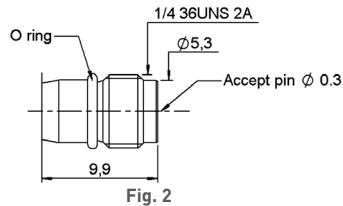


Fig. 2

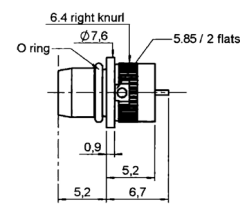


Fig. 3

| Part number  | Fig. | Panel drilling | Body & finish              | Captive center contact | Panel mount | Note        |
|--------------|------|----------------|----------------------------|------------------------|-------------|-------------|
| R128 555 101 | 1    | P14            | Stainless steel passivated | yes (epoxy)            | Screw-on    | Cylindrical |
| R128 556 001 | 2    | P15            |                            |                        |             | Socket      |
| R128 595 001 | 3    | P08            |                            |                        | Press-fit   | Cylindrical |

### SCREW-ON HERMETIC RECEPTACLES WITH EMI GASKET (with integrated glass bead)

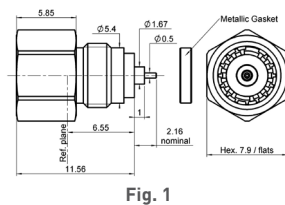


Fig. 1

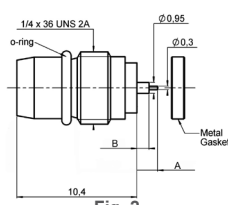


Fig. 2

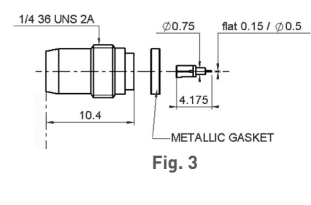
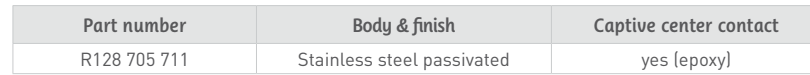


Fig. 3

| Part number  | Fig. | Dimension |        | Body & finish              | Captive center contact | Note                                    |
|--------------|------|-----------|--------|----------------------------|------------------------|-----------------------------------------|
|              |      | A (mm)    | B (mm) |                            |                        |                                         |
| R128 609 701 | 1    |           |        | Stainless steel passivated | yes                    | Female                                  |
| R128 639 000 | 2    | 1.8       | 1      |                            |                        | Stainless steel gold plated             |
| R128 639 001 |      | 3         |        |                            |                        |                                         |
| R128 639 020 |      | 1.8       | 1.05   |                            |                        |                                         |
| R128 639 100 | 3    |           |        | Stainless steel passivated |                        | Male, with auxiliary contact, no O-ring |
| R128 639 071 |      |           |        |                            |                        |                                         |

## FEMALE-FEMALE STRAIGHT ADAPTER

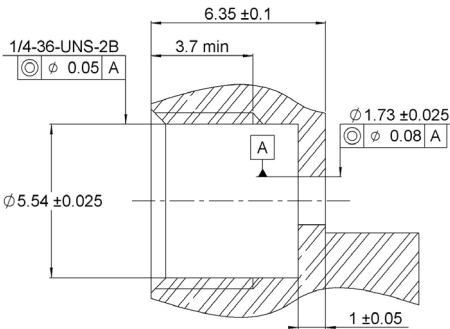


|   | mm   |      |
|---|------|------|
|   | Maxi | mini |
| A | 2.3  | 2.1  |
| B | 7.63 | 7.62 |
| C | 1.65 | 1.45 |

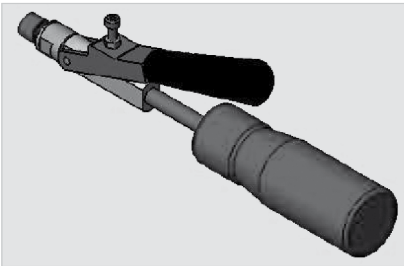
Panel drilling

HERMETIC GLASS BEAD RECEPTACLES

P17



INSTALLATION TOOLS FOR HERMETIC RECEPTACLES



| Part number  | Body & finish | Captive center contact                 |
|--------------|---------------|----------------------------------------|
| R282 340 000 | 280 N.cm      | Tool for male receptacles R128 639 xxx |

## Introduction

Radiall stainless steel SMA connectors have been designed for applications where reliability, durability, robustness and high frequency are critical.

### • WIDE RANGE

The stainless steel SMA range offers cable connectors for both flexible or semi-rigid cables, panel and PCB mount receptacles, press mount, microstrip, universal, through hole pins and end launch connectors. In series adapters and between series adapters including PUSH-ON interface are also available.

All Radiall stainless steel SMA connectors can be mated with Radiall commercial (brass) SMA connectors.

### • CONVENIENT 3-PIECE DESIGN ON MOST CONNECTORS FOR FLEXIBLE CABLES

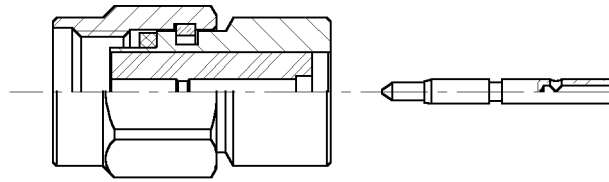
- For straight models: single piece body + center contact + outer ferrule
- For right angle models: single piece body + cap + outer ferrule

### • FAST AND RELIABLE CABLE ATTACHMENT

The cable connectors can be either fully crimped or soldered/crimped, offering full flexibility for high volume production with standard manual or pneumatic tooling: fast and reliable.

- The center contact can be either crimped or soldered
- The outer contact is attached to the cable by crimping a ferrule

### • SIMPLE SNAP-IN CENTER CONTACT CAPTIVATION (FOR FULL CRIMP MODELS)



The relative position of the center contact into the interface is mechanically guaranteed by the snapping of the insulator inner shoulder into the groove of the center contact.

This design facilitates the captivation operation in contrast of other designs, requiring 2 insulators to provide contact retention.

### • EXTENDED FREQUENCY SMA DC-27 GHz

Radiall offers an extended frequency SMA range allowing coaxial system operation up to 27 GHz. This series mates with the standard SMA series and maintains the same mechanical characteristics (part numbers ending with 700, 701 or 702).

### • SOLDERLESS ATTACHMENT TO SEMI-RIGID CABLE

Radiall's SMA crimp connector series offers an exciting alternative for assembling SMA connectors to semi-rigid cable. The main advantages of these connectors are: time savings, repeatability and performance.



## Introduction



### • SMA HERMETIC

Hermetic connectors are required to maintain a pressurized or vacuum environment inside a micro-electronic package. Radiall offers 3 types of hermetic connectors:

#### 1. Field replaceable hermetic receptacles with separate glass bead

(leakage rate below  $10^{-8}$  atm.cm<sup>3</sup>/sec)

The hermeticity level is guaranteed by the glass bead soldered into the package. A large selection of glass beads is available from dia 0.3 to 0.5 mm. They are usually ordered separately from the receptacle. The receptacle can be removed (field replaceable) from the package for maintenance without any risk of leakage. The field replaceable receptacle is recommended when a high number of matings is required.

#### 2. Hermetic receptacles with integrated glass bead

(leakage rate below  $10^{-8}$  atm.cm<sup>3</sup>/sec)

The glass bead is already in place inside the receptacle, hermeticity is guaranteed by a solder joint between the receptacle and the package or with a metallic compression gasket. Screw-on receptacle with metallic compression gasket offers superior climatic resistance: -65°C +200°C.

#### 3. Hermetic receptacles without glass bead

(leakage rate below  $10^{-6}$  atm/cm<sup>3</sup>/sec)

A good hermeticity level is obtained with a metallic gasket at a cost advantage compared to glass beads.



50Ω

DC - 18 GHz  
DC - 27 GHz

### GENERAL

- Sub-miniature coaxial connectors
- Screw-on coupling
- High RF performance
- 2 plating options:
  - passivated stainless steel
  - gold plated
- Wide hermetically sealed range
- Space qualified range of products
- SMA extended frequency 27 GHz

### APPLICABLE STANDARDS

- MIL-C-39012
- EC 169-1
- CECC 22110
- CECC 22111 - 801 to 808
- BS 9210 N006

### SPACE QUALIFIED/APPROVALS

(For space range)

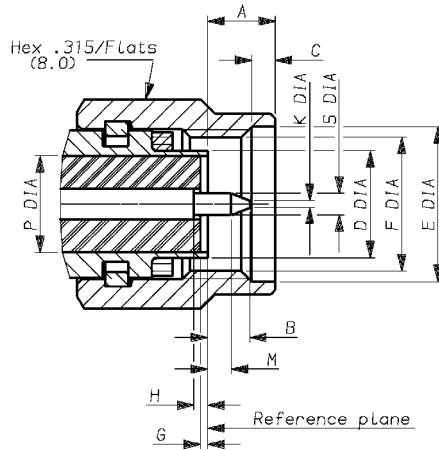
- SCC 3402 (ESA)
- CNES

### APPLICATIONS

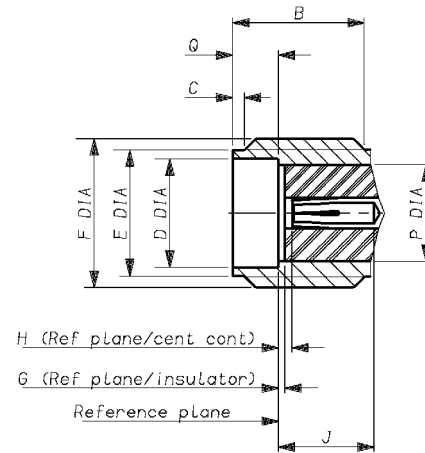
- Civil & Military Telecommunications
- Civil & Military Aeronautics
- Military equipments
- Space
- Measurement systems

Interface

## PLUG



## JACK



| Letter | mm            |       | inch      |       |
|--------|---------------|-------|-----------|-------|
|        | min.          | max.  | min.      | max.  |
| A      |               | 3.43  |           | .135  |
| B      |               | 2.54  |           | .100  |
| C      | 0.38          | 1.14  | .015      | .045  |
| D DIA  |               | 4.59  |           |       |
| E      | 6.35          |       | .250      |       |
| F DIA  | 1/4 36 UNS 2B |       |           |       |
| G*     | 0.0           | -0.20 | 0.0       | -.008 |
| H*     | 0.0           | -0.25 | 0.0       | -.010 |
| J      |               |       |           |       |
| K DIA  |               | 0.38  |           | .015  |
| M      | 1.27          |       | .050      |       |
| P DIA  | 4.10 nom.     |       | .161 nom. |       |
| Q DIA  |               |       |           |       |
| S DIA  | 0.90          | 0.94  | .035      | .037  |

| Letter | mm            |       | inch      |       |
|--------|---------------|-------|-----------|-------|
|        | min.          | max.  | min.      | max.  |
| A      |               |       |           |       |
| B      | 4.31          |       | .170      |       |
| C      | 0.38          | 1.14  | .015      | .045  |
| D DIA  | 4.596         |       | .181      |       |
| E DIA  | 5.28          | 5.49  | .208      | .216  |
| F DIA  | 1/4 36 UNS 2A |       |           |       |
| G*     | 0.0           | -0.20 | 0.0       | -.008 |
| H*     | 0.0           | -0.25 | 0.0       | -.010 |
| J      | 2.92          |       | .115      |       |
| K      |               |       |           |       |
| M      |               |       |           |       |
| P DIA  | 4.10 nom.     |       | .161 nom. |       |
| Q      | 1.88          | 1.98  | .074      | .078  |
| S DIA  |               |       |           |       |

**\*Note:**  
Means behind ref plane

## Characteristics

| Test / Characteristics | Values / Remarks |
|------------------------|------------------|
|------------------------|------------------|

## ELECTRICAL CHARACTERISTICS

| Impedance                                                       |                         | 50Ω                 |                     |                               |          |                        |          |
|-----------------------------------------------------------------|-------------------------|---------------------|---------------------|-------------------------------|----------|------------------------|----------|
| Frequency range                                                 |                         | DC - 18 GHz         |                     |                               |          |                        | Extended |
| V.S.W.R. (typ.)<br>• Straight connector                         | Frequency               | 1 GHz               | 2.4 GHz             | 6 GHz                         | 12.4 GHz | 18 GHz                 | 27 GHz   |
|                                                                 | .085"                   | 1.01                | 1.01                | 1.04                          | 1.06     | 1.06                   | 1.12     |
|                                                                 | .141"                   | 1.01                | 1.01                | 1.01                          | 1.03     | 1.05                   | 1.10     |
|                                                                 | 2.6/50S                 | 1.05                | 1.07                | 1.12                          | 1.15     |                        |          |
|                                                                 | 5/50S                   | 1.04                | 1.05                | 1.10                          | 1.12     |                        |          |
|                                                                 | • Right angle connector |                     |                     |                               |          |                        |          |
|                                                                 | .085"                   | 1.01                | 1.02                | 1.06                          | 1.14     |                        |          |
|                                                                 | .141"                   | 1.01                | 1.02                | 1.08                          | 1.10     |                        |          |
|                                                                 | 2.6/50S                 | 1.06                | 1.15                | 1.18                          | 1.24     |                        |          |
|                                                                 | 5/50S                   | 1.06                | 1.15                | 1.15                          | 1.25     |                        |          |
| Insertion loss (typ.) dB<br>• Straight connector                | .085"                   | 0.03                | 0.03                | 0.05                          | 0.08     | 0.10                   | 0.15     |
|                                                                 | .141"                   | 0.02                | 0.02                | 0.02                          | 0.02     | 0.02                   | 0.10     |
|                                                                 | 2.6/50S                 |                     |                     |                               |          |                        |          |
|                                                                 | 5/50S                   |                     |                     |                               |          |                        |          |
|                                                                 | • Right angle connector |                     |                     |                               |          |                        |          |
|                                                                 | .085"                   |                     |                     |                               |          |                        |          |
|                                                                 | .141"                   |                     |                     |                               |          |                        |          |
|                                                                 | 2.6/50S                 |                     |                     |                               |          |                        |          |
|                                                                 | 5/50S                   |                     |                     |                               |          |                        |          |
|                                                                 |                         |                     |                     |                               |          |                        |          |
|                                                                 |                         |                     |                     |                               |          |                        |          |
| RF leakage (dB max)                                             |                         | - 90 + F [GHz]      |                     |                               |          |                        |          |
| • Connectors for semi-rigid cables solder attachment            |                         |                     |                     |                               |          |                        |          |
| • Connectors for flexible cables crimp attachment               |                         | - 60 + F [GHz]      |                     |                               |          |                        |          |
| • Receptacles                                                   |                         | - 100 + F [GHz]     |                     |                               |          |                        |          |
| Insulation resistance                                           |                         | 5 000 MΩ min        |                     |                               |          |                        |          |
| Contact resistance                                              |                         | After tests         |                     |                               | Initial  |                        |          |
| • Outer conductor                                               |                         | 4 mΩ                |                     |                               | 3 mΩ     |                        |          |
| • Inner conductor                                               |                         | 3 mΩ                |                     |                               | 2 mΩ     |                        |          |
| Working voltage in VRMS<br>• Sea level<br>• 70 000 ft (21000 m) |                         | .085", RG 405, KS 1 | .141", RG 402, KS 2 | RG 174, 188, 316, KX 3, KX 22 |          | RG 55, 142, 223, KX 23 |          |
|                                                                 |                         | 350                 | 500                 | 250                           |          | 335                    |          |
|                                                                 |                         | 85                  | 125                 | 65                            |          | 85                     |          |
|                                                                 |                         |                     |                     |                               |          |                        |          |
| Dielectric withstanding voltage in VRMS                         |                         | 1000                | 1500                | 750                           |          | 1000                   |          |
| RF testing voltage at in VRMS                                   |                         | 670                 | 1000                | 500                           |          | 670                    |          |

## MECHANICAL CHARACTERISTICS

|                                 |                                       |                     |                               |                        |
|---------------------------------|---------------------------------------|---------------------|-------------------------------|------------------------|
| Durability                      | 500 matings                           |                     |                               |                        |
| Force to engage and disengage   | 23 Ncm - [2 inch pounds]              |                     |                               |                        |
| Recommended coupling nut torque | 80 to 115 Ncm - [7 to 10 inch pounds] |                     |                               |                        |
| Coupling nut retention force    | 270 N - [60 Lbs]                      |                     |                               |                        |
| Cable retention force           | .085", RG 405, KS 1                   | .141", RG 402, KS 2 | RG 174, 188, 316, KX 3, KX 22 | RG 55, 142, 223, KX 23 |
|                                 | 135 N [30 Lbs]                        | 270 N [60 Lbs]      | 110 N [25 Lbs]                | 180 N [40 Lbs]         |
| Center contact retention force  |                                       |                     |                               |                        |
|                                 | 27 N                                  |                     |                               |                        |
| • Axial                         | 2.8 N                                 |                     |                               |                        |
| • Torque                        |                                       |                     |                               |                        |

## Characteristics

| Test / Characteristics | Values / Remarks |
|------------------------|------------------|
|------------------------|------------------|

## ENVIRONMENTAL CHARACTERISTICS

|                                                                                                                                      |                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Temperature range <ul style="list-style-type: none"> <li>Standard models</li> <li>Semi-rigid cables</li> <li>R125 753 000</li> </ul> | -65°C / + 165°C<br>-65°C / +105°C<br>-40°C / +100°C                                           |
| Thermal shock                                                                                                                        | MIL STD 202, method 107, condition B                                                          |
| High temperature test                                                                                                                | MIL STD 202, method 108                                                                       |
| Corrosion (salt spray)                                                                                                               | MIL STD 202, method 101, condition B                                                          |
| Vibration                                                                                                                            | MIL STD 202, method 204, condition D, 20g                                                     |
| Shock                                                                                                                                | MIL STD 202, method 213                                                                       |
| Moisture resistance                                                                                                                  | MIL STD 202, method 106                                                                       |
| Hermetic test                                                                                                                        | Down to 10 <sup>-6</sup> mmHg (Torr) leakage rate < 10 <sup>-6</sup> atm/cm <sup>3</sup> /sec |
| Barometric pressure                                                                                                                  | MIL STD 202, method 105, condition C                                                          |

## MATERIALS AND PLATING

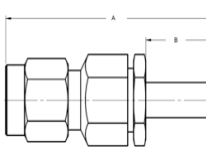
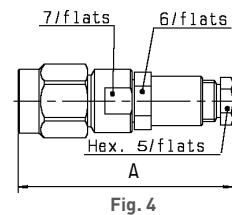
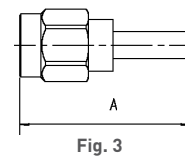
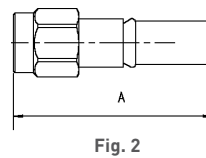
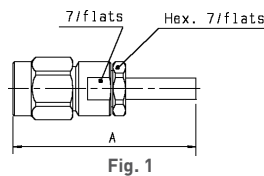
|                 | Material                                  | Plating                            |
|-----------------|-------------------------------------------|------------------------------------|
| Body/nut        | Stainless steel                           | Passivated or Gold plated (bodies) |
| Center contacts | Beryllium copper (female)<br>Brass (male) | Gold plated                        |
| Gaskets         | Silicone rubber                           |                                    |
| Insulators      | PTFE                                      |                                    |

Standard packaging: 100 pieces

All dimensions are given in mm.

## Straight plugs

## STRAIGHT PLUGS FOR FLEXIBLE CABLES



| Cable group           | Cable group dia. | Part number (Gold) | Part number (Passivated) | Fig. | Dimensions A (mm) | Captive center contact | Assembly type | Note                                |
|-----------------------|------------------|--------------------|--------------------------|------|-------------------|------------------------|---------------|-------------------------------------|
| RG178 / RG196         | 2/50/S           | R125 069 000       |                          | 1    | 26                | yes                    | Crimp         |                                     |
| Special               | 2.2/50/D         |                    | R125 002 200             | 4    | 25                | yes                    | Clamp         |                                     |
| RG174 / RG316         | 2.6/50/S         | R125 071 120       |                          | 3    | 24.3              | yes                    | Crimp         | Single piece body                   |
|                       |                  | R125 072 000       | R125 072 001             | 2    | 21.1              | no                     |               | Single piece body heatshrink sleeve |
|                       |                  | R125 073 000       | R125 073 001             | 1    | 26                | yes                    | Clamp         |                                     |
|                       |                  | R125 091 000       | R125 091 001             | 4    | 2                 | yes                    |               |                                     |
| RD316                 | 2.6/50/D         | R125 072 080       |                          | 2    | 20.1              | no                     | Crimp         | Single piece body heatshrink sleeve |
|                       |                  | R125 072 220       |                          | 3    | 23.4              | yes                    |               | Single piece body                   |
| RG58 / RG141          | 5/50/S           | R125 075 000       |                          | 3    | 24.9              | no                     |               | Single piece body heatshrink sleeve |
|                       |                  | R125 077 000       |                          | 1    | 28                | yes                    |               |                                     |
| RG142 / RG223 / RG400 | 5/50/D           | R125 076 000       | R125 076 001             | 3    | 25                | no                     |               |                                     |
|                       |                  | R125 078 000       | R125 078 001             | 1    | 28                | yes                    |               |                                     |



## Straight plugs

## STRAIGHT PLUGS FOR FLEXIBLE CABLES (CONT'D)

| Cable group       | Cable group dia. | Part number (Gold) | Part number (Passivated) | Fig. | Dimensions A (mm) | Dimensions B (mm) | Captive center contact | Assembly type | Note                                                    |
|-------------------|------------------|--------------------|--------------------------|------|-------------------|-------------------|------------------------|---------------|---------------------------------------------------------|
| RG178 / RG196     | 2/50/S           | 9001-1023-002      | 9001-9023-002            | 3    | 20.3              |                   | no                     | Crimp         | For passivated version, coupling nut only is passivated |
|                   |                  | 9001-1033-002      | 9001-9033-002            |      |                   |                   |                        | Solder        |                                                         |
|                   |                  | 9001-1553-002      | 9201-9553-002            | 5    | 19.5              | 0                 | yes                    | Clamp         |                                                         |
|                   |                  | 9001-1573-002      | 9201-9573-002            |      |                   |                   |                        | Crimp         |                                                         |
| RD178             | 2/50/D           | 9001-1023-005      | 9001-9023-005            | 3    | 20.3              |                   | no                     | Solder        |                                                         |
|                   |                  | 9001-1033-005      | 9001-9033-005            |      |                   |                   |                        | Clamp         |                                                         |
|                   |                  | 9001-1553-005      | 9001-9553-005            | 5    | 19.5              | 0                 | yes                    | Clamp         |                                                         |
|                   |                  | 9001-1573-005      | 9001-9573-005            |      |                   |                   |                        | Crimp         |                                                         |
| RG174/RG316       | 2.6/50/S         | 9001-1023-003      | 9001-9023-003            | 3    | 20.3              |                   | no                     | Solder        |                                                         |
|                   |                  | 9001-1033-003      | 9001-9033-003            |      |                   |                   |                        | Clamp         |                                                         |
|                   |                  | 9001-1553-003      | 9001-9553-003            | 5    | 19.5              | 0                 | yes                    | Clamp         |                                                         |
|                   |                  | 9001-1573-003      | 9001-9573-003            |      |                   |                   |                        | Crimp         |                                                         |
| RD316             | 2.6/50/D         | 9001-1023-019      | 9001-9023-019            | 3    | 20.3              |                   | no                     | Solder        |                                                         |
|                   |                  | 9001-1033-019      | 9001-9033-019            |      |                   |                   |                        | Clamp         |                                                         |
|                   |                  | 9001-1553-019      | 9001-9553-019            | 5    | 19.5              | 0                 | yes                    | Clamp         |                                                         |
|                   |                  | 9001-1573-019      | 9001-9573-019            |      |                   |                   |                        | Crimp         |                                                         |
| RG58/RG141        | 5/50/S           | 9001-1023-006      | 9001-9023-006            | 3    | 20.3              |                   | no                     | Solder        |                                                         |
|                   |                  | 9001-1033-006      | 9001-9033-006            |      |                   |                   |                        | Clamp         |                                                         |
|                   |                  | 9001-1553-006      | 9001-9553-006            | 5    | 19.5              | 0                 | yes                    | Clamp         |                                                         |
|                   |                  | 9001-1573-006      | 9001-9573-006            |      |                   |                   |                        | Crimp         |                                                         |
| RG142/RG223/RG400 | 5/50/D           | 9001-1023-001      | 9001-9023-001            | 3    | 20.3              |                   | no                     | Solder        |                                                         |
|                   |                  | 9001-1033-001      | 9001-9033-001            |      |                   |                   |                        | Clamp         |                                                         |
|                   |                  | 9001-1553-001      | 9001-9553-001            | 5    | 19.5              | 0                 | yes                    | Clamp         |                                                         |
|                   |                  | 9001-1573-001      | 9001-9573-001            |      |                   |                   |                        | Crimp         |                                                         |

## STRAIGHT PLUGS SOLDER TYPE FOR SEMI-RIGID CABLES

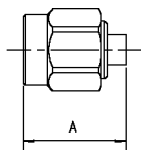
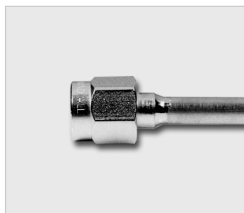


Fig. 1

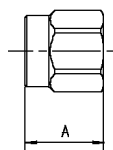


Fig. 2

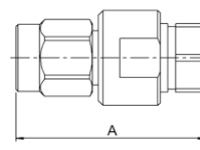


Fig. 3

| Cable group | Cable group dia. | Part number (Gold) | Part number (Gold/Passivated coupling nut) | Part number (Nickel) | Fig. | Dimensions A (mm) | Captive center contact | Note                                              |
|-------------|------------------|--------------------|--------------------------------------------|----------------------|------|-------------------|------------------------|---------------------------------------------------|
| RG405       | .085"            | R125 052 000       | R125 052 002                               |                      | 1    | 11.1              | no                     | Single piece body                                 |
|             |                  | R125 052 170       |                                            |                      |      |                   |                        | Loose parts                                       |
|             |                  | R125 052 500       |                                            |                      |      |                   |                        | Retractable coupling nut / Single piece body      |
|             |                  |                    | R125 052 702                               |                      |      |                   |                        | DC-27 GHz Single piece body                       |
| RG402       | .141"            | R125 054 000       | R125 054 002                               |                      | 2    | 8.5               | n/a                    | Without center contact                            |
|             |                  | R125 054 500       |                                            |                      |      | 7.5               | n/a                    | Without center contact / Retractable coupling nut |
|             |                  | R125 055 000       | R125 055 002                               |                      | 1    | 11.2              | no                     | Single piece body                                 |
|             |                  | R125 055 500       |                                            |                      |      |                   |                        | Retractable coupling nut / Single piece body      |
|             |                  |                    | R125 055 702                               |                      |      |                   |                        | DC-27 GHz without center contact                  |
|             |                  |                    | R125 057 002                               |                      |      |                   |                        | Without center contact                            |
| RG401       | .250"            | R125 051 000       |                                            |                      | 3    | 21.1              | no                     | Two pieces body                                   |

## Straight plugs

## STRAIGHT PLUGS SOLDER TYPE FOR SEMI-RIGID CABLES (CONT'D)

| Cable group | Cable group dia. | Part number (Gold) | Part number (Gold/Passivated coupling nut) | Part number (Nickel) | Fig. | Dimensions A (mm) | Captive center contact          | Note                   |
|-------------|------------------|--------------------|--------------------------------------------|----------------------|------|-------------------|---------------------------------|------------------------|
| RG405       | .085"            | 9501-1593-010      | 9501-9593-010                              |                      | 3    | 19.5              | yes                             | Solder-Clamp           |
|             |                  | 9401-1083-010      |                                            | 9401-7083-010        | 1    | 11.2              | no                              | Solder type            |
|             |                  | 9401-1083-210      |                                            | 9401-7083-210        |      | 8.4               |                                 |                        |
|             |                  | 9401-1583-010      |                                            | 9401-7583-010        |      | 11.2              | yes/For one-step cable assembly |                        |
| RG402       | .141"            | 9501-1593-009      | 9501-9593-009                              |                      | 3    | 19.5              | yes                             | Solder-Clamp           |
|             |                  | 9401-1083-109      |                                            | 9401-7083-109        | 1    | 11.2              | no                              | Solder type            |
|             |                  | 9401-1583-109      |                                            | 9401-7583-109        |      |                   | yes/For one-step cable assembly |                        |
|             |                  | 9301-1063-009      |                                            | 9301-7063-009        |      | 8.4               | n/a                             | Without center contact |

## STRAIGHT PLUGS CRIMP TYPE FOR SEMI-RIGID CABLES

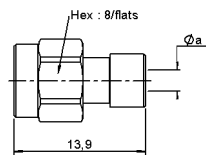


Fig. 1

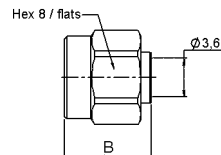


Fig. 2

| Cable group | Cable group dia. | Part number (gold/passivated coupling nut) | Fig. | Dimensions A (mm) |      | Captive center contact | Note                     |
|-------------|------------------|--------------------------------------------|------|-------------------|------|------------------------|--------------------------|
|             |                  |                                            |      | Ø a               | B    |                        |                          |
| RG405       | .085"            | R125 052 901                               | 1    | 2.2               |      | yes                    |                          |
| RG402       | .141"            | R125 053 901                               | 2    |                   | 8.25 | n/a                    | Retractable coupling nut |
|             |                  | R125 054 901                               | 2    |                   | 9.7  | n/a                    | Without center contact   |
|             |                  | R125 055 901                               | 1    | 3.64              |      | yes                    |                          |

## Right angle plugs

### RIGHT ANGLE PLUGS FOR FLEXIBLE CABLES

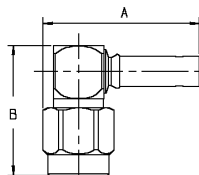


Fig. 1

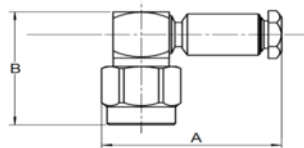


Fig. 2

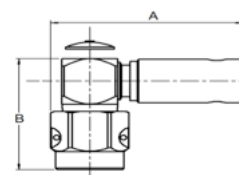


Fig. 3

| Cable group           | Cable group dia. | Part number (Gold) | Part number (Passivated) | Fig. | Dimensions (mm) |       | Captive center contact | Assembly type                               | Note                  |
|-----------------------|------------------|--------------------|--------------------------|------|-----------------|-------|------------------------|---------------------------------------------|-----------------------|
|                       |                  |                    |                          |      | A               | B     |                        |                                             |                       |
| RG178 / RG196         | 2/50/S           | R125 170 402       |                          | 1    | 19.6            | 16.85 | yes                    | Crimp                                       | Incl. heatshrink tube |
| Special               | 2.2/50/D         |                    | R125 163 200             | 2    | 20.2            | 16.4  |                        | Clamp                                       |                       |
| RG174 / RG316         | 2.6/50/S         | R125 172 000       | R125 172 001             | 1    | 19.6            |       |                        | Crimp                                       | Incl. heatshrink tube |
| RD316                 | 2.6/50/D         | R125 174 000       |                          | 1    | 18.6            |       |                        |                                             |                       |
| RG58 / RG141          | 5/50/S           | R125 175 000       | R125 175 001             | 2    | 21.8            |       |                        |                                             |                       |
|                       |                  | R125 176 000       | R125 176 001             | 2    |                 |       |                        |                                             |                       |
| RG142 / RG223 / RG400 | 5/50/D           | R125 176 505       |                          | 3    |                 |       |                        | Lock wire hole nut<br>Incl. heatshrink tube |                       |
| RG178/RG196           | 2/50/S           | 9043-1523-002      | 9043-9523-002            | 1    | 19.3            | 17    |                        | Crimp                                       |                       |
|                       |                  | 9243-1553-002      | 9243-9553-002            | 2    | 18.8            |       |                        | Clamp                                       |                       |
|                       |                  | 9043-1533-002      |                          |      |                 |       |                        | Solder                                      |                       |
| RD178                 | 2/50/D           | 9043-1523-005      | 9043-9523-005            | 1    | 19.3            |       |                        | Crimp                                       |                       |
|                       |                  | 9243-1553-005      | 9243-9553-005            | 2    | 18.8            |       |                        | Clamp                                       |                       |
|                       |                  | 9043-1533-005      |                          |      |                 |       |                        | Solder                                      |                       |
| RG174/RG316           | 2.6/50/S         | 90431523-003       | 9043-9523-003            | 1    | 19.3            |       |                        | Crimp                                       |                       |
|                       |                  | 9243-1553-003      | 9243-9553-003            | 2    | 18.8            |       |                        | Clamp                                       |                       |
|                       |                  | 9043-1533-003      |                          |      |                 |       |                        | Solder                                      |                       |
| RD316                 | 2.6/50/D         | 9043-1523-019      | 9043-9523-019            | 1    | 19.3            |       |                        | Crimp                                       |                       |
|                       |                  | 9243-1553-019      | 9243-9553-019            | 2    | 18.8            |       |                        | Clamp                                       |                       |
|                       |                  | 9043-1533-019      |                          |      |                 |       |                        | Solder                                      |                       |
| RG58/RG141            | 5/50/S           | 9043-1523-006      | 9043-9523-006            | 1    | 19.3            |       |                        | Crimp                                       |                       |
|                       |                  | 9243-1553-006      | 9243-9553-006            | 2    | 18.8            |       |                        | Clamp                                       |                       |
|                       |                  | 9043-1533-006      |                          | 1    | 19.3            |       |                        | Solder                                      |                       |
| RG142/RG223/RG400     | 5/50/D           | 9243-1553-001      | 9243-9553-001            | 2    | 18.8            |       |                        | Clamp                                       |                       |
|                       |                  | 9043-1533-001      |                          |      |                 |       |                        | Solder                                      |                       |
|                       |                  | 9043-1523-001      | 9043-9523-001            | 1    | 19.3            |       |                        | Crimp                                       |                       |

## Right angle plugs

## RIGHT ANGLE PLUGS FOR SEMI-RIGID CABLES

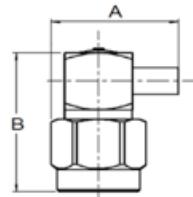


Fig. 1

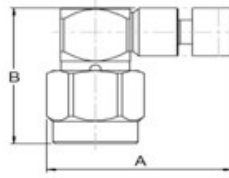


Fig. 2

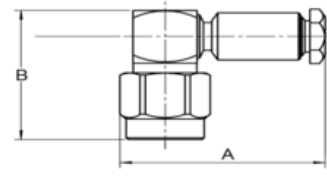


Fig. 3

| Cable group | Cable group dia. | Part number (gold) | Part number (gold/passivated nut) | Fig. | Dimensions A (mm) | Dimensions B (mm) | Captive center contact | Assembly type |
|-------------|------------------|--------------------|-----------------------------------|------|-------------------|-------------------|------------------------|---------------|
| RG405       | .085"            | R125 153 000       | R125 153 002                      | 1    | 11.9              | 16.3              | yes                    | Solder type   |
| RG402       | .141"            | R125 154 000       | R125 154 002                      |      |                   |                   |                        |               |
| RG405       | .085"            |                    | R125 153 901                      | 2    | 15.7              | 15.8              |                        | Crimp type    |
| RG402       | .141"            |                    | R125 154 901                      |      |                   |                   |                        |               |
| RG405       | .085"            | 9443-1563-010      |                                   | 1    | 12.2              | 17                |                        | Solder type   |
| RG402       | .141"            | 9443-1563-009      |                                   |      |                   |                   |                        |               |
| RG405       | .085"            | 9543-1593-010      | 9543-9593-010                     | 3    | 18.8              | 17.5              |                        | Solder-Clamp  |
| RG402       | .141"            | 9543-1593-009      | 9543-9593-009                     |      |                   |                   |                        |               |

## Straight jacks

## STRAIGHT JACKS FOR FLEXIBLE CABLES

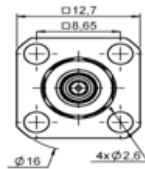


Fig. 1

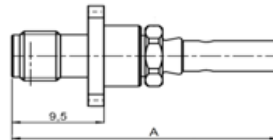


Fig. 2

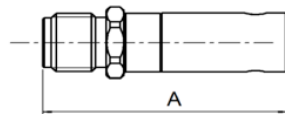


Fig. 3

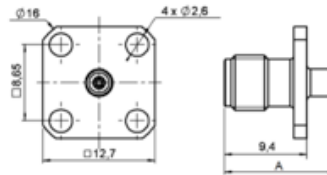


Fig. 4

| Cable group           | Cable group dia. | Part number (Gold) | Part number (Passivated) | Fig. | Dimensions A (mm) | Captive center contact | Panel drilling | Note            |
|-----------------------|------------------|--------------------|--------------------------|------|-------------------|------------------------|----------------|-----------------|
| RG174 / RG316         | 2.6/50/S         | R125 236 000       |                          | 2    | 25.05             | yes                    |                | Crimp or solder |
|                       |                  | R125 272 000       |                          | 1    | 27.5              |                        | P03            | Square flange   |
| RG58 / RG141          | 5/50/S           | R125 237 000       |                          | 3    | 23.1              | no                     |                |                 |
|                       |                  | R125 277 000       |                          | 1    | 28.9              |                        | P03            | Square flange   |
| RG142 / RG223 / RG400 | 5/50/D           | R125 238 000       |                          | 3    | 23.1              |                        |                |                 |

## Straight jacks

## STRAIGHT JACKS FOR FLEXIBLE CABLES (CONT'D)

| Cable group           | Cable group dia. | Part number (Gold) | Part number (Passivated) | Fig. | Dimensions A (mm) | Captive center contact | Panel drilling | Note                      |
|-----------------------|------------------|--------------------|--------------------------|------|-------------------|------------------------|----------------|---------------------------|
| RG178 / RG196         | 2/50S            | 9002-1023-002      | 9002-9023-002            | 3    | 20.3              | no                     |                | Crimp type                |
|                       |                  | 9002-1033-002      |                          |      | 20.3              |                        |                | Solder type               |
|                       |                  | 9102-1573-002      | 9102-9573-002            | 2    | 27.9              | yes                    |                | Crimp type                |
|                       |                  | 9031-1023-002      | 9031-9023-002            | 4    | 21                | no                     | P03            | Crimp type-square flange  |
|                       |                  | 9031-1033-002      |                          |      | 21                |                        |                | Solder type-square flange |
|                       |                  | 9131-1573-002      | 9131-9573-002            | 1    | 27.4              | yes                    |                | Crimp type-square flange  |
| RD178                 | 2/50/D           | 9002-1023-005      | 9002-9023-005            | 3    | 20.3              | no                     |                | Crimp type                |
|                       |                  | 9002-1033-005      |                          |      | 20.3              |                        |                | Solder type               |
|                       |                  | 9102-1573-005      | 9102-9573-005            | 2    | 27.9              | yes                    |                | Crimp type                |
|                       |                  | 9031-1023-005      | 9031-9023-005            | 4    | 21                | no                     | P03            | Crimp type-square flange  |
|                       |                  | 9031-1033-005      |                          |      | 21                |                        |                | Solder type-square flange |
|                       |                  | 9131-1573-005      | 9131-9573-005            | 1    | 27.4              | yes                    |                | Crimp type-square flange  |
| RG174 / RG316         | 2.6/50S          | 9002-1023-003      | 9002-9023-003            | 3    | 20.3              | no                     |                | Crimp type                |
|                       |                  | 9002-1033-003      |                          |      | 20.3              |                        |                | Solder type               |
|                       |                  | 9102-1573-003      | 9102-9573-003            | 2    | 27.9              | yes                    |                | Crimp type                |
|                       |                  | 9031-1023-003      | 9031-9023-003            | 4    | 21                | no                     | P03            | Crimp type-square flange  |
|                       |                  | 9031-1033-003      |                          |      | 21                |                        |                | Solder type-square flange |
|                       |                  | 9131-1573-003      | 9131-9573-003            | 1    | 27.4              | yes                    |                | Crimp type-square flange  |
| RD316                 | 2.6/50D          | 9002-1023-019      | 9002-9023-019            | 3    | 20.3              | no                     |                | Crimp type                |
|                       |                  | 9002-1033-019      |                          |      | 20.3              |                        |                | Solder type               |
|                       |                  | 9102-1573-019      | 9102-9573-019            | 2    | 27.9              | yes                    |                | Crimp type                |
|                       |                  | 9031-1023-019      | 9031-9023-019            | 4    | 21                | no                     | P03            | Crimp type-square flange  |
|                       |                  | 9031-1033-019      |                          |      | 21                |                        |                | Solder type-square flange |
|                       |                  | 9131-1573-019      | 9131-9573-019            | 1    | 27.4              | yes                    |                | Crimp type-square flange  |
| RG58 / RG141          | 5/50S            | 9002-1023-006      | 9002-9023-006            | 3    | 20.3              | no                     |                | Crimp type                |
|                       |                  | 9102-1573-006      | 9102-9573-006            | 2    | 27.9              | yes                    |                | Solder type               |
|                       |                  | 9002-1033-006      |                          | 3    | 20.3              | no                     |                | Crimp type-square flange  |
|                       |                  | 9031-1023-006      | 9031-9023-006            | 4    | 21                |                        |                | Solder type-square flange |
|                       |                  | 9031-1033-006      |                          |      | 21                | yes                    |                | Crimp type-square flange  |
|                       |                  | 9131-1573-006      | 9131-9573-006            | 1    | 27.4              |                        |                | Solder type-square flange |
| RG142 / RG223 / RG400 | 5/50D            | 9002-1033-001      |                          | 3    | 20.3              | no                     |                | Solder type               |
|                       |                  | 9102-1573-001      | 9102-9573-001            | 2    | 27.9              | yes                    |                | Crimp type                |
|                       |                  | 9031-1023-001      | 9031-9023-001            | 4    | 21                | no                     | P03            | Crimp type-square flange  |
|                       |                  | 9031-1033-001      |                          |      | 21                |                        |                | Solder type-square flange |
|                       |                  | 9131-1573-001      | 9131-9573-001            | 1    | 27.4              | yes                    |                | Crimp type-square flange  |
|                       |                  | 9002-1023-001      | 9002-9023-001            | 3    | 20.3              | no                     |                | Crimp type                |

## Straight jacks

## STRAIGHT JACKS FOR SEMI-RIGID CABLES

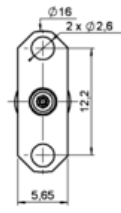


Fig. 1

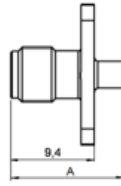


Fig. 2

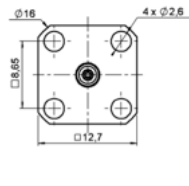


Fig. 3

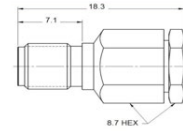


Fig. 4

| Cable group | Cable group dia. | Part number (Gold) | Part number (Passivated) | Part number (Nickel) | Fig. | Dimensions                      | Captive center contact          | Panel drilling                  | Note          |     |
|-------------|------------------|--------------------|--------------------------|----------------------|------|---------------------------------|---------------------------------|---------------------------------|---------------|-----|
|             |                  |                    |                          |                      |      | A (mm)                          |                                 |                                 |               |     |
| RG405       | .085"            | R125 222 000       |                          |                      | 3    | 12.7                            | no                              |                                 |               |     |
|             |                  | R125 252 000       |                          |                      | 1    |                                 |                                 | P02                             | 2 hole flange |     |
|             |                  | R125 256 000       |                          |                      | 2    |                                 |                                 | P03                             | Square flange |     |
| RG402       | .141"            | R125 225 000       |                          |                      | 3    |                                 |                                 |                                 |               |     |
|             |                  | R125 251 000       |                          |                      | 1    |                                 |                                 | P02                             | 2 hole flange |     |
|             |                  | R125 255 000       |                          |                      | 2    |                                 |                                 | P03                             | Square flange |     |
|             |                  | R125 225 900       |                          |                      |      |                                 |                                 |                                 |               |     |
| RG405       | .085"            | 9402-1083-010      |                          | 9402-7083-010        | 3    | 15.2                            | yes                             |                                 | Solder type   |     |
|             |                  | 9402-1583-010      |                          | 9402-7583-010        |      | 12.7                            | no                              |                                 |               |     |
|             |                  | 9431-1083-010      |                          | 9431-7083-010        | 2    |                                 | 13.9                            | yes/for one-step cable assembly |               | P03 |
|             |                  | 9431-1583-010      |                          | 9431-7583-010        |      | no                              |                                 |                                 |               |     |
|             |                  | 9441-1083-010      |                          | 9441-7083-010        |      | yes/for one-step cable assembly |                                 | P02                             |               |     |
|             |                  | 9441-1583-010      |                          | 9441-7583-010        |      | no                              |                                 |                                 |               |     |
|             |                  | 9502-1593-010      | 9502-9593-010            |                      | 4    | yes/for one-step cable assembly |                                 |                                 |               |     |
|             |                  |                    |                          | yes                  |      | Solder-Clamp type               |                                 |                                 |               |     |
| RG402       | .141"            | 9402-1083-009      |                          | 9402-7083-009        | 3    | 12.7                            | no                              |                                 | Solder type   |     |
|             |                  | 9402-1583-009      |                          | 9402-7583-009        |      |                                 | yes/for one-step cable assembly |                                 |               |     |
|             |                  | 9431-1083-009      |                          | 9431-7083-009        | 2    | 13.9                            | no                              | P03                             |               |     |
|             |                  | 9431-1583-009      |                          | 9431-7583-009        |      |                                 | yes/for one-step cable assembly |                                 |               |     |
|             |                  | 9441-1083-009      |                          | 9441-7083-009        | 1    |                                 | no                              | P02                             |               |     |
|             |                  | 9441-1583-009      |                          | 9441-7583-009        |      |                                 | yes/for one-step cable assembly |                                 |               |     |
|             |                  | 9502-1593-009      | 9502-9593-009            |                      | 4    | yes                             |                                 | Solder-Clamp type               |               |     |

## Bulkhead jacks

## STRAIGHT BULKHEAD JACKS FOR FLEXIBLE CABLES (rear mount)

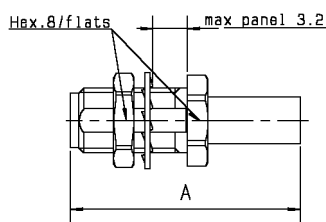
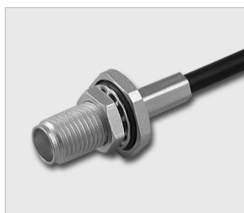


Fig. 1

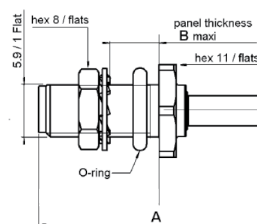


Fig. 2

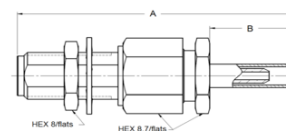
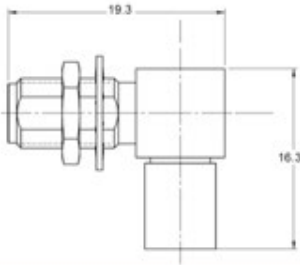


Fig. 3

| Cable group           | Cable group dia. | Part number (Gold) | Part number (Passivated) | Fig. | Dimensions (mm) |     | Captive center contact | Panel drilling | Note               |
|-----------------------|------------------|--------------------|--------------------------|------|-----------------|-----|------------------------|----------------|--------------------|
|                       |                  |                    |                          |      | A               | B   |                        |                |                    |
| RG178 / RG196         | 2/50/S           | R125 320 020       |                          | 2    | 26.1            | 5.6 | yes                    | P06            | Totally waterproof |
| RG174 / RG316         | 2.6/50/S         | R125 303 000       | R125 303 001             | 1    | 25.7            |     |                        |                | Crimp and solder   |
|                       |                  | R125 312 120       |                          |      | 22.4            |     |                        |                | Heatshrink sleeve  |
|                       |                  | R125 321 020       |                          | 2    | 23.7            | 3.2 |                        |                | Full crimp         |
| RD316                 | 2.6/50/D         | R125 313 120       |                          | 1    | 22.4            |     |                        |                | Totally waterproof |
|                       |                  | R125 322 030       |                          | 2    |                 | 3.2 |                        |                | Full crimp         |
| RG58 / RG141          | 5/50/S           | R125 314 120       |                          | 1    | 25.4            |     |                        |                | Panel sealed       |
| RG142 / RG223 / RG400 | 5/50/D           | R125 315 120       |                          |      |                 |     |                        |                | Full crimp         |
|                       |                  | R125 308 000       |                          |      | 29.6            |     |                        |                | Crimp and solder   |
| RG178 / RG196         | 2/50/S           | 9030-1023-002      | 9030-9023-002            |      | 23.9            |     | no                     |                | Crimp type         |
|                       |                  | 9030-1033-002      |                          |      |                 |     |                        |                | Solder type        |
|                       |                  | 9130-1573-002      | 9130-9573-002            | 3    | 30.5            | 9.5 | yes                    |                | Crimp type         |
|                       |                  | 9230-1553-002      | 9230-9553-002            |      | 21              | 0   |                        |                | Clamp type         |
| RD178                 | 2/50/D           | 9030-1023-005      | 9030-9023-005            | 1    | 23.9            |     | no                     |                | Crimp type         |
|                       |                  | 9030-1033-005      |                          |      |                 |     |                        |                | Solder type        |
|                       |                  | 9130-1573-005      | 9130-9573-005            | 3    | 30.5            | 9.5 | yes                    |                | Crimp type         |
|                       |                  | 9230-1553-005      | 9230-9553-005            |      | 21              | 0   |                        |                | Clamp type         |
| RG174 / RG316         | 2.6/50/S         | 9030-1023-003      | 9030-9023-003            | 1    | 23.9            |     | no                     |                | Crimp type         |
|                       |                  | 9030-1033-003      |                          |      |                 |     |                        |                | Solder type        |
|                       |                  | 9130-1573-003      | 9130-9573-003            | 3    | 30.5            | 9.5 | yes                    |                | Crimp type         |
|                       |                  | 9230-1553-003      | 9230-9553-003            |      | 21              | 0   |                        |                | Clamp type         |
| RD316                 | 2.6/50/D         | 9030-1023-019      | 9030-9023-019            | 1    | 23.9            |     | no                     |                | Crimp type         |
|                       |                  | 9030-1033-019      |                          |      |                 |     |                        |                | Solder type        |
|                       |                  | 9130-1573-019      | 9130-9573-019            | 3    | 30.5            | 9.5 | yes                    |                | Crimp type         |
|                       |                  | 9230-1553-019      | 9230-9553-019            |      | 21              | 0   |                        |                | Clamp type         |
| RG58 / RG141          | 5/50/S           | 9030-1023-006      | 9030-9023-006            | 1    | 23.9            |     | no                     |                | Crimp type         |
|                       |                  | 9030-1033-006      |                          |      |                 |     |                        |                | Solder type        |
|                       |                  | 9130-1573-006      | 9130-9573-006            | 3    | 30.5            | 9.5 | yes                    |                | Crimp type         |
|                       |                  | 9230-1553-006      | 9230-9553-006            |      | 21              | 0   |                        |                | Clamp type         |
| RG142 / RG223 / RG400 | 5/50/D           | 9030-1023-001      | 9030-9023-001            | 1    | 23.9            |     | no                     |                | Crimp type         |
|                       |                  | 9030-1033-001      |                          |      |                 |     |                        |                | Solder type        |
|                       |                  | 9130-1573-001      | 9130-9573-001            | 3    | 30.5            | 9.5 | yes                    |                | Crimp type         |
|                       |                  | 9230-1553-001      | 9230-9553-001            |      | 21              | 0   |                        |                | Clamp type         |

**Bulkhead jacks****RIGHT ANGLE BULKHEAD JACKS CRIMP TYPE FOR FLEXIBLE CABLES (rear mount)**

| Cable group           | Cable group dia. | Part number (Gold) | Part number (Passivated) | Captive center contact | Panel drilling | Note       |
|-----------------------|------------------|--------------------|--------------------------|------------------------|----------------|------------|
| RG178 / RG196         | 2/50S            | 9613-1523-002      | 9613-9523-002            | yes                    | P06            | Crimp type |
| RD178                 | 2/50D            | 9613-1523-005      | 9613-9523-005            |                        |                |            |
| RG174 / RG316         | 2.6/50S          | 9613-1523-003      | 9613-9523-003            |                        |                |            |
| RD316                 | 2.6/50D          | 9613-1523-019      | 9613-9523-019            |                        |                |            |
| RG58 / RG141          | 5/50S            | 9613-1523-006      | 9613-9523-006            |                        |                |            |
| RG142 / RG223 / RG400 | 5/50D            | 9613-1523-001      | 9613-9523-001            |                        |                |            |

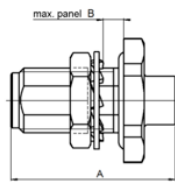
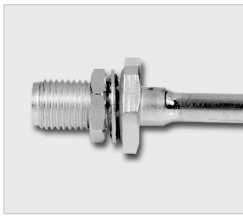
**BULKHEAD JACKS SOLDER TYPE FOR SEMI-RIGID CABLES (rear mount)**

Fig. 1

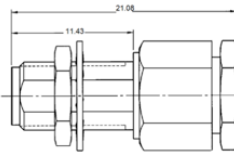


Fig. 2

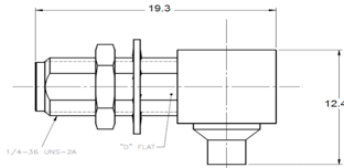


Fig. 3

| Cable group | Cable group dia. | Part number (Gold) | Part number (Nickel) | Part number (Passivated) | Fig. | Dimensions A (mm) | Dimensions B (mm) | Captive center contact          | Panel drilling | Note         |
|-------------|------------------|--------------------|----------------------|--------------------------|------|-------------------|-------------------|---------------------------------|----------------|--------------|
| RG405       | .085"            | R125 326 000       |                      |                          | 1    | 16                | 2.4               | no                              | P06            | Panel sealed |
| RG402       | .141"            | R125 325 000       |                      |                          |      | 17.1              | 3.5               |                                 |                | Unsealed     |
|             |                  | R125 305 000       |                      |                          |      | 17.8              |                   |                                 |                | Panel sealed |
| RG405       | .085"            | 9453-1083-010      | 9453-7083-010        |                          | 3    | 19.3              | 3.2               | yes                             |                | Solder type  |
|             |                  | 9613-1563-010      | 9613-9563-010        |                          | 1    | 17.8              |                   | yes/for one-step cable assembly | P06            | Panel sealed |
|             |                  | 9453-1583-010      | 9453-7583-010        |                          | 2    |                   |                   | yes                             |                | Solder-Clamp |
| RG402       | .141"            | 9530-1593-010      |                      | 9530-9593-010            | 1    | 17.8              |                   | yes/for one-step cable assembly |                | Panel sealed |
|             |                  | 9453-1583-009      | 9453-7583-009        |                          | 2    |                   |                   | yes                             |                | Solder-Clamp |
|             |                  | 9530-1593-009      |                      | 9530-9593-009            | 1    | 17.8              |                   | no                              |                | Panel sealed |
|             |                  | 9453-1083-009      | 9453-7083-009        |                          | 3    | 19.3              |                   | yes                             |                | Solder type  |



## Receptacles

### STRAIGHT FEMALE FLANGE RECEPTACLES - SOLDER POT

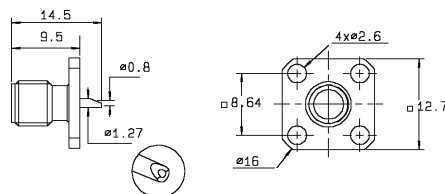
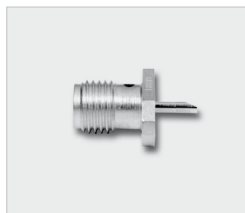


Fig. 1

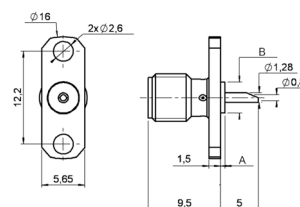


Fig. 2

| Part number<br>(Gold) | Part number<br>(Passivated) | Fig. | Dimensions (mm) |        | Captive center contact | Panel drilling | Note          |
|-----------------------|-----------------------------|------|-----------------|--------|------------------------|----------------|---------------|
|                       |                             |      | A               | B      |                        |                |               |
| R125 403 000          | R125 403 001                | 1    |                 |        | yes (4 indents)        | P04            | Square flange |
| R125 453 000          |                             | 2    | 0.6             | Ø 4.06 |                        | P01            | 2 hole flange |
| R125 454 000          | R125 454 001                |      |                 |        |                        | yes            |               |
| 9408-1113-000         | 9408-9113-000               |      | 0.8             |        |                        |                |               |
| 9408-1113-002         | 9408-9113-002               |      | 0               |        |                        |                |               |

### STRAIGHT AND RIGHT ANGLE FEMALE SQUARE FLANGE RECEPTACLES - SOLDER POT

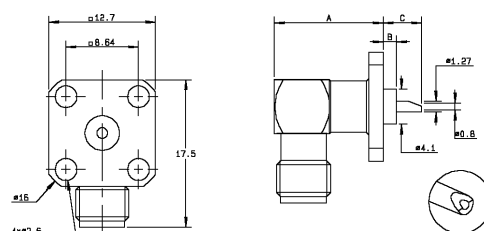
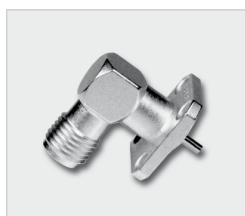


Fig. 1

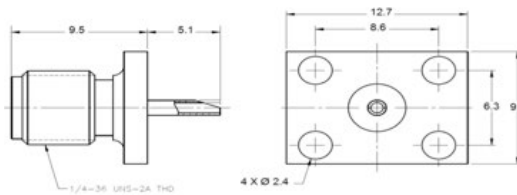


Fig. 2

| Part number<br>(Gold) | Part number<br>(Passivated) | Fig. | Dimensions (mm) |      |     | Captive center contact | Panel drilling |
|-----------------------|-----------------------------|------|-----------------|------|-----|------------------------|----------------|
|                       |                             |      | A               | B    | C   |                        |                |
|                       | R125 653 001                | 1    | 12.4            | 1.57 | 4.6 | yes                    | P04            |
| R125 654 000          |                             |      | 11.1            | 0    | 6.1 |                        |                |
| 9424-1513-000         | 9424-9513-000               |      | 12.7            | 1.6  | 4.8 |                        | P03            |
| 9425-1513-000         | 9425-9513-000               |      | 9.1             |      |     |                        |                |
| 9407-1113-000         | 9407-9113-000               | 2    |                 |      |     |                        |                |

## Receptacles

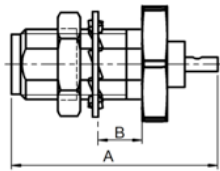
**BULKHEAD FEMALE RECEPTACLE (solder pot)**

Fig. 1

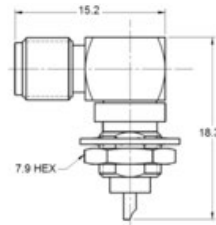


Fig. 2

| Part number<br>(Gold) | Part number<br>(Passivated) | Fig. | Dimensions<br>A (mm) | Dimensions<br>B (mm) | Captive center<br>contact | Panel drilling | Note                        |
|-----------------------|-----------------------------|------|----------------------|----------------------|---------------------------|----------------|-----------------------------|
| R125 553 000          | R125 553 001                | 1    | 17.4                 | 3.4                  | yes (2 indents)           | P06            | Rear mount                  |
| 9412-1113-000         | 9412-9113-000               |      | 17.0                 | 3.2                  | yes                       |                |                             |
| 9422-1113-000         | 9422-9113-000               |      |                      |                      |                           |                | Front mount                 |
| 9432-1113-000         | 9432-9113-000               |      |                      |                      |                           |                | Rear mount,<br>panel sealed |
| 9609-1513-000         | 9609-9513-000               | 2    |                      |                      |                           |                |                             |

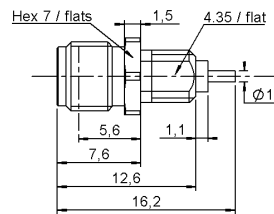
**SCREW-ON FEMALE RECEPTACLES (front mount)**

Fig. 1

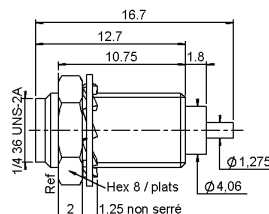


Fig. 2

| Part number (gold) | Fig. | Captive center contact | Note     |
|--------------------|------|------------------------|----------|
| R125 555 500       | 1    | yes                    | Screw-on |
| R125 560 000       | 2    |                        |          |

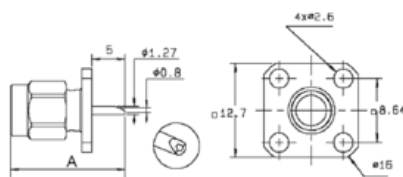
**STRAIGHT MALE FLANGE RECEPTACLES (solder pot)**

Fig. 1

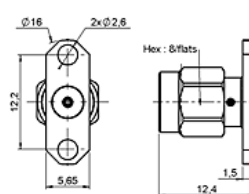
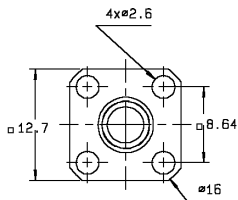
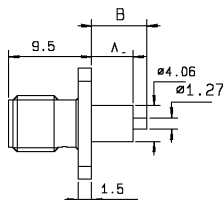


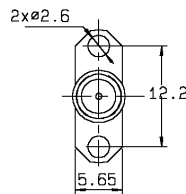
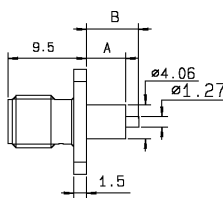
Fig. 2

| Part number (Gold) | Fig. | Captive center contact | Dimensions A (mm) | Panel drilling | Note               |
|--------------------|------|------------------------|-------------------|----------------|--------------------|
| R125 433 000       | 1    | yes (4 indents)        | 17.4              | P04            | Square flange      |
| R125 483 000       | 2    |                        |                   | P01            | 2 hole flange      |
| 9404-1113-000      | 1    | yes                    | 14.5              | P03            | 1/2" Square flange |
| 9476-1113-000      |      |                        |                   | P11            | 3/8" Square flange |

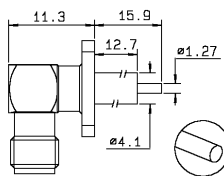
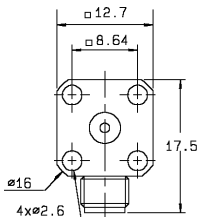
## SQUARE FLANGE EXTENDED DIELECTRIC FEMALE RECEPTACLES



| Part number<br>(Gold) | Part number<br>(Passivated) | Dimensions (mm) |      | Captive center contact | Panel drilling |
|-----------------------|-----------------------------|-----------------|------|------------------------|----------------|
|                       |                             | A               | B    |                        |                |
| R125 413 000          | R125 413 001                | 12.7            | 15.9 | no                     | P04            |
| R125 414 000          | R125 414 001                |                 |      | yes (epoxy)            |                |
| R125 414 004          |                             |                 |      | yes (4indents)         |                |
| R125 415 000          | R125 415 001                | 18              | 20.5 | yes (epoxy)            |                |
| R125 415 030          |                             | 3.2             | 5.4  |                        |                |
| R125 415 275          |                             | 15              | 17.9 | yes (4 indents)        |                |
| R125 415 270          | R125 415 271                |                 |      | yes (epoxy)            |                |
| R125 416 460          |                             | 4               | 8    |                        |                |
| 9004-1113-000         | 9004-9113-000               | 14.9            | 3    | yes (4 indents)        | P11            |
| 9004-1213-000         |                             |                 |      | yes (square flange)    |                |
|                       | 9007-9113-000               |                 |      | yes (4 incidents)      |                |



| Part number<br>(Gold) | Part number<br>(Passivated) | Dimensions (mm) |       | Captive center contact | Panel drilling |  |                 |
|-----------------------|-----------------------------|-----------------|-------|------------------------|----------------|--|-----------------|
|                       |                             | A               | B     |                        |                |  |                 |
| R125 464 000          | R125 464 001                | 12.7            | 15.9  | yes (epoxy)            | P01            |  |                 |
| R125 464 270          | R125 464 271                | 15              | 17.9  |                        |                |  |                 |
| R125 464 274          |                             |                 |       |                        |                |  | yes (4 indents) |
| 9008-1113-000         |                             | 14.98           | 24.32 | no                     |                |  |                 |
| 9008-1213-000         |                             |                 |       |                        |                |  |                 |
|                       | 9008-9113-000               |                 |       |                        |                |  | yes (4 indents) |



| Part number<br>(Gold) | Part number<br>(Passivated) | Captive center contact | Panel drilling |
|-----------------------|-----------------------------|------------------------|----------------|
| R125 654 450          | R125 654 451                | yes                    | P04            |

## Receptacles

## STRAIGHT MALE FLANGE EXTENDED DIELECTRIC RECEPTACLES

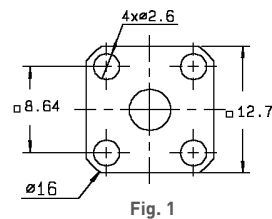
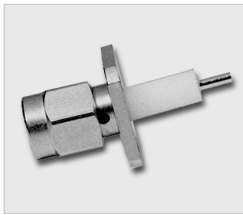


Fig. 1

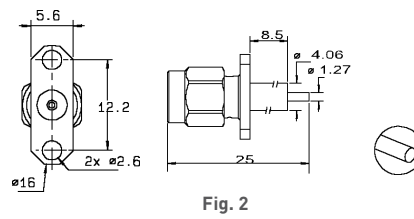


Fig. 2

| Part number (Gold) | Part number (Passivated) | Fig. | Captive center contact | Panel drilling | Note          |
|--------------------|--------------------------|------|------------------------|----------------|---------------|
| R125 444 000       | R125 444 001             | 1    | yes (epoxy)            | P04            | Square flange |
| R125 474 000       | R125 474 001             | 2    |                        | P01            | 2 hole flange |

## PCB FEMALE RECEPTACLES

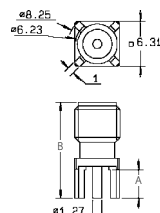


Fig. 1

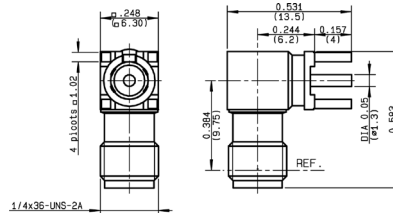


Fig. 2

| Part number (Gold) | Fig. | Dimensions (mm) | Captive center contact | PCB pattern | Note                  |
|--------------------|------|-----------------|------------------------|-------------|-----------------------|
| R125 426 000       | 1    | A 4             | yes                    | P05         | Selective tin plating |
| R125 426 140       |      | B 6.9           |                        |             |                       |
| R125 680 000       | 2    |                 |                        |             |                       |

## STRAIGHT FEMALE SQUARE FLANGE RECEPTACLES - TAB CONTACT

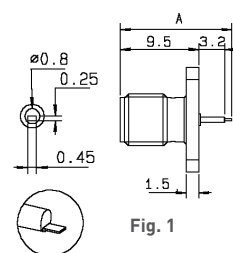
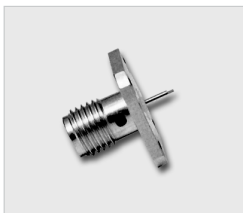


Fig. 1

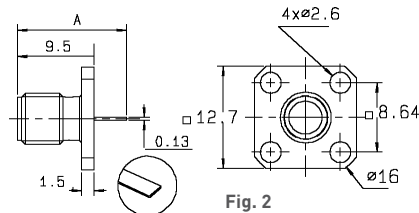


Fig. 2

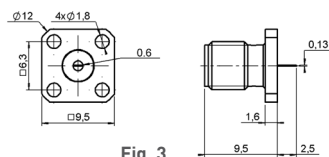


Fig. 3

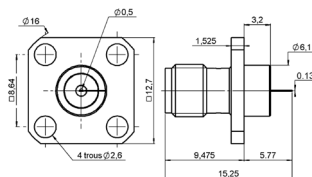


Fig. 4

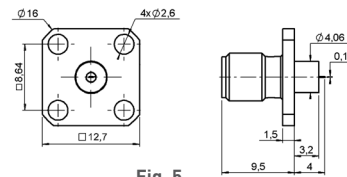


Fig. 5

| Part number (Gold) | Part number (Passivated) | Fig. | Dimensions A (mm) | Captive center contact | Panel drilling | Contact type |
|--------------------|--------------------------|------|-------------------|------------------------|----------------|--------------|
| R125 501 000       | R125 501 001             | 1    | 13.5              | yes (epoxy)            | P04            | Offset tab   |
| R125 510 000       | R125 510 001             | 2    | 12                |                        | P11            | Tab          |
| R125 510 500       | R125 510 501             | 3    | 2.5               |                        |                |              |
| R125 612 120       |                          | 4    |                   |                        |                |              |
| R125 620 000       |                          | 2    | 10.38             |                        | P04            |              |
| R125 622 000       |                          | 5    |                   |                        |                |              |
|                    | R125 943 001             | 3    | 0.89              |                        | P11            |              |

## Receptacles

### STRAIGHT AND RIGHT ANGLE FEMALE 2 HOLE FLANGE RECEPTACLES - TAB CONTACT

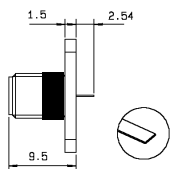
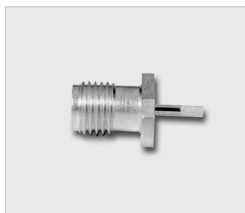


Fig. 1

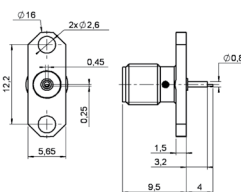


Fig. 2

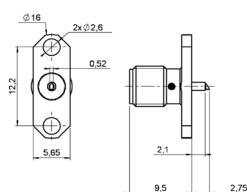


Fig. 3

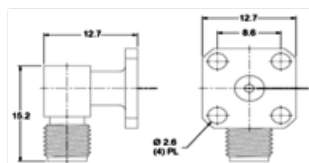


Fig. 4

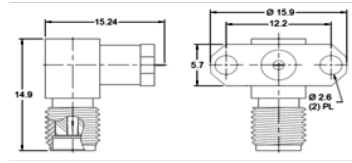
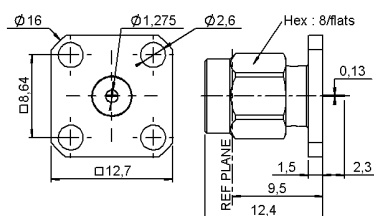


Fig. 5

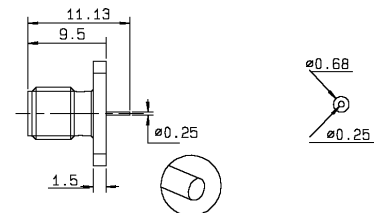
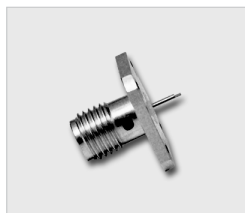
| Part number (Gold) | Part number (Passivated) | Fig. | Captive center contact | Panel drilling | Contact type            |
|--------------------|--------------------------|------|------------------------|----------------|-------------------------|
| R125 451 000       |                          | 2    | yes (epoxy)            | P01            | Offset tab              |
| R125 452 000       |                          | 3    |                        |                | Special                 |
| R125 497 000       |                          | 1    |                        |                | Tab                     |
| 9124-1513-000      | 9124-9513-000            | 4    | yes                    | P03            | Tab contact 1.3mm width |
| 9126-1513-000      | 9126-9513-000            | 5    |                        | P01            |                         |

### STRAIGHT MALE SQUARE FLANGE RECEPTACLES - TAB CONTACT



| Part number (Gold) | Part number (Passivated) | Captive center contact | Panel drilling | Note           |
|--------------------|--------------------------|------------------------|----------------|----------------|
| R125 488 000       | R125 488 001             | yes (epoxy)            | P04            | Unit packaging |

### STRAIGHT FEMALE SQUARE FLANGE RECEPTACLES - CYLINDRICAL CONTACT



| Part number (Gold) | Captive center contact | Panel drilling | Note           |
|--------------------|------------------------|----------------|----------------|
| R125 610 000       | yes (epoxy)            | P04            | Unit packaging |

## Receptacles for microstrip

## STRAIGHT FEMALE FLANGE RECEPTACLES - CYLINDRICAL CONTACT

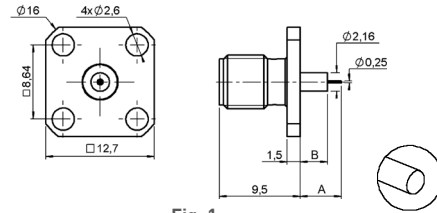
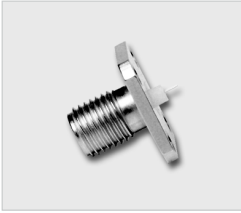


Fig. 1

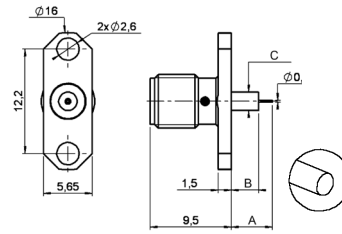


Fig. 2

| Part number<br>(Gold) | Part number<br>(Passivated) | Fig. | Dimensions (mm) |     |      | Captive center<br>contact | Panel drilling | Note          | Captivation |
|-----------------------|-----------------------------|------|-----------------|-----|------|---------------------------|----------------|---------------|-------------|
|                       |                             |      | A               | B   | C    |                           |                |               |             |
| R125 512 000          | R125 512 001                | 1    | 4.8             | 3.2 |      | yes                       | P04            | Square flange | 4 indents   |
| R125 513 000          |                             |      | 3.2             | 1.6 |      |                           |                |               |             |
| R125 462 000          | R125 462 001                | 2    | 4.8             | 3.2 | 2.16 |                           | P01            | 2 hole flange | Epoxy       |
| R125 463 000          |                             |      | 3.2             | 1.6 | 2.16 |                           |                |               |             |
|                       | R125 617 001                |      | 4.8             | 3.2 | 4.06 |                           |                |               |             |

## STRAIGHT MALE FLANGE RECEPTACLES - CYLINDRICAL CONTACT

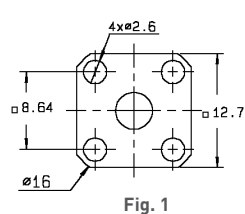


Fig. 1

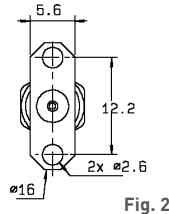
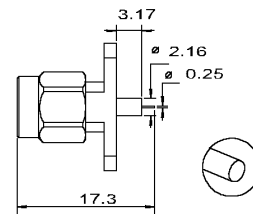


Fig. 2



| Part number<br>(Gold) | Part number<br>(Passivated) | Fig. | Captive center contact | Panel drilling | Note          |
|-----------------------|-----------------------------|------|------------------------|----------------|---------------|
| R125 492 000          | R125 492 001                | 1    | yes (epoxy)            | P04            | Square flange |
| R125 484 000          | R125 484 001                | 2    |                        | P01            | 2 hole flange |

## Receptacles for microstrip

### UNIVERSAL FIELD-REPLACEABLE RECEPTACLES - FEMALE SOCKET (accept pin 0.93 mm [.037"])

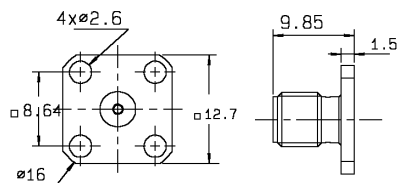
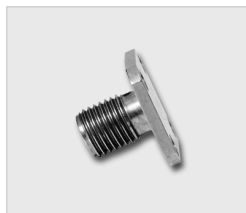


Fig. 1

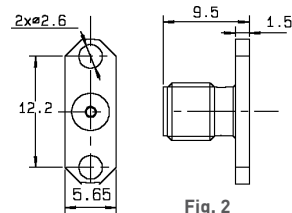


Fig. 2

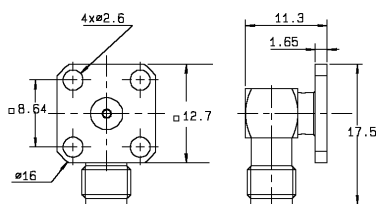


Fig. 3

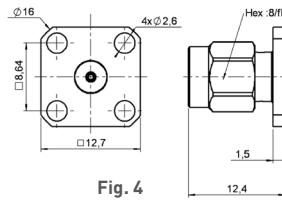


Fig. 4

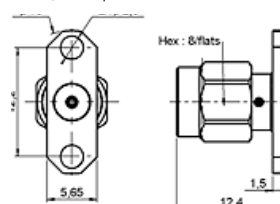


Fig. 5

| Part number (Gold) | Part number (Passivated) | Fig. | Captive center contact | Panel drilling | Note                                  |
|--------------------|--------------------------|------|------------------------|----------------|---------------------------------------|
| R125 410 000       | R125 410 001             | 1    | yes (epoxy)            | P04            | female-square flange                  |
|                    | R125 430 001             | 4    |                        | P04            | male-square flange                    |
| R125 460 000       | R125 460 001             | 2    |                        | P01            | female-2 hole flange - Unit packaging |
|                    | R125 480 001             | 5    |                        | P01            | male-2 hole flange                    |
|                    | R125 670 001             | 3    |                        | P04            | female-right angle square flange      |

### EDGE CARD RECEPTACLES

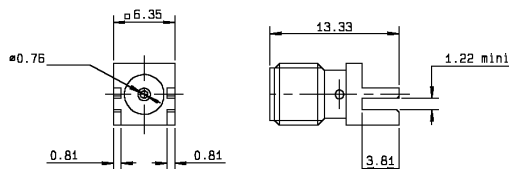
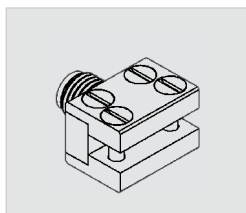


Fig. 1

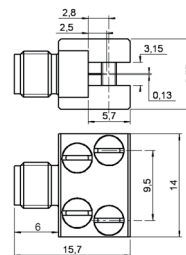
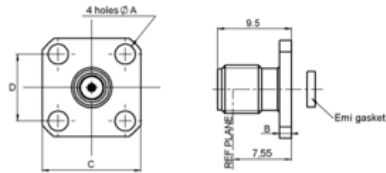
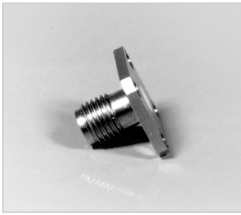


Fig. 2

| Part number (Gold) | Part number (Passivated) | Fig. | Captive center contact | Note        | Captivation |
|--------------------|--------------------------|------|------------------------|-------------|-------------|
| R125 423 200       |                          | 1    | yes                    | Solder pins | 4 indents   |
| R125 541 000       | R125 541 001             | 2    |                        | 4 screws    | Epoxy       |

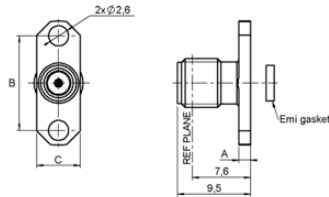
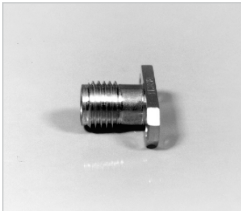
## Hermetic receptacles with separate glass bead

## SQUARE FLANGE 12.7 mm FEMALE RECEPTACLE



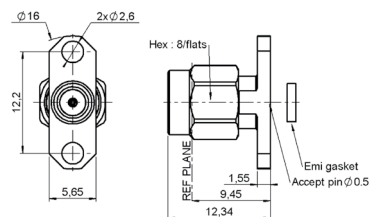
| Part number<br>(Gold) | Part number<br>(Passivated) | Glass bead<br>only | Dimensions (mm) |     |      |     | EMI gasket<br>only | Panel drilling<br>connector | Panel drilling<br>glass bead | Note              |
|-----------------------|-----------------------------|--------------------|-----------------|-----|------|-----|--------------------|-----------------------------|------------------------------|-------------------|
|                       |                             |                    | A               | B   | C    | D   |                    |                             |                              |                   |
| R125 411 000          | R125 411 001                | R280 751 000       | 2.6             | 1.5 | 12.7 | 8.6 | R280 510 000       | P10                         | P13                          | Diameter pin=0.30 |
| 9074-9513-000         |                             |                    | 1.7             | 1.6 | 9.5  | 6.3 |                    |                             |                              | Diameter pin=0.45 |
| 9079-9513-000         |                             |                    |                 |     |      |     |                    |                             |                              | Diameter pin=0.30 |
| 9079-9513-001         |                             |                    |                 |     |      |     |                    |                             |                              | Diameter pin=0.38 |

## NARROW FLANGE FEMALE RECEPTACLES



| Part number<br>(Gold plated) | Part number<br>(Passivated) | Glass bead<br>only | Dimensions (mm) |      |            | EMI gasket<br>only | Panel drilling<br>connector | Panel drilling<br>glass bead | Note                   |
|------------------------------|-----------------------------|--------------------|-----------------|------|------------|--------------------|-----------------------------|------------------------------|------------------------|
|                              |                             |                    | A               | B    | C          |                    |                             |                              |                        |
| R125 465 000                 | R125 465 001                | R280 751 000       | 1.5             | 12.2 | 5.6        | R280 510 000       | P12                         | P13                          |                        |
| R125 465 010                 | R125 465 011                | R280 757 070       |                 |      |            |                    |                             | P18                          |                        |
|                              | 9080-9513-000               | 920-55             | 1.6             | 10.2 | 4.7        | No EMI<br>gasket   |                             |                              | Diameter Pin<br>= 0.30 |
|                              | 9180-9513-000               | 920-55 (included)  |                 |      |            |                    |                             |                              |                        |
|                              | 9180-9513-001               | 920-82 (included)  |                 |      |            |                    |                             |                              | Diameter Pin<br>= 0.38 |
|                              | 9144-9513-000               | 920-55 (included)  | 12.2            | 5.7  | Contact Us | P12                |                             |                              |                        |

## NARROW FLANGE MALE RECEPTACLES



| Part number (Passivated) | Glass bead only | EMI gasket only | Panel drilling connector | Panel drilling glass bead |
|--------------------------|-----------------|-----------------|--------------------------|---------------------------|
| R125 481 001             | R280 751 000    | R280 510 000    | P12                      | P13                       |
| R125 481 011             | R280 757 070    |                 |                          | P18                       |
| 9050-9513-000            | 920-56          | Contact Us      |                          |                           |



## Hermetic receptacles with integrated glass bead

## SCREW-ON TYPE FEMALE RECEPTACLES

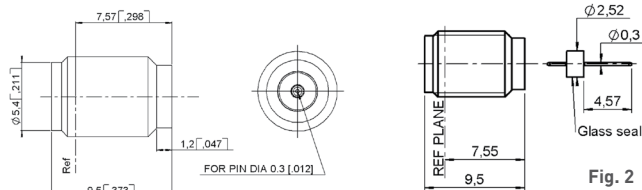
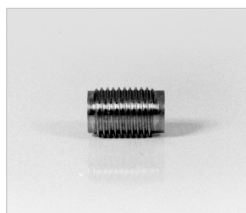
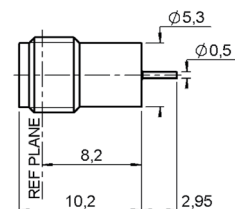


Fig. 1

| Part number (Passivated) | Glass bead only | Fig. | Assembly tool | Panel drilling glass bead | Note                     |
|--------------------------|-----------------|------|---------------|---------------------------|--------------------------|
| R125 556 001             | R280 751 000    | 1    | R282 341 010  | P15                       | For pin dia 0.3/0.12     |
| R125 556 011             | R280 755 000    |      |               | P19                       | For pin dia 0.5/0.19     |
| R125 638 001             | R280 751 350    | 2    |               | P15                       | Supplied with glass bead |

## SOLDER TYPE FEMALE RECEPTACLE

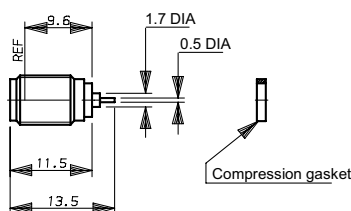
Panel feedthrough receptacles feature an internal hermetic glass bead. A ring of solder between the receptacle body and the package will provide the hermeticity level.



| Part number (Gold) | Connector body  | Panel drilling | Contact type |
|--------------------|-----------------|----------------|--------------|
| R125 630 000       | FN42 alloy      |                | Cylindrical  |
| R125 630 040       | Stainless steel |                |              |

## SCREW-ON TYPE FEMALE RECEPTACLE

Screw-on receptacles with integrated glass seal - the compression gasket will ensure the hermeticity between the receptacle and the package.



| Part number (Gold) | Part number (Passivated) | Connector body  | Panel drilling | Contact type |
|--------------------|--------------------------|-----------------|----------------|--------------|
| R125 609 000       | R125 609 001             | Stainless steel | P05            | Cylindrical  |

## SCREW-ON TYPE FEMALE RECEPTACLE WITH SLIDING CONTACT

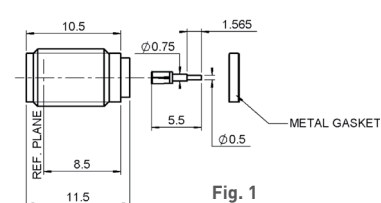
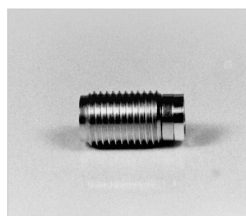


Fig. 1

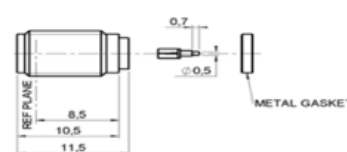
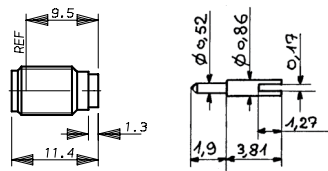
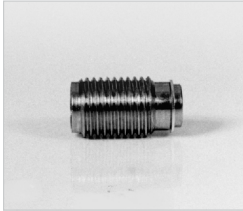


Fig. 2

| Part number (Passivated) | Fig. | Connector body  | Panel drilling | Contact type |
|--------------------------|------|-----------------|----------------|--------------|
| R125 609 031             | 1    | Stainless steel | P05            | Cylindrical  |
| R125 609 011             | 2    |                 |                |              |

**Hermetic receptacles without glass bead****SCREW-ON TYPE FEMALE RECEPTACLE WITH SLIDING CONTACT**

Screw-on receptacles without glass bead provide a lower hermeticity level ( $10^{-6}$  atm/cm<sup>3</sup>/sec). A gasket is provided to guarantee the hermeticity between the receptacle and the package.



| Part number (Gold) | Part number (Passivated) | Panel drilling | Contact type |
|--------------------|--------------------------|----------------|--------------|
| R125 605 300       | R125 605 301             | P08            | Slotted      |

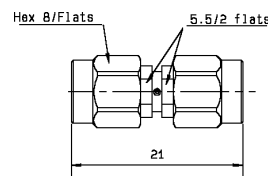
**Adapters****IN SERIES ADAPTERS**

Fig. 1

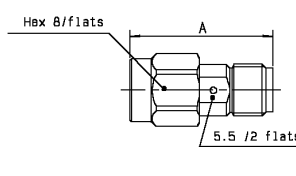


Fig. 2

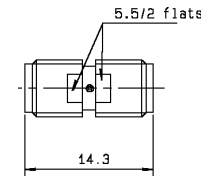


Fig. 3

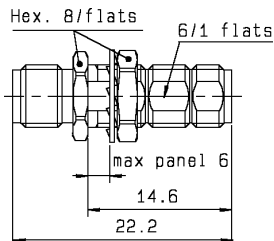


Fig. 4

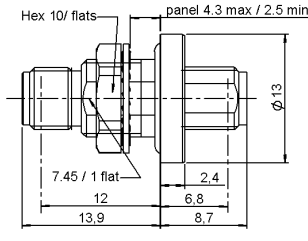


Fig. 5

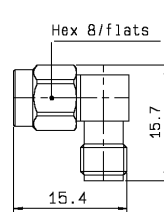


Fig. 6

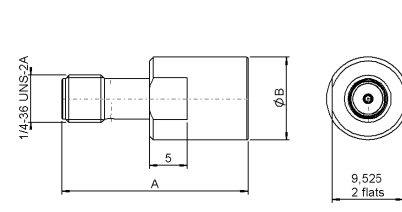


Fig. 7

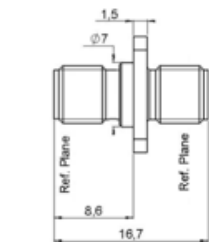


Fig. 8

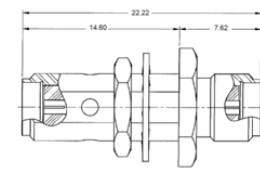


Fig. 9

| Part number (Gold) | Part number (Passivated) | Fig. | Dimensions (mm) |     | Captive center contact | Panel drilling | Note                                       |
|--------------------|--------------------------|------|-----------------|-----|------------------------|----------------|--------------------------------------------|
| A                  | B                        |      |                 |     |                        |                |                                            |
| R125 703 000       | R125 703 001             | 1    |                 |     |                        |                | male-male                                  |
| R125 704 000       | R125 704 001             | 2    | 17.5            |     | yes (4 indents)        |                | male-female                                |
| R125 705 000       | R125 705 001             | 3    |                 |     |                        |                | female-female                              |
| R125 720 000       | R125 720 001             | 4    |                 |     | yes (epoxy)            | P06            | Bulkhead female-female                     |
| R125 753 000       | R125 753 001             | 5    |                 |     | yes                    | P08            | Bulkhead hermetically sealed female-female |
| R125 771 000       | R125 771 001             | 6    |                 |     |                        |                | Right angle male-female                    |
|                    | R125 791 501             | 7    | 23.3            | 8.9 | yes (epoxy)            |                | PUSH-ON male                               |
|                    | R125 792 501             | 7    | 24.8            | 11  |                        | P07            | PUSH-ON female                             |
|                    | R125 710 021             | 8    |                 |     |                        | P06            | female-female square flange adapter        |
| 5909-1103-000      | 5909-9103-000            | 9    |                 |     |                        |                | bulkhead female-female                     |
| 5916-1103-603      | 5916-9103-603            | 2    | 17.4            |     |                        |                | male-female                                |
| 5917-1103-000      | 5917-9103-000            | 3    |                 |     |                        |                | female-female                              |
| 5918-1103-000      | 5918-9103-000            | 1    |                 |     | yes (4 indents)        |                | male-male                                  |
| 5919-1503-000      | 5919-9503-000            |      |                 |     |                        |                | male-female / right angle                  |
| 5919-1503-001      | 5919-9503-001            | 6    |                 |     |                        |                | male-male / right angle                    |
| 5919-1503-003      | 5919-9503-003            |      |                 |     |                        |                | male-male / right angle                    |

## Adapters

### TEE IN SERIES ADAPTERS

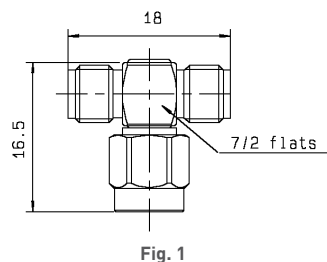


Fig. 1

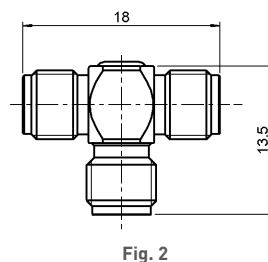


Fig. 2

| Part number (Gold) | Part number (Passivated) | Fig. | Type  | Captive center contact |
|--------------------|--------------------------|------|-------|------------------------|
| R125 780 000       | R125 780 001             | 1    | M/F-F | yes                    |
| R125 781 000       | R125 781 001             | 2    | F/F-F |                        |

## Accessories

### MALE AND FEMALE CAPS

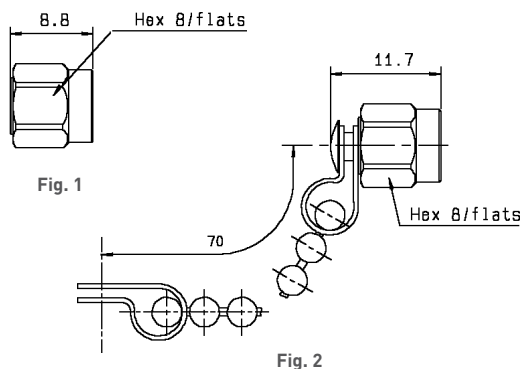


Fig. 1

Fig. 2

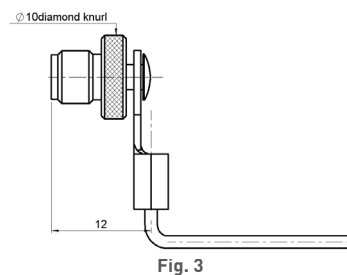


Fig. 3

| Part number (Gold) | Part number (Passivated) | Fig. | Note               |
|--------------------|--------------------------|------|--------------------|
| R125 802 000       | R125 802 001             | 1    | male               |
| R125 812 000       | R125 812 001             | 2    | male with chain    |
| R125 852 000       | R125 852 001             | 1    | male short circuit |
| R125 845 000       | R125 845 001             | 3    | female with cord   |

### CENTER CONTACTS (To be used with universal receptacle)

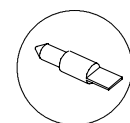
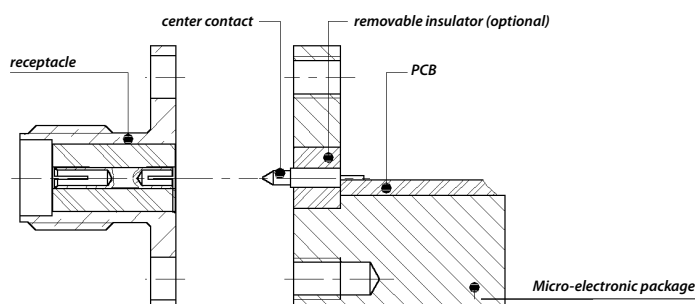
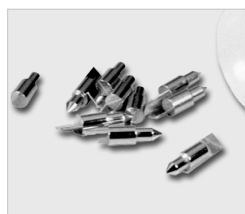


Fig. 1

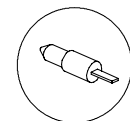


Fig. 2

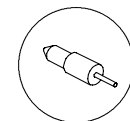
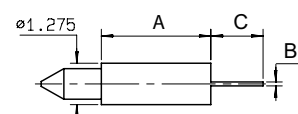


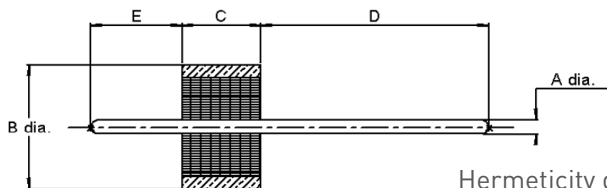
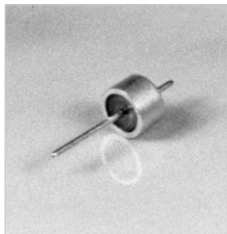
Fig. 3

| Part number  | Fig. | Termination | Dimensions (mm) |              |      | Packaging |
|--------------|------|-------------|-----------------|--------------|------|-----------|
|              |      |             | A               | B            | C    |           |
| R280 461 000 | 1    | Tab         | 3.37            | 0.13         | 1.6  | 10 pieces |
| R280 461 200 | 2    | Tab special | 3.37            | 0.13 x W0.51 | 1.6  |           |
| R280 461 210 | 1    | Tab         | 10.3            | 0.13         | 1.6  |           |
| R280 462 000 | 3    | Cylindrical | 1.77            | dia 0.25     | 1.57 |           |
| R280 463 000 | 3    | Cylindrical | 3.37            | dia 0.25     | 1.57 |           |
| R280 465 000 | 2    | Tab special | 0.2             | 0.13 x W0.60 | 0.9  |           |



Glass beads

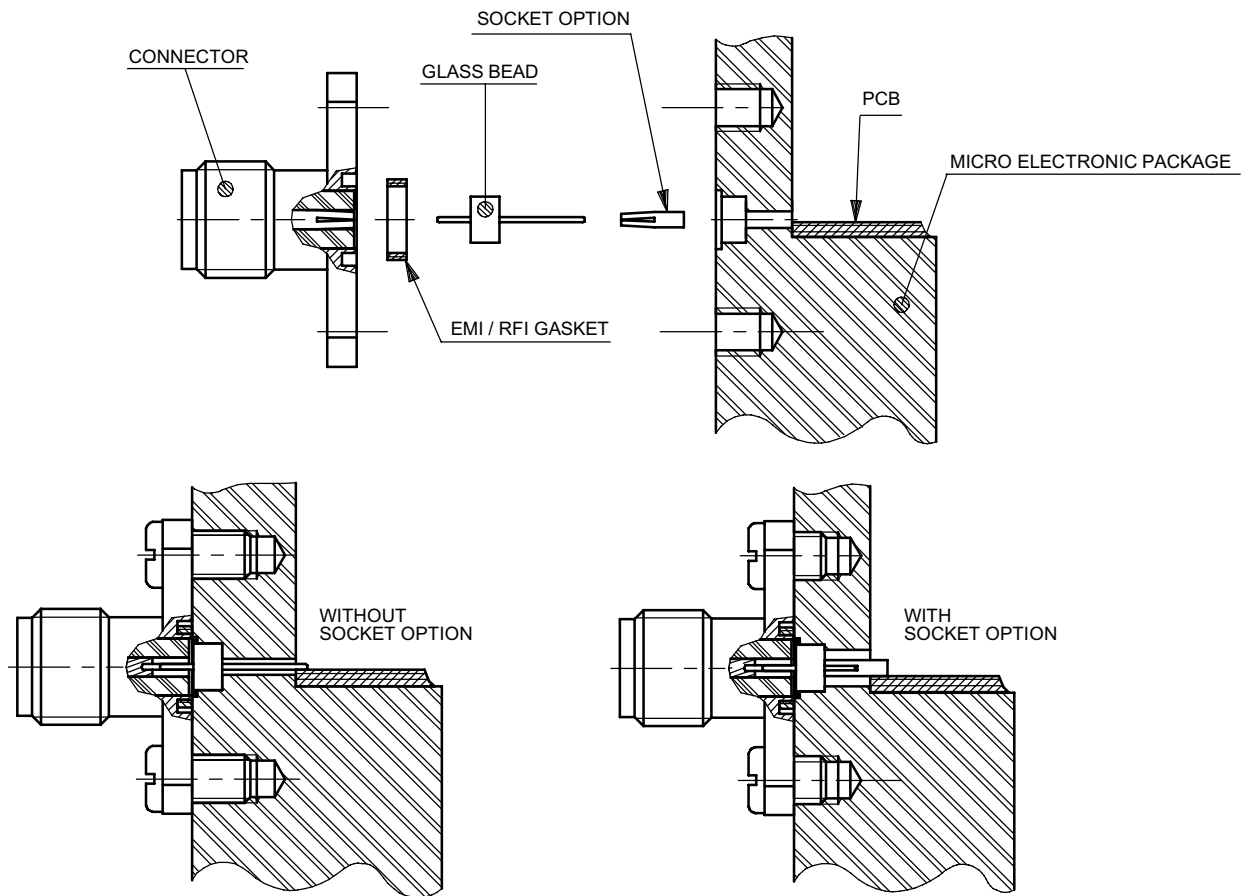
GLASS BEADS FOR HERMETIC RECEPTACLES



Hermeticity guaranteed at  $10^{-8}$  atm.cm<sup>3</sup>/s

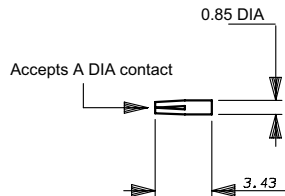
| Part number  | Dimensions mm (inch) |             |             |             |             | Packaging |
|--------------|----------------------|-------------|-------------|-------------|-------------|-----------|
|              | A                    | B           | C           | D           | E           |           |
| R280 751 000 | 0.30 [.012]          | 2.52 [.099] | 1.60 [.063] | 4.57 [.180] | 1.83 [.072] | 1         |
| R280 751 080 |                      |             |             | 1.3 [.051]  |             | 100       |
| R280 751 350 |                      |             |             | 4.57 [.180] |             | 1         |
| R280 752 000 | 0.38 [.015]          | 2.50 [.098] | 156 [.061]  | 1.95 [.076] | 1.59 [.062] | 100       |
| R280 752 020 |                      |             |             | 1.3 [.051]  |             |           |
| R280 755 000 | 0.46 [.018]          | 2.85 [.112] | 1.60 [.063] |             |             | 1         |
| R280 755 040 |                      | 2.85 [.111] |             | 4.57 [.180] | 1.83 [.072] |           |
| R280 757 070 | 0.50 [.019]          | 4 [.157]    | 1.77 [.070] | 1.78 [.070] | 2.03 [.080] | 100       |
| R280 757 080 |                      |             |             | 5.82 [.230] | 1.93 [.076] | 1         |

Go to page 17-18 for more glass beads.



## Accessories for hermetic microstrip receptacles

### OPTIONAL SOCKET



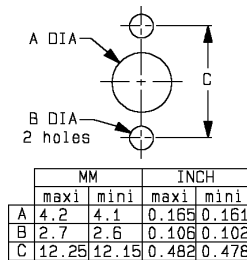
| Part number  | A Dia (mm) | Packaging |
|--------------|------------|-----------|
| R280 469 000 | 0.30       | 10 pieces |
| R280 469 010 | 0.46       |           |

Go to chapter 19-A for more socket contact options.

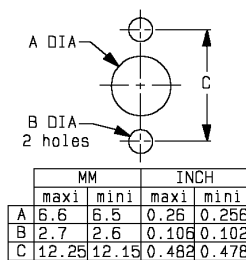
For use with glass seal.

### Panel drilling

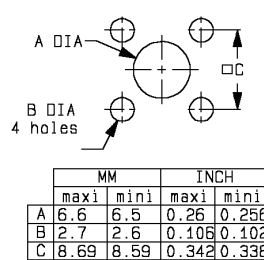
#### P01



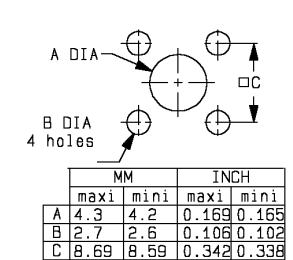
#### P02



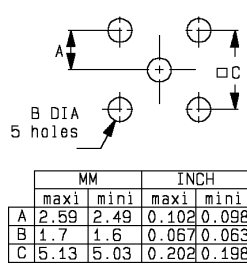
#### P03



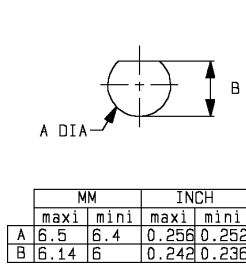
#### P04



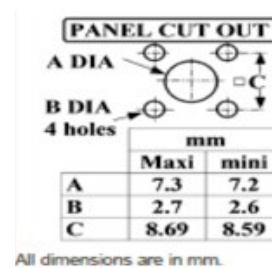
#### P05



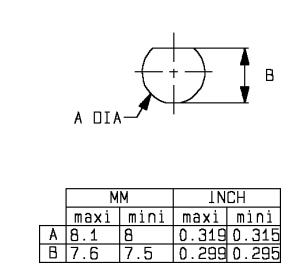
#### P06



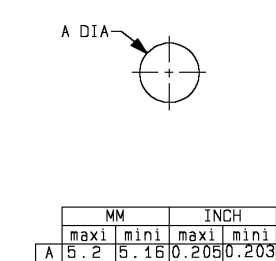
#### P07



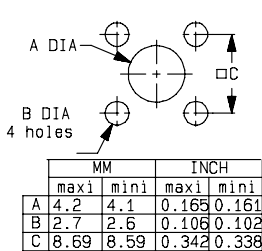
#### P08



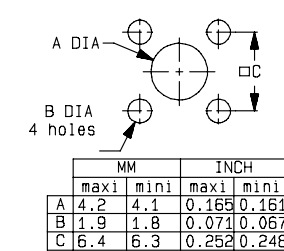
#### P09



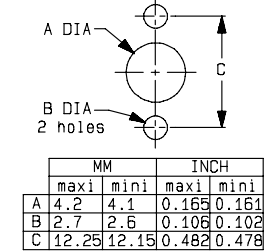
#### P10



#### P11



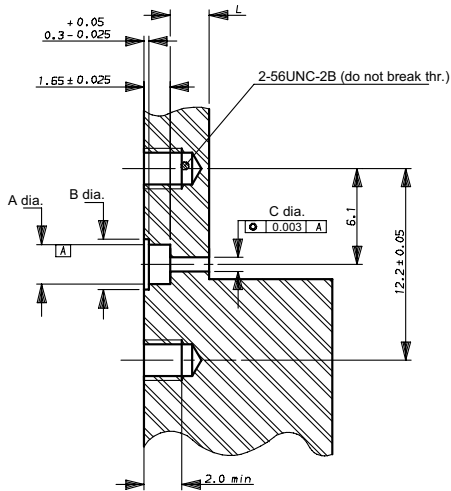
#### P12



## Panel drilling

## HERMETIC SEPARATE GLASS BEAD RECEPTACLES

## P13/14

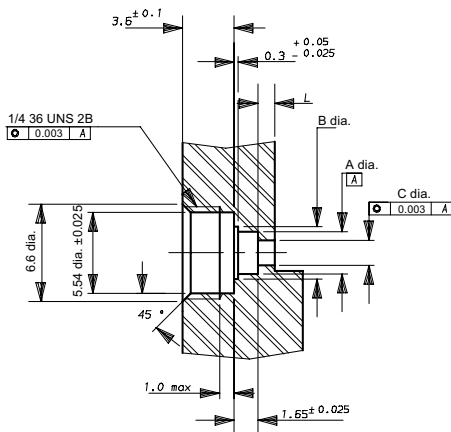


|            | P13               | P14              |
|------------|-------------------|------------------|
| A dia.     | $2.6 \pm 0.025$   | $2.92 \pm 0.025$ |
| B dia.     | $3.23 \pm 0.025$  | $3.55 \pm 0.025$ |
| C dia. (1) | $2 \pm 0.02$      |                  |
| (2)        | $0.7 \pm 0.02$    | $1.08 \pm 0.02$  |
| L dia. (1) | $2.5 \pm 0.1$     |                  |
| (2)        | from 1 mm to 4 mm |                  |

(1) Using of the removable contact.

(2) The pin is directly welded on the trace.

## P15/16

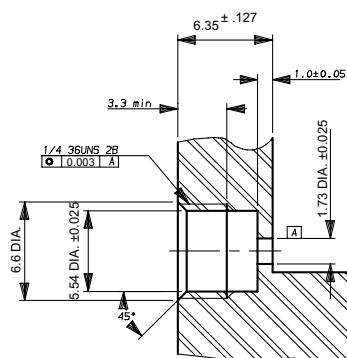


|            | P15               | P16              |
|------------|-------------------|------------------|
| A dia.     | $2.6 \pm 0.025$   | $2.92 \pm 0.025$ |
| B dia.     | $3.23 \pm 0.025$  | $3.55 \pm 0.025$ |
| C dia. (1) | $2 \pm 0.02$      |                  |
| (2)        | $0.7 \pm 0.02$    | $1.08 \pm 0.02$  |
| L dia. (1) | $2.5 \pm 0.1$     |                  |
| (2)        | from 1 mm to 4 mm |                  |

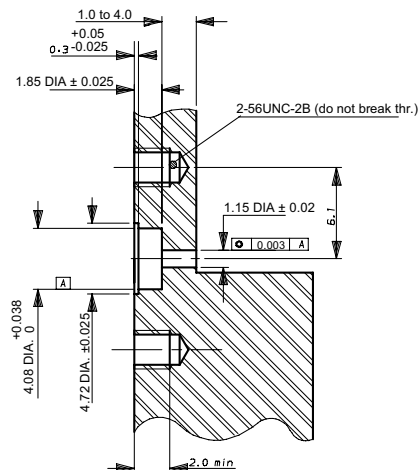
(1) Using of the removable contact.

(2) The pin is directly welded on the trace.

## P17

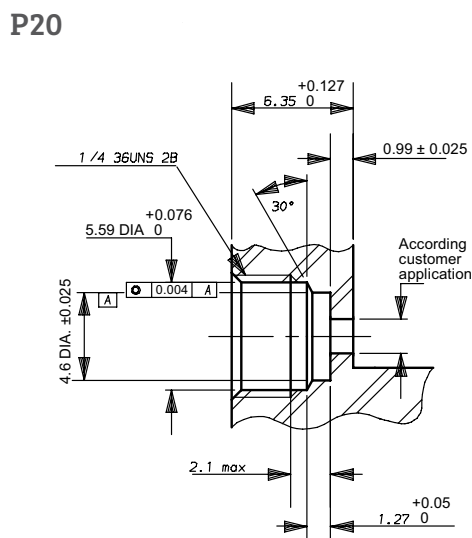
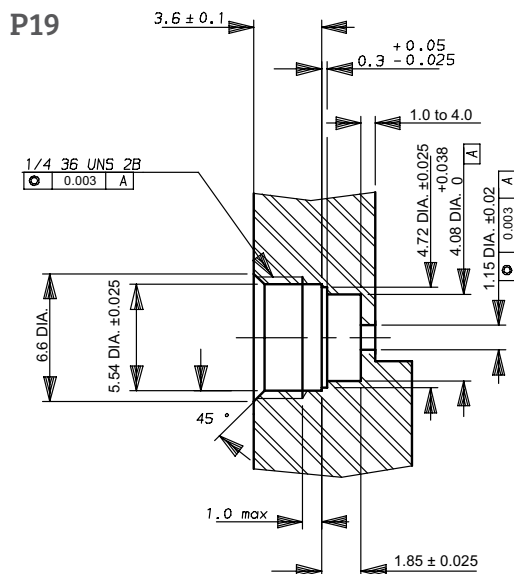


## P18

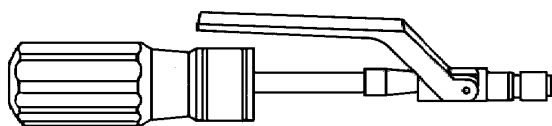


## Panel drilling

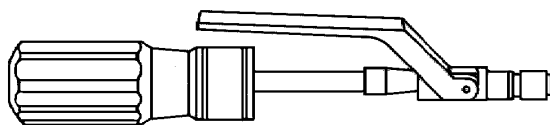
### HERMETIC SEPARATE GLASS BEAD RECEPTACLES



### Tooling for hermetic receptacles



Coupling torque: 190 cm N



Coupling torque: 280 cm N

| Part number  | Description                                                                                            |
|--------------|--------------------------------------------------------------------------------------------------------|
| R282 341 010 | Installation tool for jack receptacles<br>R125 556 000<br>R125 556 001<br>R125 556 010<br>R125 556 011 |

| Part number  | Description                                                                                                                                                                            |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R282 341 012 | Installation tool for jack receptacles<br>R125 605 361<br>R125 605 371<br>R125 605 401<br>R125 609 000<br>R125 609 001<br>R125 609 010<br>R125 609 011<br>R125 609 070<br>R125 609 071 |

## Field replaceable hermetic microstrip receptacle information

## ELECTRICAL PERFORMANCES

## V.S.W.R. to 18 GHz

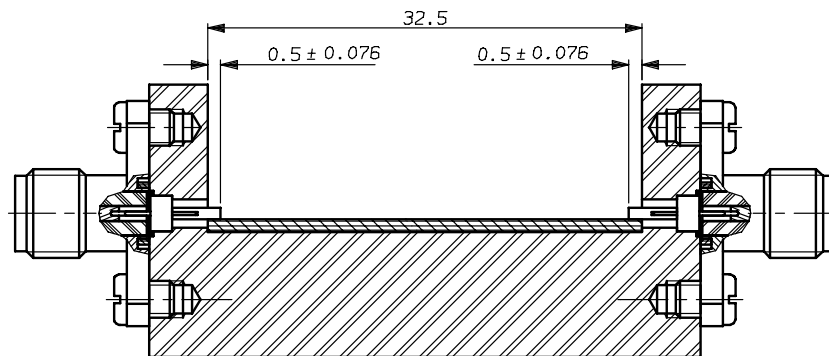
| Connector only        | Seal only             | Connector & seal     |
|-----------------------|-----------------------|----------------------|
| $1.04 + 0.006F$ (GHz) | $1.02 + 0.003F$ (GHz) | $1.06 + 0.01F$ (GHz) |

## V.S.W.R. MEASUREMENT

## Setting for V.S.W.R. measurement on field replaceable hermetic receptacle

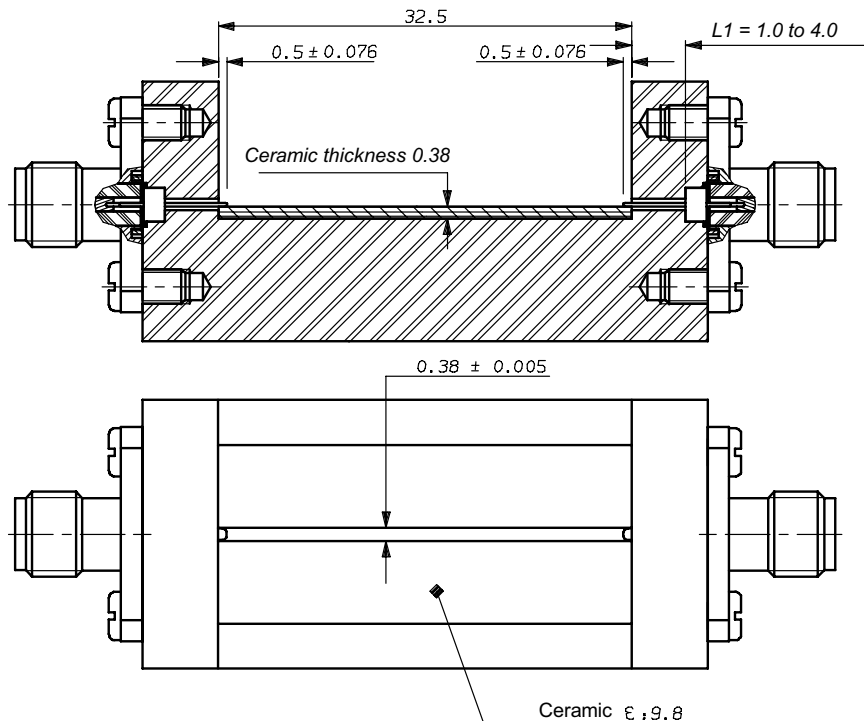
## a) Measurement with auxiliary contact-assembly drawing

**R280 469 000** (for pin DIA 0.30 mm)  
**R280 469 010** (for pin DIA 0.46 mm)



## b) Measurement without auxiliary contact-assembly drawing

Recommended value :  $L1 = 1.0$  mm

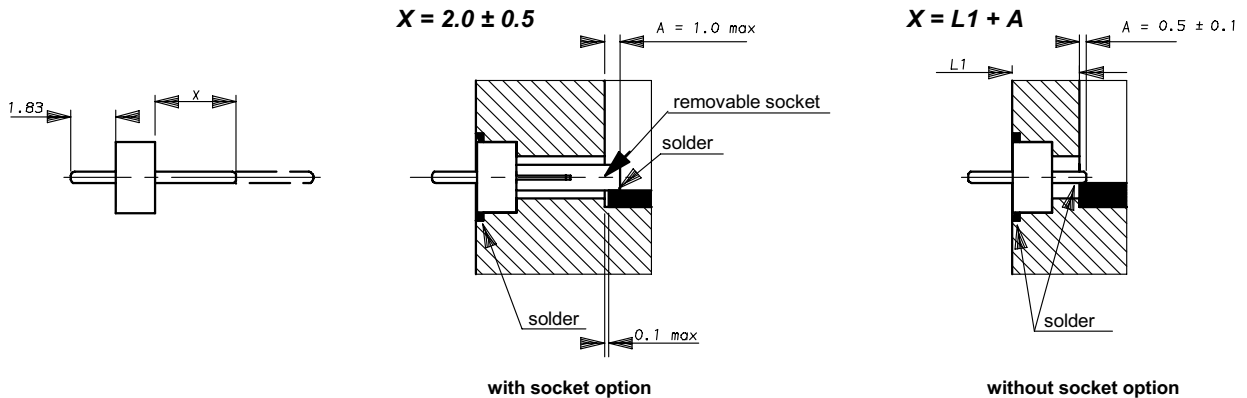


The track width on ceramic defines the circuit impedance.



## Field replaceable hermetic microstrip receptacle information

### GLASS BEAD AND CONNECTOR ASSEMBLY INTO THE MICRO ELECTRONIC PACKAGE



#### GLASS BEAD

1. Adjust X by cutting the pin if necessary
2. Introduce the glass bead into its cavity
3. Place a ring of solder in the groove around the glass bead (a 0.3 mm wire dia. of solder is recommended)
4. Solder the pin (or optional socket) on the PCB trace inside the package

Note: there is not too much welding.

**IMPORTANT:** For maximum RF performances, the link track/pin must be as thin as possible.

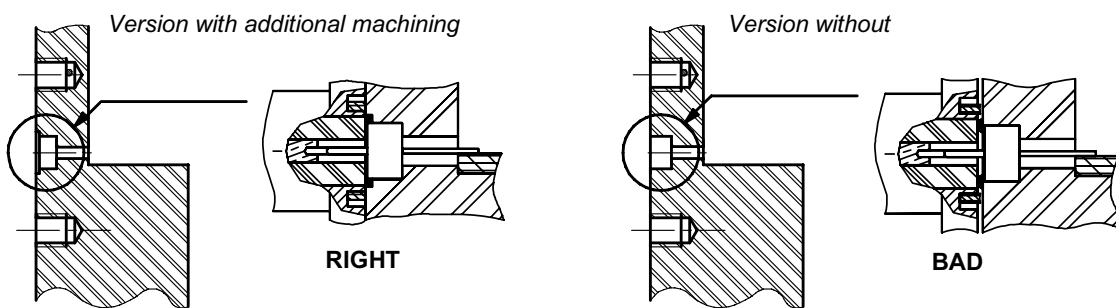
Therefore, we advise to follow the A dimension rigorously, by soldering accurately the pin or the socket directly on the trace.

#### CONNECTOR RECEPTACLE

Place the "EMI" screening gasket in the groove of the receptacle (if applicable).

Introduce gently the receptacle on the glass bead pin, then screw the flange (use the appropriated tool for screw-in receptacle).

#### GLASS BEAD MOUNTING



The Radiall panel drilling on page 8-27 recommends an additional bore or chamfer machining on the outer edge of the glass bead housing. This additional machining allows to place a pre-form (solder stick Dia. 0.3 mm) before soldering.

After mounting, solder is flushing and allows the right positioning of the receptacle.

The EMI gasket efficiency is guaranteed.

## Introduction

Radiall Commercial SMA connectors are specially designed for applications where low installed costs are of the most importance. They are easy, fast to assemble and reliable, and offer the perfect solution for high volume applications requiring high level performance such as in civil telecommunications, data communications or test and measurement.

- **Full compatibility:**

Commercial SMA connectors are fully compatible (interchangeable and intermateable) with all existing MIL standardized SMA connectors. They feature the same performance level except for mechanical characteristics (life: 100 matings and coupling nut torque: 60 Ncm).

The coupling nut of Commercial SMA connectors features a special design which is different from the standard SMA coupling nut as the tightening torque is reduced.

- **Wide range:**

The Commercial SMA series offers a wide range of solutions which are for every standard coaxial flexible or semi-rigid cable as well as PCB models with traditional through-hole pins or solder pads for SMT applications.

- **Simple snap-in axial captivation (for full crimp models):**

The relative position of the center contact into the interface is mechanically guaranteed by the snapping of the insulator inner shoulder into the groove of the center contact.

This design facilitates the captivation operation in contrast to other designs, requiring two insulators to provide contact retention.

It assures constant and perfect axial positioning of the center contact into the interface.

- **Space-saving size:**

Due to the captivation technique, these commercial SMA connectors are shorter than multi-piece body connectors.

- **Convenient 3-piece design:**

- For straight models: body + center contact + outer ferrule
- For right angle models: single piece body + back cap + outer ferrule

- **Fast and reliable cable attachment:**

The cable connectors can be either fully crimped or soldered/crimped, offering full flexibility for high volume industrial production with standard manual or pneumatic tooling: fast and reliable

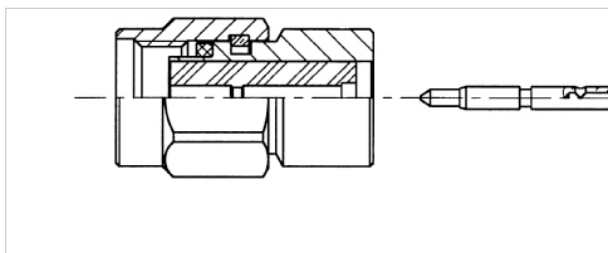
- The center contact can be either crimped or soldered
- The outer contact is attached to the cable by crimping a ferrule

- **Competitive pricing:**

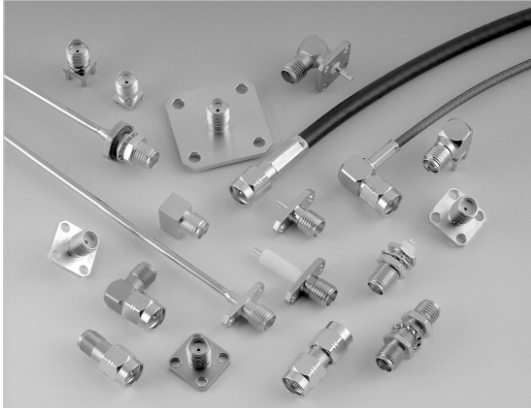
The design and materials used in the manufacturing of the Commercial SMA series allow us to offer connectors at competitive prices to suit a wide range of applications. The connector body is manufactured in brass and the surface plating is available in either gold or in BBR finish (Radiall non-magnetic bright bronze surface finish).

- **Center contact captivation:**

Our connectors have a captive center contact.



## Introduction



50Ω

DC - 18 GHz

### GENERAL

- Subminiature coaxial connectors
- Screw-on coupling
- High RF performance
- 2 plating options:
  - BBR
  - Gold

### APPLICABLE STANDARDS

- MIL-C-39012
- IEC 169-1
- CECC 22110
- CECC 22111 - 801 to 808
- BS 9210 N006

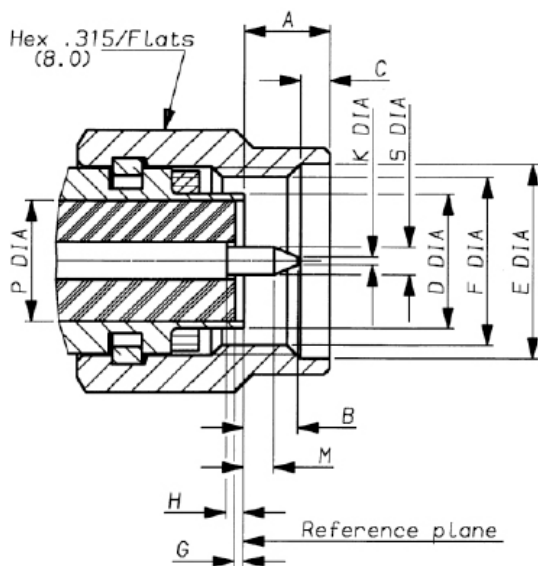
### APPLICATIONS

- Telecommunications
- Aeronautics
- Measurement and Test systems
- General electronics

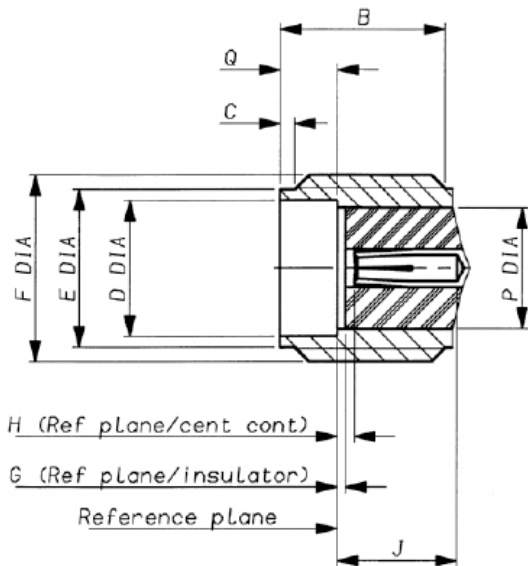
Interface

SMA-COM

PLUG



JACK



| Letter | mm            |       | inch      |       |
|--------|---------------|-------|-----------|-------|
|        | min.          | max.  | min.      | max.  |
| A      |               | 3.43  |           | .135  |
| B      |               | 2.54  |           | .100  |
| C      | 0.38          | 1.14  | .015      | .045  |
| D DIA  |               | 4.59  |           |       |
| E DIA  | 6.35          |       | .250      |       |
| F DIA  | 1/4 36 UNS 2B |       |           |       |
| G*     | 0.0           | -0.20 | 0.0       | -.008 |
| H*     | 0.0           | -0.25 | 0.0       | -.010 |
| J      |               |       |           |       |
| K DIA  |               | 0.38  |           | .015  |
| M      | 1.27          |       | .050      |       |
| P DIA  | 4.10 nom.     |       | .161 nom. |       |
| Q DIA  |               |       |           |       |
| S DIA  | 0.90          | 0.94  | .035      | .037  |

| Letter | mm            |       | inch      |       |
|--------|---------------|-------|-----------|-------|
|        | min.          | max.  | min.      | max.  |
| A      |               |       |           |       |
| B      | 4.31          |       | .170      |       |
| C      | 0.38          | 1.14  | .015      | .045  |
| D DIA  | 4.596         |       | .181      |       |
| E DIA  | 5.28          | 5.49  | .208      | .216  |
| F DIA  | 1/4 36 UNS 2A |       |           |       |
| G*     | 0.0           | -0.20 | 0.0       | -.008 |
| H*     | 0.0           | -0.25 | 0.0       | -.010 |
| J      | 2.92          |       | .115      |       |
| K      |               |       |           |       |
| M      |               |       |           |       |
| P DIA  | 4.10 nom.     |       | .161 nom. |       |
| Q      | 1.88          | 1.98  | .074      | .078  |
| S DIA  |               |       |           |       |

**\*Note:**  
Means behind ref plane

## Characteristics

| Test / Characteristics | MIL-C-39012 paragraph | Values / Remarks |
|------------------------|-----------------------|------------------|
|------------------------|-----------------------|------------------|

## GENERAL

|                   |  |                                  |
|-------------------|--|----------------------------------|
| Impedance         |  | 50Ω                              |
| Frequency range   |  | Semi-rigid cables<br>DC - 18 GHz |
| Temperature range |  | - 65°C + 105°C                   |

## ELECTRICAL CHARACTERISTICS

|                                                                                                                              |      |                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------|
| Insulation resistance                                                                                                        | 3-11 | 5000 MΩ mini.                                                                                   |
| Contact resistance<br>• Outer conductor<br>• Inner conductor                                                                 | 3-16 | Initial<br>3 mΩ<br>2 mΩ                                                                         |
| V.S.W.R. max up to:<br>18 GHz for semi-rigid cable<br>12.4 GHz for right angle connector (SR)<br>12.4 GHz for flexible cable | 3-14 | .085" .141" 2.6/50/S 5/50/D                                                                     |
| • Straight Connector<br>• Right angle connector                                                                              |      | 1.07 + .01F 1.10 + .01F 1.05 + .01F 1.10 + .01F 1.15 + .02F 1.15 + .03F 1.15 + .01F 1.15 + .02F |
| Dielectric withstanding voltage in VRMS                                                                                      | 3-17 | 750 1000 750 1000                                                                               |
| Working voltage in VRMS (sea level)                                                                                          |      | 335 500 250 335                                                                                 |
| Working voltage in VRMS (70 000 ft)                                                                                          |      | 85 125 65 85                                                                                    |
| RF testing voltage at 5 MHz in VRMS                                                                                          | 3-23 | 500 670 500 670                                                                                 |

## MECHANICAL CHARACTERISTICS

|                                 |       |                             |
|---------------------------------|-------|-----------------------------|
| Cable retention force           | 3-24  | .085" .141" 2.6/50/S 5/50/D |
|                                 |       | 130 N 270 N 90 N 204 N      |
| Life                            | 3-15  | 100 matings                 |
| Force to engage and disengage   | 3-5-1 | 23 Ncm - 2 inch pounds      |
| Coupling nut torque recommended |       | 60 Ncm - 5.2 inch pounds    |
| Coupling nut retention force    | 3-25  | 272 N min                   |

## ENVIRONMENTAL CHARACTERISTICS

|                            |      |                                                                                               |
|----------------------------|------|-----------------------------------------------------------------------------------------------|
| Vibration                  | 3-18 | MIL STD 202, method 204, condition D,20g                                                      |
| Shock                      | 3-19 | MIL STD 202, method 213, condition 1,100g                                                     |
| Thermal shock              | 3-20 | MIL STD 202, method 107, condition B,                                                         |
| Corrosion (salt spray)     | 3-13 | MIL STD 202, method 101, condition B,                                                         |
| Moisture resistance        | 3-21 | MIL STD 202, method 106                                                                       |
| Barometric pressure        | 3-22 | MIL STD 202, method 105, condition C                                                          |
| Hermetic test              |      | Down to 10 <sup>-6</sup> mmHg (Torr) leakage rate < 10 <sup>-8</sup> atm/cm <sup>3</sup> /sec |
| Life (at high temperature) |      | MIL STD 202, method 108                                                                       |

## MATERIALS AND PLATING

|                 | Material                                  | Plating             |
|-----------------|-------------------------------------------|---------------------|
| Bodies          | Brass                                     | BBR* or Gold plated |
| Center contacts | Beryllium copper (female)<br>Brass (male) | Gold plated         |
| Insulators      | PTFE teflon                               |                     |
| Gaskets         | Silicone rubber                           |                     |

\*BBR: Bright Bronze Radiall

All dimensions are given in mm.

Standard packaging: 100 pieces

Plugs

STRAIGHT PLUGS, FULL CRIMP TYPE FOR FLEXIBLE CABLE

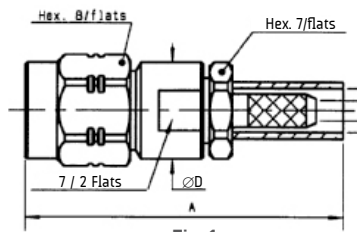


Fig. 1

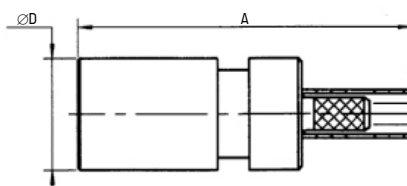


Fig. 2

| Cable group           | Cable group dia. | Part number (Gold) | Part number (BBR) | Fig. | Dimensions (mm) |      | Captive center contact | Note                      |
|-----------------------|------------------|--------------------|-------------------|------|-----------------|------|------------------------|---------------------------|
|                       |                  |                    |                   |      | A               | D    |                        |                           |
| RG178 / RG196         | 2/50/S           | R124 069 123       | R124 069 120      | 1    | 25              | 7.7  | yes                    | Back nut / Solder contact |
| RG174 / RG316         | 2.6/50/S         | R124 071 123       | R124 071 120      | 2    | 23.4            |      |                        |                           |
| RD316                 | 2.6/50/D         |                    | R124 072 220      |      |                 |      |                        |                           |
| RG58 / RG141          | 5/50/S           | R124 075 323       | R124 075 320      |      | 26.4            |      |                        |                           |
| RG142 / RG223 / RG400 | 5/50/D           | R124 076 323       | R124 076 320      | 1    | 26.3            | 7    |                        | Crimp type                |
| AEP-195FR             | LMR® 195         |                    | R124 075 210      |      | 27.15           |      |                        |                           |
| AEP-200FR             | LMR® 200         |                    | R124 076 450      |      | 29.15           |      |                        |                           |
| AEP-240FR             | LMR® 240         |                    | R124 076 430      |      | 33.59           | 12.7 |                        |                           |
| AEP-400FR             | LMR® 400         |                    | R124 080 030      |      |                 |      |                        |                           |

STRAIGHT PLUGS, SOLDER TYPE FOR SEMI-RIGID CABLE

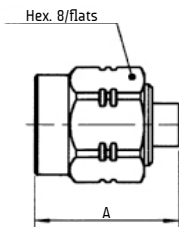


Fig. 1

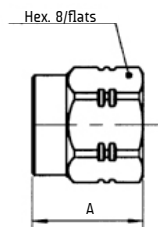


Fig. 2

| Cable group | Cable group dia. | Part number (Gold) | Fig. | Dimensions A (mm) | Captive center contact |
|-------------|------------------|--------------------|------|-------------------|------------------------|
| RG405       | .085"            | R124 052 013       | 1    | 11.1              | no                     |
| RG402       | .141"            | R124 054 003       | 2    | 8.5               | yes                    |
|             |                  | R124 055 003       | 1    | 11.2              | no                     |

## Plugs and jacks

## RIGHT ANGLE PLUGS

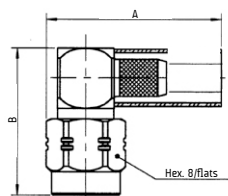


Fig. 1

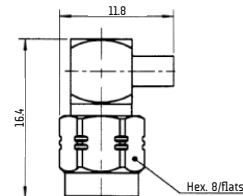


Fig. 2

| Cable group               | Cable group dia.    | Part number (Gold) | Part number (BBR) | Fig. | Dimensions (mm) |       | Note                             |
|---------------------------|---------------------|--------------------|-------------------|------|-----------------|-------|----------------------------------|
|                           |                     |                    |                   |      | A               | B     |                                  |
| RG174 / RG316 / AEP-100FR | 2.6/50/S & LMR® 100 | R124 172 123       | R124 172 120      | 1    | 18              | 16.35 | Crimp type for flexible cable    |
| RD316                     | 2.6/50/D            | R124 174 123       | R124 174 120      |      |                 |       |                                  |
| RG58 / RG141              | 5/50/S              | R124 175 123       | R124 175 120      |      | 21              | 19.67 | Crimp type                       |
| RG142 / RG223 / RG400     | 5/50/D              | R124 176 123       | R124 176 120      |      |                 |       |                                  |
| AEP-195FR                 | LMR® 195            |                    | R124 175 110      |      | 16.29           | 16.3  | Solder type for semi-rigid cable |
| AEP-200FR                 | LMR® 200            |                    | R124 175 200      |      |                 |       |                                  |
| AEP-240FR                 | LMR® 240            |                    | R124 175 310      | 2    |                 |       |                                  |
| RG405                     | .085"               | R124 153 003       | R124 153 001      |      |                 |       |                                  |
| RG402                     | .141"               | R124 154 001       | R124 154 001      |      |                 |       |                                  |

## STRAIGHT JACKS

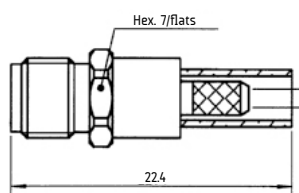


Fig. 1

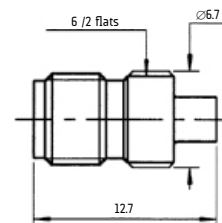


Fig. 2

| Cable group   | Cable group dia. | Part number (Gold) | Fig. | Captive center contact | Note                               |
|---------------|------------------|--------------------|------|------------------------|------------------------------------|
| RD316         | 2.6/50/D         | R124 233 123       | 1    | yes                    | Full crimp type for flexible cable |
| RG174 / RG316 | 2.6/50/S         | R124 236 123       |      |                        |                                    |
| RG405         | .085"            | R124 222 003       | 2    | no                     | Solder type for semi-rigid cable   |

## Jacks

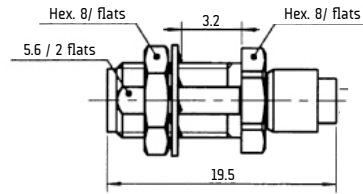
**BULKHEAD FEEDTHROUGH STRAIGHT JACKS, FULL CRIMP TYPE, FOR FLEXIBLE CABLE**

Fig. 1

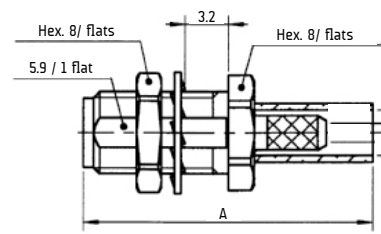
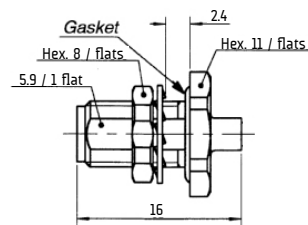


Fig. 2

| Cable group               | Cable group dia.    | Part number (Gold) | Part number (BBR) | Fig. | Dimensions A (mm) | Panel drilling | Captive center contact | Note                              |
|---------------------------|---------------------|--------------------|-------------------|------|-------------------|----------------|------------------------|-----------------------------------|
| RG178 / RG196             | 2/50/S              | R124 310 023       |                   | 1    |                   | P06            |                        | Reverse crimping / Solder contact |
| RG174 / RG316 / AEP-100FR | 2.6/50/S & LMR® 100 | R124 312 123       | R124 312 120      | 2    | 22.4              | P05            | yes                    |                                   |
| RG 58 / RG141             | 5/50S               |                    | R124 314 120      |      | 25.4              |                |                        |                                   |
| RG142 / RG223 / RG400     | 5/50/D              |                    | R124 315 120      |      |                   |                |                        | Full crimp type                   |

**BULKHEAD FEEDTHROUGH STRAIGHT JACKS, SOLDER TYPE, FOR SEMI-RIGID CABLE - PANEL SEAL**

| Cable group | Cable group dia. | Part number (Gold) | Panel drilling | Captive center contact |
|-------------|------------------|--------------------|----------------|------------------------|
| RG405       | .085"            | R124 326 003       | P05            | no                     |
| RG402       | .141"            | R124 325 003       |                |                        |

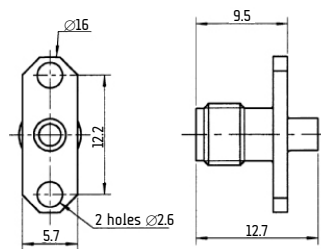
**FLANGE JACKS, SOLDER TYPE FOR SEMI-RIGID CABLE**

Fig. 1

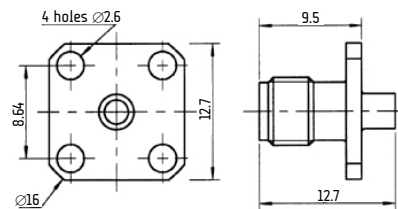
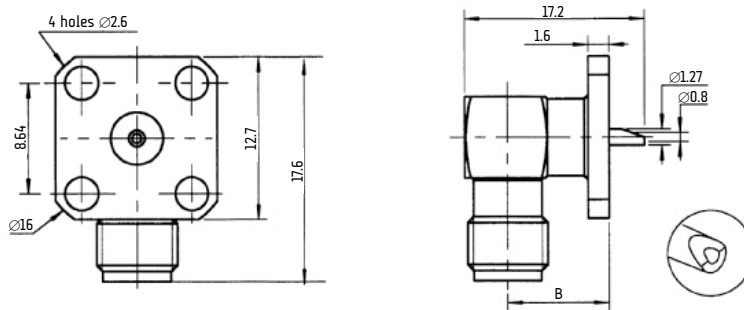


Fig. 2

| Cable group | Cable group dia. | Part number (Gold) | Fig. | Panel drilling | Captive center contact |
|-------------|------------------|--------------------|------|----------------|------------------------|
| RG405       | .085"            | R124 252 003       | 1    | P04            | no                     |
|             |                  | R124 256 003       | 2    | P02            |                        |
| RG402       | .141"            | R124 255 003       |      |                |                        |

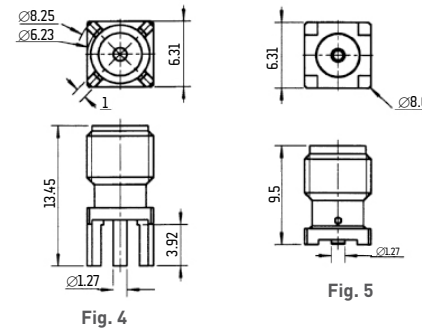
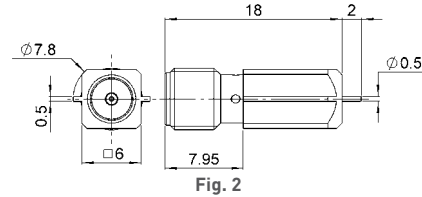
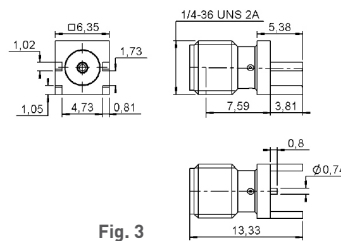
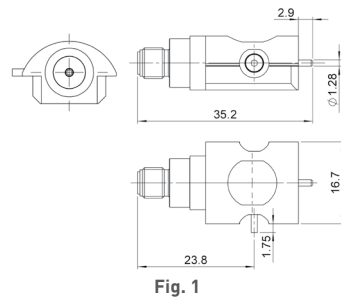




Visit [www.radiall.com](http://www.radiall.com) and enter the part number.

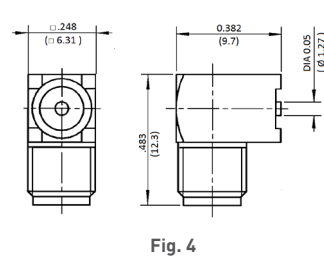
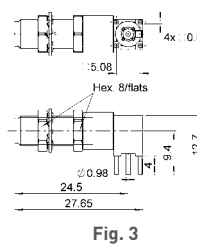
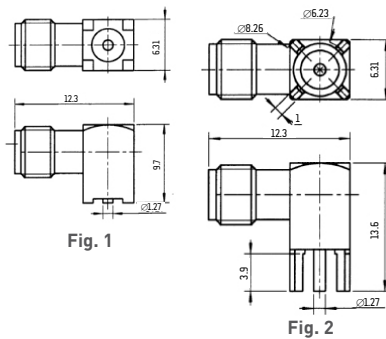
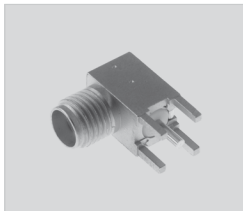
## Switches

### STRAIGHT FEMALE PCB RECEPTACLES AND SWITCHES



| Part number  | Fig. | Panel drilling | Assembly instructions | Finish | Note                                                             |
|--------------|------|----------------|-----------------------|--------|------------------------------------------------------------------|
| R124 422 001 | 1    |                | M03                   | Gold   | Switch edge card SMT - Right type - packaging in Reel 110 pieces |
| R124 423 033 | 2    |                | M02                   |        | SMT edge card type - packaging: unit                             |
| R124 423 223 | 3    |                |                       |        |                                                                  |
| R124 426 120 | 4    | P03            |                       | BBR    |                                                                  |
| R124 426 123 | 4    | P03            |                       | BBR    |                                                                  |
| R124 427 000 | 5    |                | M01                   | Gold   | Surface mount / Bulkhead 100 pieces                              |
| R124 427 800 | 5    |                | M01                   |        | Surface mount / Tape & Reel 100 pieces                           |

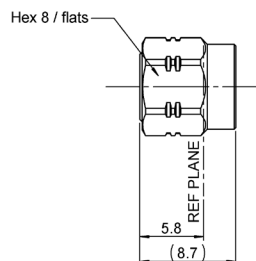
### RIGHT ANGLE FEMALE PCB RECEPTACLES



| Part number  | Fig. | Panel drilling | Assembly instructions | Finish | Note                                |
|--------------|------|----------------|-----------------------|--------|-------------------------------------|
| R124 667 143 | 3    | P07            |                       | Gold   | Packaging: tray 60 pieces           |
| R124 680 120 | 2    | P03            |                       | BBR    |                                     |
| R124 680 123 | 2    | P03            |                       | BBR    |                                     |
| R124 681 000 | 1    |                | M01                   | Gold   | Surface mount / Bulkhead 100 pieces |
| R124 681 800 | 4    |                | M04                   |        | Packaging: Tape & Reel 100 pieces   |

## Receptacles

### MALE CAP



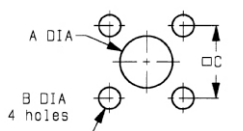
| Part number  | Finish | Note     |
|--------------|--------|----------|
| R124 802 108 | Tin    | No chain |

## ADAPTERS

For in series adapters, please see standard SMA.

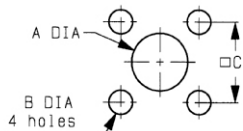
## Panel drilling

### P01



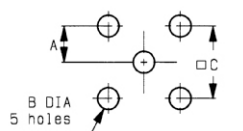
| MM     |      | INCH  |       |
|--------|------|-------|-------|
| maxi   | mini | maxi  | mini  |
| A 4.2  | 4.1  | 0.165 | 0.161 |
| B 2.7  | 2.6  | 0.106 | 0.102 |
| C 8.69 | 8.59 | 0.342 | 0.338 |

### P02



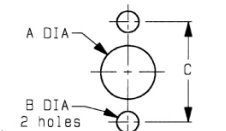
| MM     |      | INCH  |       |
|--------|------|-------|-------|
| maxi   | mini | maxi  | mini  |
| A 6.6  | 6.5  | 0.26  | 0.256 |
| B 2.7  | 2.6  | 0.106 | 0.102 |
| C 8.69 | 8.59 | 0.342 | 0.338 |

### P03



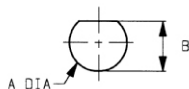
| MM     |      | INCH  |       |
|--------|------|-------|-------|
| maxi   | mini | maxi  | mini  |
| A 2.59 | 2.49 | 0.102 | 0.098 |
| B 1.7  | 1.6  | 0.067 | 0.063 |
| C 5.13 | 5.03 | 0.202 | 0.198 |

### P04



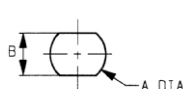
| MM      |       | INCH  |       |
|---------|-------|-------|-------|
| maxi    | mini  | maxi  | mini  |
| A 4.2   | 4.1   | 0.165 | 0.161 |
| B 2.7   | 2.6   | 0.106 | 0.102 |
| C 12.25 | 12.15 | 0.482 | 0.478 |

### P05



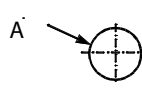
| MM     |      | INCH  |       |
|--------|------|-------|-------|
| maxi   | mini | maxi  | mini  |
| A 6.5  | 6.4  | 0.256 | 0.252 |
| B 6.15 | 6    | 0.242 | 0.236 |

### P06



| MM    |      | INCH  |       |
|-------|------|-------|-------|
| maxi  | mini | maxi  | mini  |
| A 6.5 | 6.4  | 0.256 | 0.252 |
| B 5.8 | 5.7  | 0.228 | 0.224 |

### P07

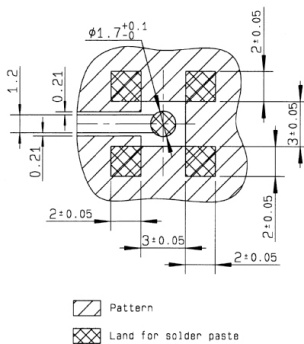


| mm |      |      |
|----|------|------|
|    | Maxi | mini |
| A  | 6.40 | 6.35 |

## M01

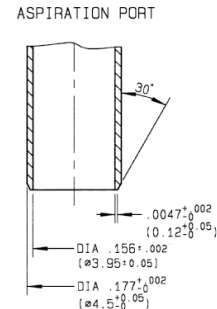
| Part number                  |              |
|------------------------------|--------------|
| R124 427 000<br>R124 427 800 | R124 681 000 |

## SOLDERING PATTERN

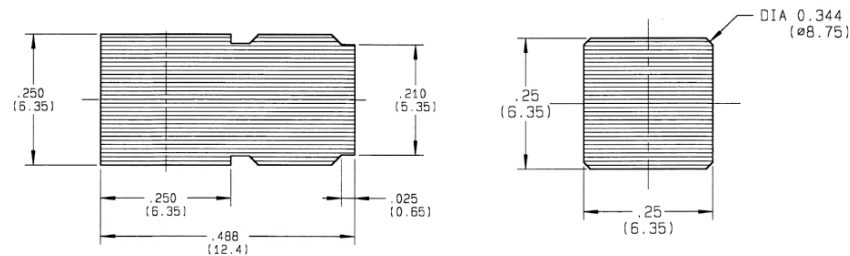


## COPLANAR LINE

- Pattern and signal are on the same side
- Thickness of PCB: 1.6 mm
- The PCB material is made of epoxy resin of glass fabrics bacs ( $\epsilon_r = 4.8$ )
- The solder resist should be printed except for the land pattern on the PCB

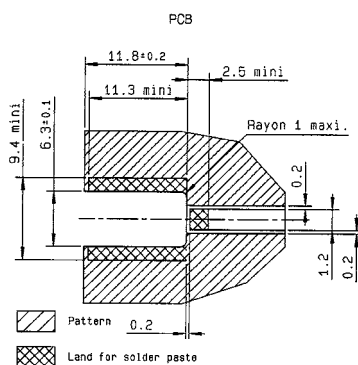


## VIDEO SHADOWS



## M02

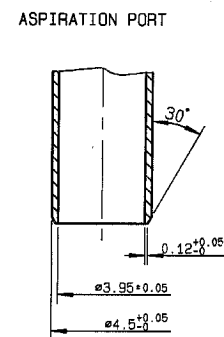
## SOLDERING PATTERN



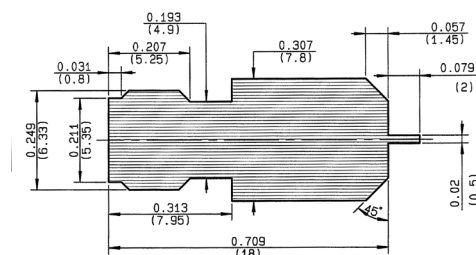
| Part number  |
|--------------|
| R124 423 033 |

## COPLANAR LINE

- Pattern and signal are on the same side
- Thickness of PCB: .063 (1.6 mm)
- The PCB material is made of epoxy resin of glass fabrics bacs. ( $\epsilon_r = 4.8$ )
- The solder resist should be printed except for the land pattern on the PCB



## VIDEO SHADOW



## PCB FOR SMA SWITCH



## R124 681 800

Technical drawing of a mechanical part with dimensions: 6.2, 10.25, 11.3, and 21.2.

- Pattern and signal are on the same side
- Thickness of PCB: .063 (1.6 mm)
- The PCB material is made of epoxy resin of glass fabrics bacs. ( $\epsilon_r = 4.8$ )
- The solder resist should be printed except for the land pattern on the PCB