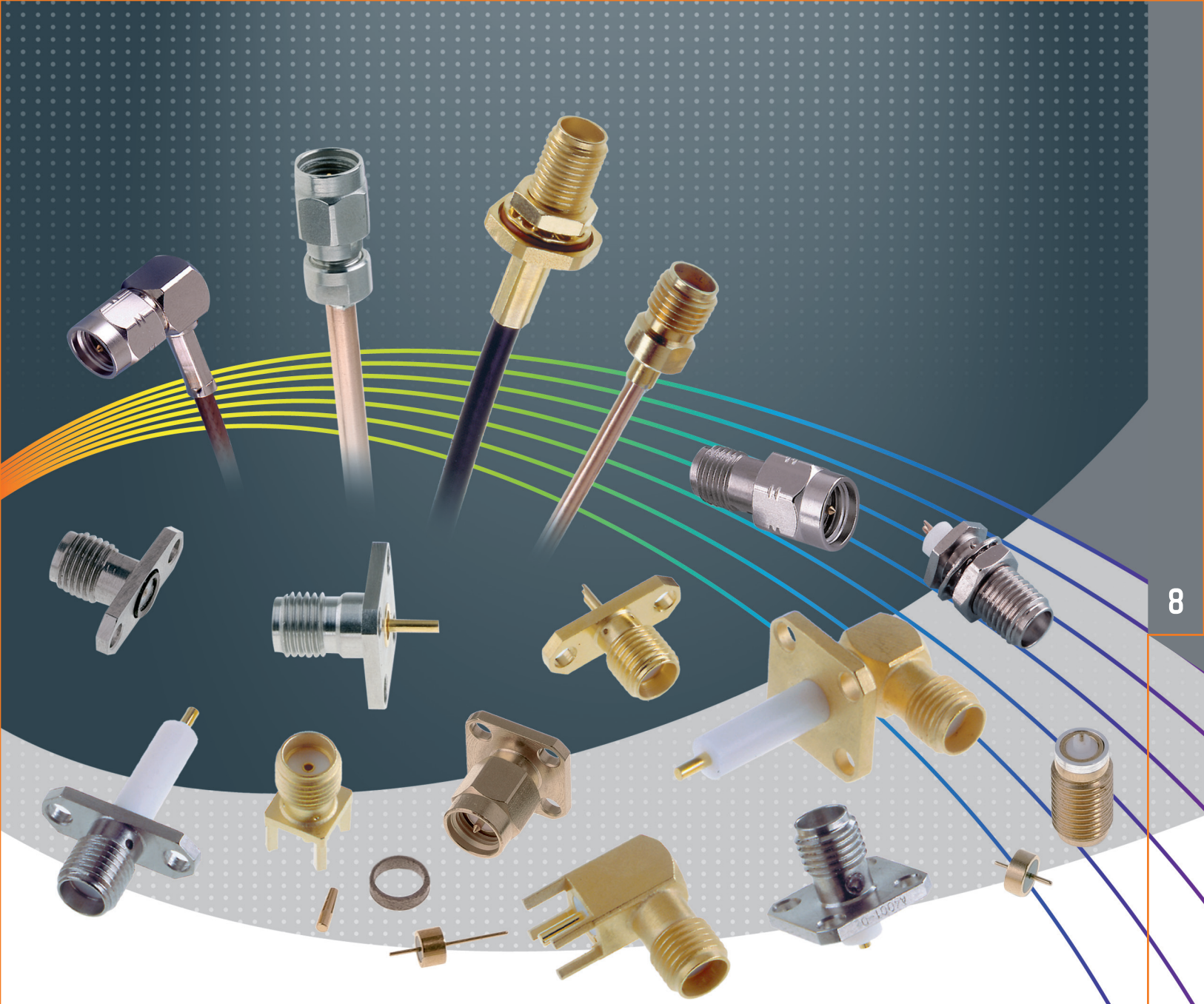

# SMA / SMA-COM / SMA 2.9 series

## R124 / R125 / R127

RADIALL
The next conneXion

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# INTRODUCTION

The RADIALL stainless steel SMA connectors have been designed for applications where reliability, durability, robustness and high frequency are very important.

## • 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 our stainless steel SMA connectors can be mated with our commercial (brass) SMA connectors.

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

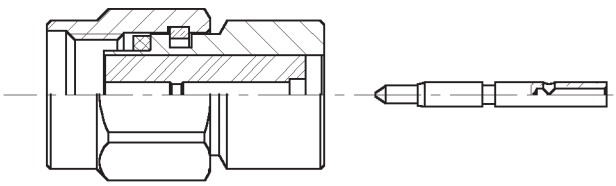
- for straight models: single piece body + center contact + outer ferrule,
- for right angle models: single piece body + cap + outer ferrule.

## • 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):



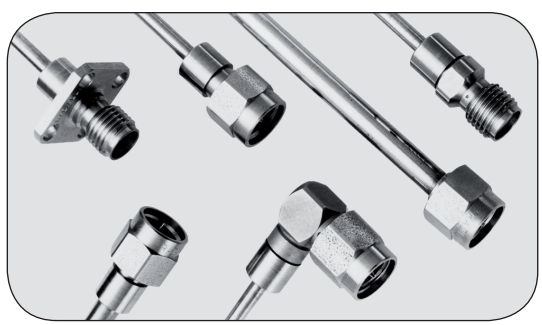
The relative position of the center contact into the interface is mechanically guaranteed by the snapping of the insulator inner shoulder into the groove of the center contact.
This design facilitates the captivation operation in contrast of other designs, requiring 2 insulators to provide contact retention.

## • 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 saving, repeatability and performance.



## • SMA HERMETIC

Hermetic connectors are required to maintain a pressurised 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$^3$/sec)

The hermeticity level is guaranteed by the glass bead soldered into the package. A large choice 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**

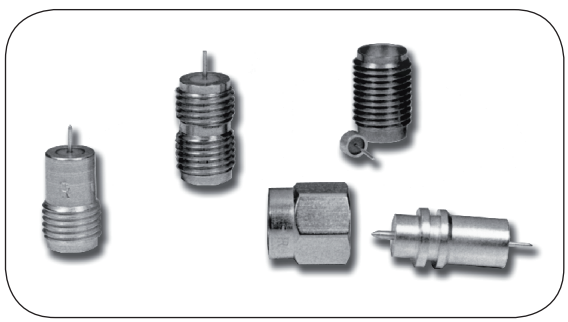
(leakage rate below $10^{-8}$ atm/cm$^3$/sec)

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 offer superior climatic resistance: -65°C +200°C.

**3. Hermetic receptacles without glass bead**

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

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



# INTRODUCTION

| 50Ω | DC - 18 GHz<br>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

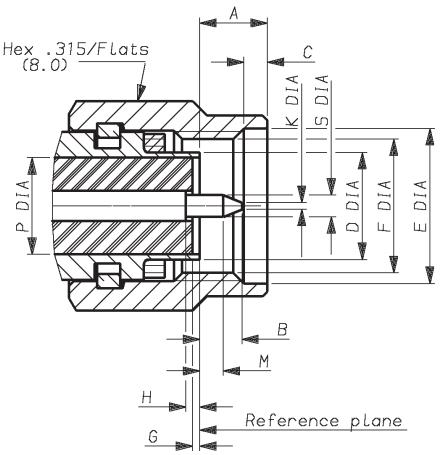
(For space range)

- SCC 3402 (ESA)
- CNES

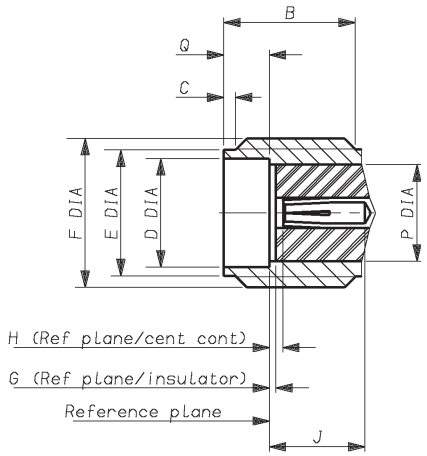
## APPLICATIONS

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

## 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.) | **Frequency** | **1 GHz** | **2.4 GHz** | **6 GHz** | **12.4 GHz** | **18 GHz** | **27 GHz** |
| • Straight connector | .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 | | | | | | | |
| • 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<br>5/50S | 0.06√F (F in GHz) max | | | | | |
| • Right angle connector | .085" | 0.04 | 0.04 | 0.04 | 0.08 | | |
| | .141" | 0.04 | 0.05 | 0.06 | 0.09 | | |
| | 2.6/50S | 0.08 | 0.08 | 0.10 | 0.10 | | |
| | 5/50S | 0.04 | 0.12 | 0.12 | 0.25 | | |
| RF leakage (dB max)<br>• connectors for semi-rigid cables solder attachment<br>• connectors for flexible cables crimp attachment<br>• receptacles | | - 90 + F (GHz)<br>- 60 + F (GHz)<br>- 100 + F (GHz) | | | | | |
| Insulation resistance | | 5 000 MΩ min | | | | | |
| Contact resistance<br>• outer conductor<br>• inner conductor | | **After tests**<br>4 mΩ<br>3 mΩ | | | **Initial**<br>3 mΩ<br>2 mΩ | | |
| Working voltage in VRMS | | **.085", RG 405, KS 1** | | **.141", RG 402, KS 2** | **RG 174, 188, 316, KX 3, KX 22** | | **RG 55, 142, 223, KX 23** |
| • sea level | | 350 | | 500 | 250 | | 335 |
| • 70 000 ft (21000 m) | | 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<br>• axial<br>• torque | 27 N<br>2.8 N | | | |

| Test/characteristics | Values/remarks |
|---|---|

## ENVIRONMENTAL CHARACTERISTICS

| | |
|---|---|
| Temperature range<br>• standard models<br>• semi-rigid cables<br>• R125 753 000 & R125 603 000 | <br>-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 $10^{-6}$ mmHg (Torr) leakage rate < $10^{-6}$ atm/cm$^3$/sec |
| Barometric pressure | MIL STD 202, method 105, condition C |

## MATERIALS AND PLATING

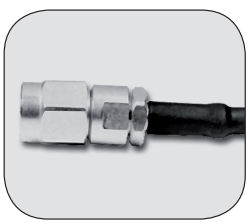
| | Material | Plating |
|---|---|---|
| Body/nut | Stainless steel | Passivated or gold plated (bodies) |
| Center contacts | Beryllium copper (female)<br>Brass (male) | Gold plated |
| Gaskets | Silicone rubber | |
| Insulators | PTFE | |

Standard packaging: 100 pieces.

All dimensions are given in mm



## STRAIGHT PLUGS FOR FLEXIBLE CABLES



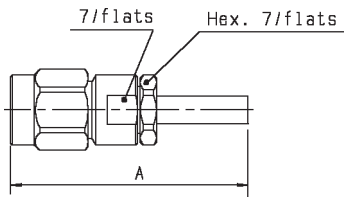



**Fig. 1**

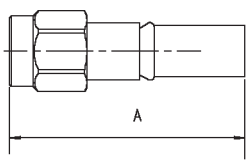



**Fig. 2**

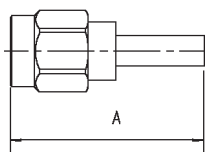



**Fig. 3**

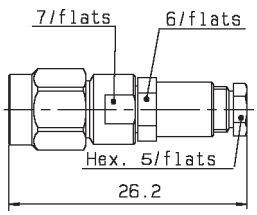


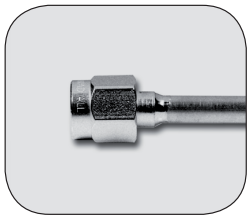

**Fig. 4**

| Cable group | Cable group dia. | Part number (gold) | Part number (passivated) | Fig | Dimensions A (mm) | Captive center contact | Assembly type | Note |
|---|---|---|---|---|---|---|---|---|
| RG178/RG196 | 2/50/S | R125 069 000 | | 1 | 26 | yes | Crimp | |
| RG174/RG316 | 2.6/50/S | R125 071 120 | | 3 | 24.3 | yes | | 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 | | |
| RD316 | 2.6/50/D | R125 072 080 | | 2 | 20.1 | no | | 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 | | |
| Special | 2.2/50/D | | R125 002 200 | 4 | 25 | yes | Clamp | |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# PLUGS

## STRAIGHT PLUGS SOLDER TYPE FOR SEMI-RIGID CABLES



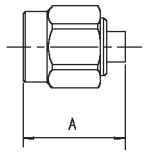



Fig. 1

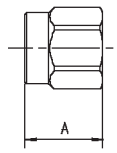
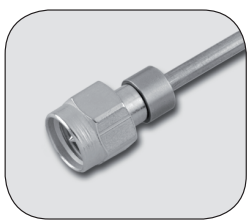



Fig. 2

| Cable group | Cable group dia. | Part number (gold) | Part number (gold/passivated coupling nut) | 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 | | Without center contact |
| | | R125 054 500 | | | 7.5 | | Without center contact/ retractable couplingt 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 |

## STRAIGHT PLUGS CRIMP TYPE FOR SEMI-RIGID CABLES



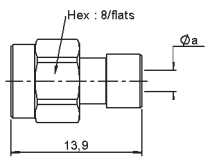



Fig. 1

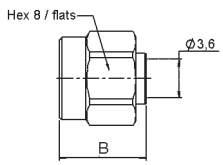



Fig. 2

| Cable group | Cable group dia. | Part number (gold) | Part number (gold/passivated coupling nut ) | Fig | Dimensions A (mm) | |
|---|---|---|---|---|---|---|
| | | | | | ∅ **a** | **B** |
| RG405 | .085" | | R125 052 901 | 1 | 2.2 | |
| RG402 | .141" | | R125 053 901 | 2 | | 8.25 |
| | | R125 054 900 | **R125 054 901** | 2 | | 9.7 |
| | | | R125 055 901 | 1 | 3.64 | |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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See page 8 and 9 for packaging information.

# RIGHT ANGLE PLUGS FOR FLEXIBLE CABLES

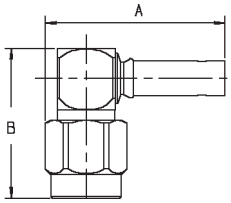



Fig. 1

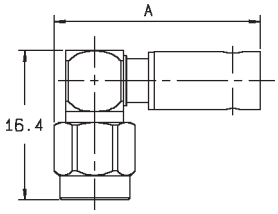



Fig. 2

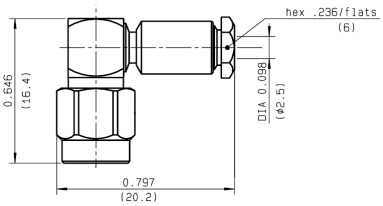
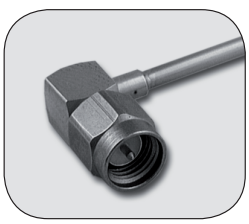



Fig. 3

| 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 | |
| Special | 2.2/50/D | | R125 163 200 | 3 | 20.2 | 16.4 | | clamp | |
| RG174/RG316 | 2.6/50/S | **R125 172 000** | R125 172 001 | 1 | 19.6 | 16.4 | | crimp | Single piece body |
| RD316 | 2.6/50/D | **R125 174 000** | | 1 | 18.6 | 16.4 | | | |
| RG58/RG141 | 5/50/S | **R125 175 000** | R125 175 001 | 2 | 21.8 | | | | Single piece body |
| RG142/RG223/RG400 | 5/50/D | **R125 176 000** | R125 176 001 | 2 | 21.8 | | | | |

# RIGHT ANGLE PLUGS FOR SEMI-RIGID CABLES



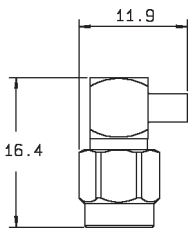



Fig. 1

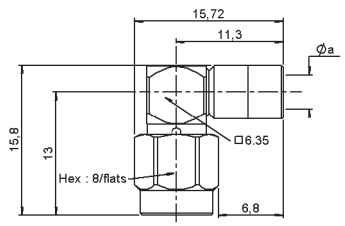


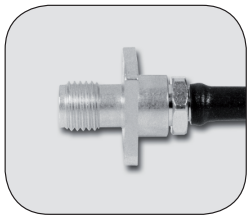

Fig. 2

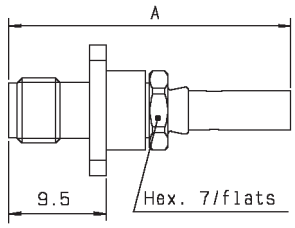
| Cable group | Cable group dia. | Part number (gold) | Part number (gold/passivated nut) | Fig | Dimensions ∅ a (mm) | Captive center contact | Assembly type |
|---|---|---|---|---|---|---|---|
| RG405 | .085" | **R125 153 000** | **R125 153 002** | 1 | | yes | Solder type |
| RG402 | .141" | **R125 154 000** | **R125 154 002** | 1 | | | |
| RG405 | .085" | | R125 153 901 | 2 | 2.2 | | Crimp type |
| RG402 | .141" | | **R125 154 901** | 2 | 3.62 | | |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# JACKS

## STRAIGHT JACKS CRIMP TYPE FOR FLEXIBLE CABLES





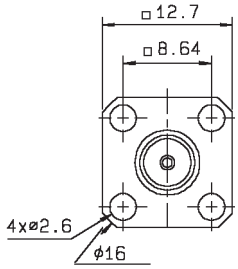




**Fig. 1**

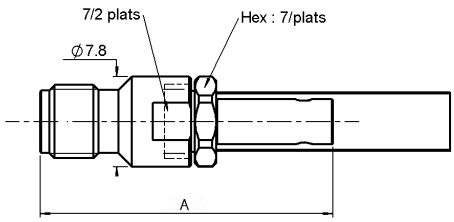



**Fig. 2**

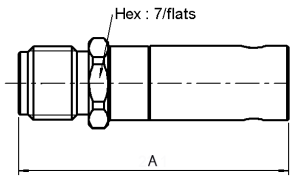



**Fig. 3**

| Cable group | Cable group dia. | Part number (gold) | 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 | no | P03 | Square flange |
| RG58/RG141 | 5/50/S | R125 237 000 | 3 | 23.1 | | | |
| RG142/RG223/RG400 | 5/50/D | R125 238 000 | | | | | |

## STRAIGHT JACKS SOLDER TYPE FOR SEMI-RIGID CABLES

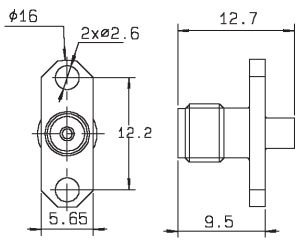



**Fig. 1**

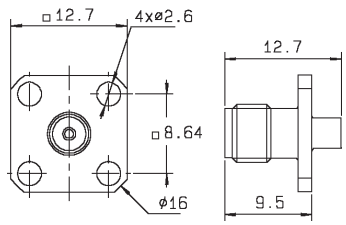



**Fig. 2**

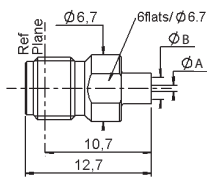



**Fig. 3**

| Cable group | Cable group dia. | Part number (gold) | Fig | Dimensions A (mm) | Dimensions B (mm) | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|---|---|---|
| RG405 | .085" | **R125 222 000** | 3 | 0.65 | 2.25 | no | | |
| | | **R125 252 000** | 1 | | | | P02 | 2 hole flange |
| | | **R125 256 000** | 2 | | | | P03 | square flange |
| RG402 | .141" | **R125 225 000** | 3 | 0.95 | 3.65 | | | |
| | | R125 251 000 | 1 | | | | P02 | 2 hole flange |
| | | **R125 255 000** | 2 | | | | P03 | square flange |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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See page 8 and 9 for packaging information.

# BULKHEAD JACKS CRIMP TYPE FOR FLEXIBLE CABLES (rear mount)

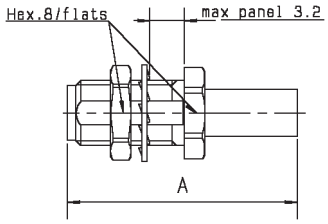



Fig. 1

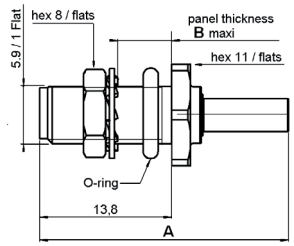
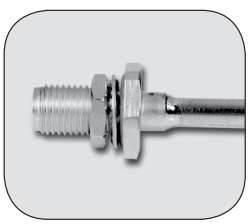



Fig. 2

| 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 Heatshrink sleeve |
| | | R125 312 120 | | | 22.4 | | | | Full crimp |
| RD316 | 2.6/50/D | R125 313 120 | | | | | | | Full crimp |
| | | **R125 322 030** | | 2 | | 3.2 | | | Panel sealed |
| RG58/RG141 | 5/50/S | R125 314 120 | | 1 | 25.4 | | | | Full crimp |
| RG142/RG223/RG400 | 5/50/D | R125 315 120 | | | | | | | |
| | | R125 308 000 | | | 29.6 | | | | Crimp and solder |

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



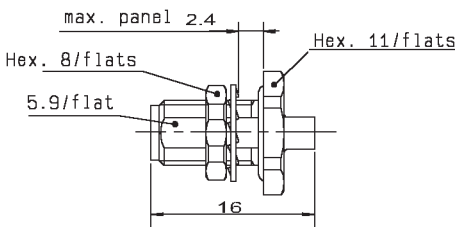



Fig. 1

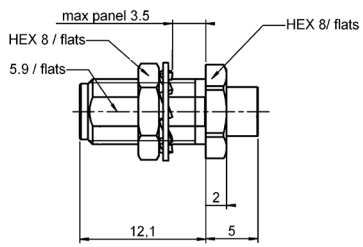



Fig. 2

| Cable group | Cable group dia. | Part number (gold) | Fig | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|---|
| RG405 | .085" | **R125 326 000** | 1 | no | P06 | Panel sealed |
| RG402 | .141" | **R125 325 000** | | | | |
| | | **R125 305 000** | 2 | | | |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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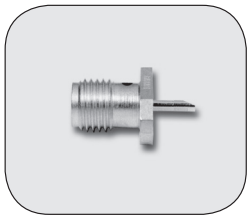
# RECEPTACLES

## STRAIGHT FEMALE FLANGE RECEPTACLES - SOLDER POT



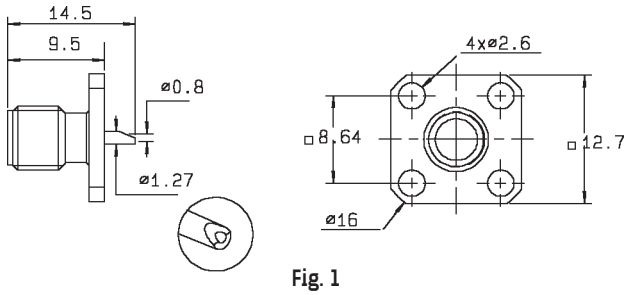



Fig. 1

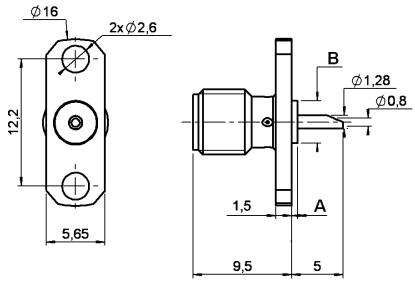
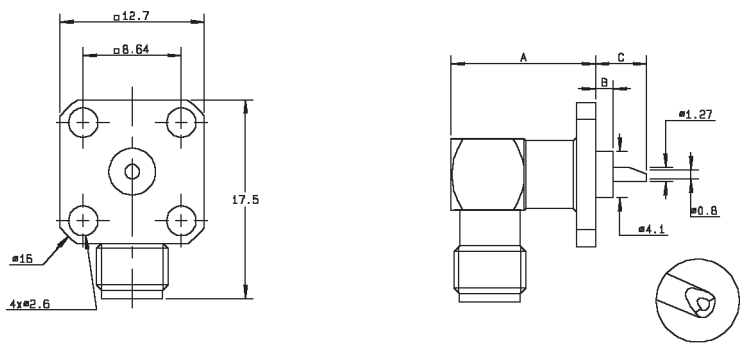



Fig. 2

| Part number (gold) | Part number (passivated) | Fig | Dimensions (mm) | | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|---|---|
| | | | A | B | | | |
| **R125 403 000** | R125 403 001 | 1 | | | yes | P04 | square flange |
| R125 453 000 | | 2 | 0.6 | ∅ 4.06 | | P01 | 2 hole flange |
| **R125 454 000** | R125 454 001 | | | | | | |

## RIGHT ANGLE FEMALE SQUARE FLANGE RECEPTACLES - SOLDER POT




| Part number (gold) | Part number (passivated) | Dimensions (mm) | | | Captive center contact | Panel drilling |
|---|---|---|---|---|---|---|
| | | A | B | C | | |
| | R125 653 001 | 12.4 | 1.57 | 4.6 | yes | P04 |
| R125 654 000 | | 11.1 | 0 | 6.1 | | |



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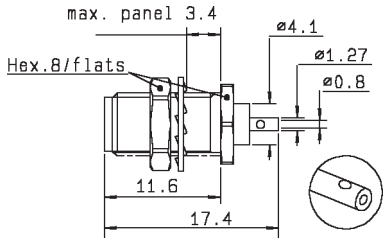
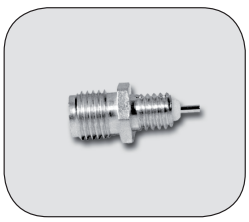
See page 8 and 9 for packaging information.

## BULKHEAD FEMALE RECEPTACLE (rear mount)




| Part number (gold) | Part number (passivated) | Captive center contact | Panel drilling |
|---|---|---|---|
| **R125 553 000** | R125 553 001 | yes | P06 |

## SCREW-ON FEMALE RECEPTACLES (front mount)



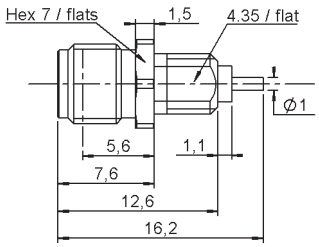



**Fig. 1**

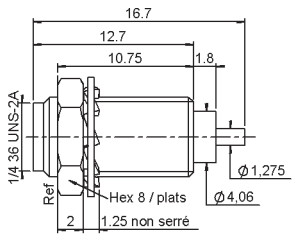
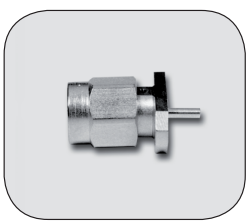



**Fig. 2**

| 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



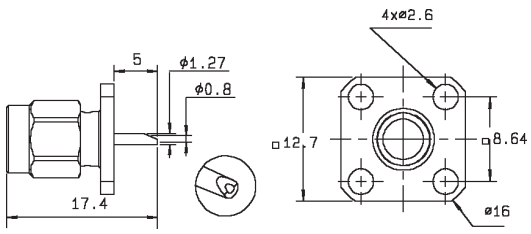



**Fig. 1**

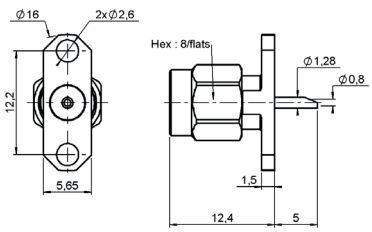



**Fig. 2**

| Part number (gold) | Fig | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|
| R125 433 000 | 1 | yes | P04 | Square flange |
| R125 483 000 | 2 | | P01 | 2 hole flange |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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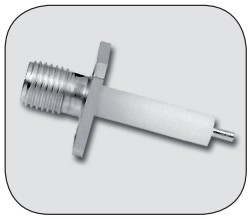
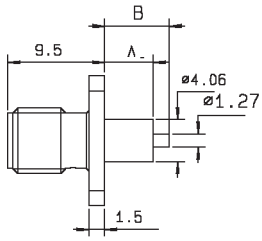
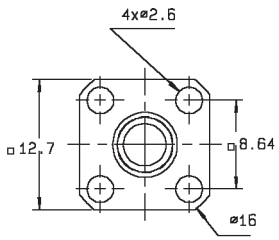
# RECEPTACLES

## SQUARE FLANGE EXTENDED DIELECTRIC FEMALE RECEPTACLES

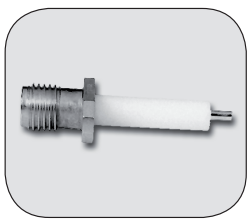


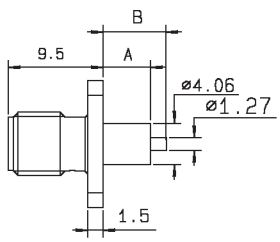


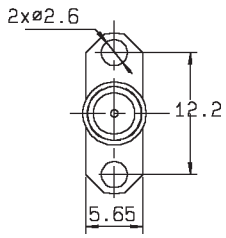




| Part number (gold) | Part number (passivated) | Dimensions (mm) | | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|---|
| | | A | B | | | |
| R125 413 000 | R125 413 001 | 12.7 | 15.9 | no | P04 | no captivation |
| **R125 414 000** | R125 414 001 | | | yes | | epoxy |
| R125 414 004 | | | | | | 4 indents |
| R125 415 000 | R125 415 001 | 18 | 20.5 | | | epoxy |
| R125 415 270 | R125 415 271 | 15 | 17.9 | | | |

## 2 HOLE FLANGE EXTENDED DIELECTRIC FEMALE RECEPTACLES

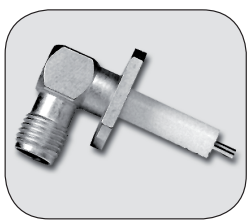


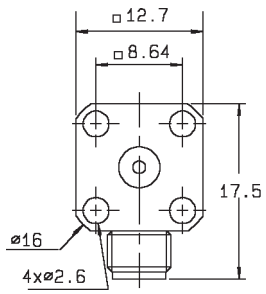


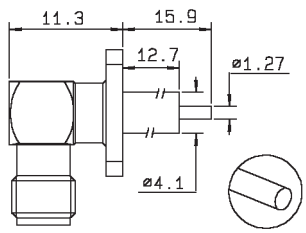




| Part number (gold) | Part number (passivated) | Dimensions (mm) | | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|---|
| | | A | B | | | |
| R125 464 000 | **R125 464 001** | 12.7 | 15.9 | yes | P01 | epoxy |
| R125 464 270 | R125 464 271 | 15 | 17.9 | | | |
| R125 464 274 | | | | | | 4 indents |

## RIGHT ANGLE FEMALE SQUARE FLANGE EXTENDED DIELECTRIC RECEPTACLES






| Part number (gold) | Part number (passivated) | Captive center contact | Panel drilling |
|---|---|---|---|
| R125 654 450 | **R125 654 451** | yes | P04 |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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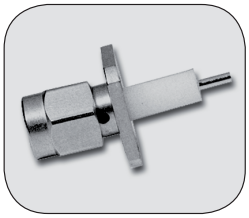
# STRAIGHT MALE FLANGE EXTENDED DIELECTRIC RECEPTACLES



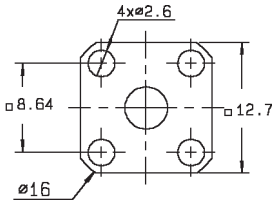
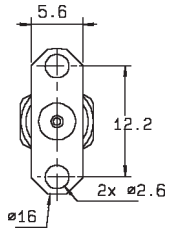



Fig. 1



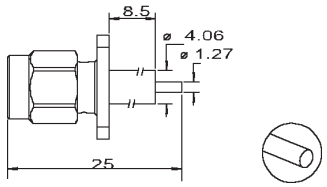
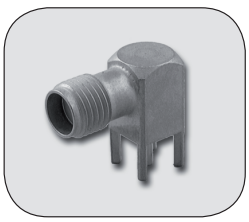




Fig. 2

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

# PCB FEMALE RECEPTACLES



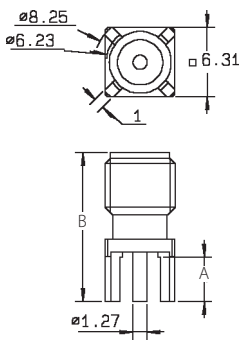



Fig. 1

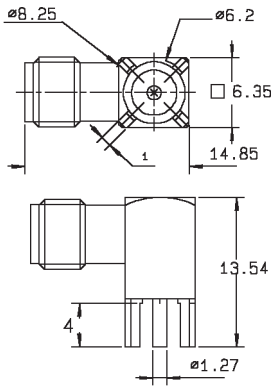



Fig. 2

| Part number (gold) | Fig | Dimensions (mm) | | Captive center contact | PCB pattern | Note |
|---|---|---|---|---|---|---|
| | | A | B | | | |
| **R125 426 000** | 1 | 4 | 13.5 | yes | P05 | |
| R125 426 140 | | 6.9 | 14.4 | | | Selective tin plating |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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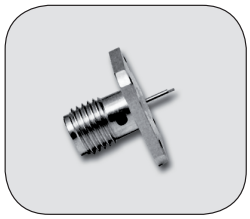
# RECEPTACLES FOR MICROSTRIP

## STRAIGHT FEMALE SQUARE FLANGE RECEPTACLES - TAB CONTACT



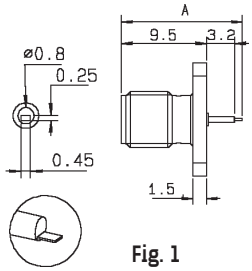



Fig. 1

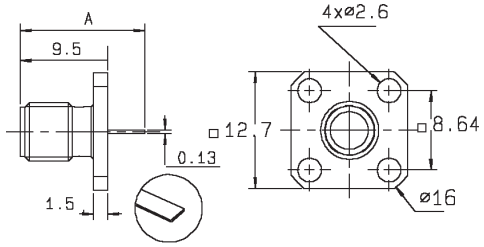



Fig. 2

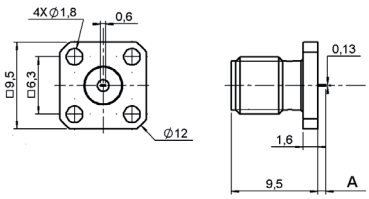



Fig. 3

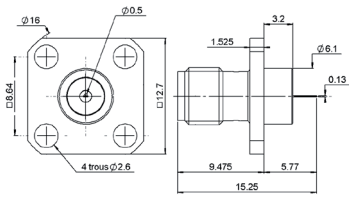



Fig. 4

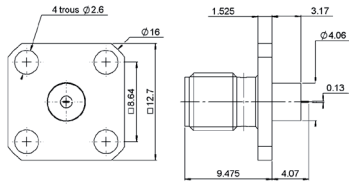
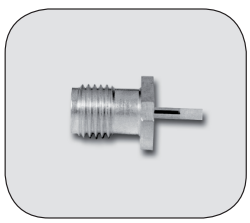
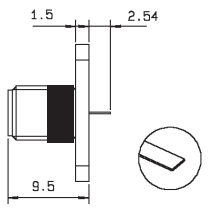



Fig. 5

| 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 | P04 | offset tab |
| R125 510 000 | **R125 510 001** | 2 | 12 | | | tab |
| R125 510 500 | **R125 510 501** | 3 | 2.5 | | P11 | |
| R125 612 120 | | 4 | | | P04 | |
| R125 620 000 | R125 620 001 | 2 | 10.38 | | | |
| R125 622 000 | R125 622 001 | 5 | | | | |
| | R125 943 001 | 3 | 0.89 | | P11 | |

## STRAIGHT FEMALE 2 HOLE FLANGE RECEPTACLES - TAB CONTACT





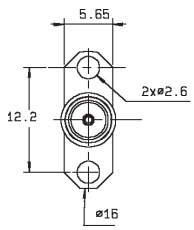




Fig. 1

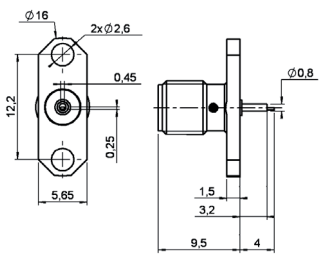



Fig. 2

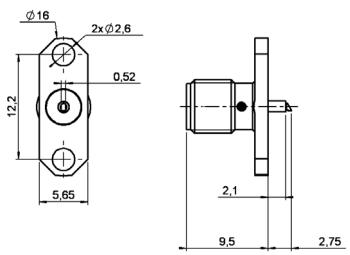


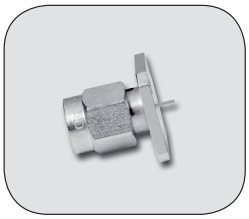

Fig. 3

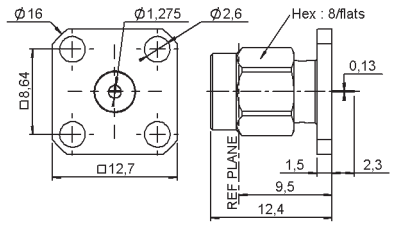
| Part number (gold) | Fig | Captive center contact | Panel drilling | Contact type |
|---|---|---|---|---|
| R125 451 000 | 2 | yes | P01 | offset tab |
| R125 452 000 | 3 | | | special |
| R125 497 000 | 1 | | | tab |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

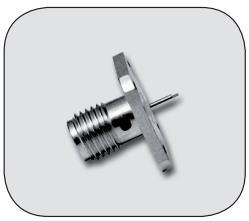
## STRAIGHT MALE SQUARE FLANGE RECEPTACLES - TAB CONTACT

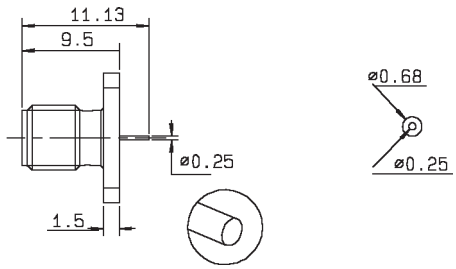





| Part number (gold) | Part number (passivated) | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|
| R125 488 000 | R125 488 001 | yes | P04 | Unit packaging |

## STRAIGHT FEMALE SQUARE FLANGE RECEPTACLES - CYLINDRICAL CONTACT






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

## STRAIGHT FEMALE FLANGE RECEPTACLES - CYLINDRICAL CONTACT

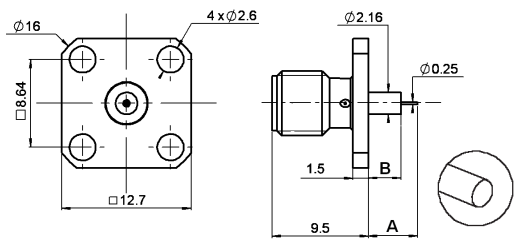



Fig. 1

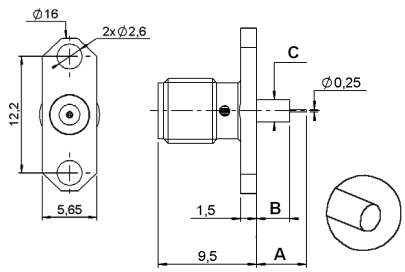



Fig. 2

| Part number (gold) | Part number (passivated) | Fig | Dimensions (mm) | | | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|---|---|---|
| | | | A | B | C | | | |
| R125 512 000 | **R125 512 001** | 1 | 4.8 | 3.2 | | yes | P04 | Square flange |
| R125 513 000 | | | 3.2 | 1.6 | | | | |
| R125 462 000 | R125 462 001 | 2 | 4.8 | 3.2 | 2.16 | | P01 | 2 hole flange |
| R125 463 000 | | | 3.2 | 1.6 | 2.16 | | | |
| | R125 617 001 | | 4.8 | 3.2 | 4.06 | | | |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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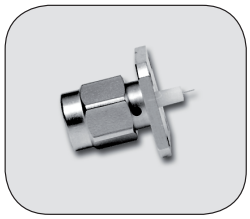
See page 8 and 9 for packaging information.

# RECEPTACLES FOR MICROSTRIP

## STRAIGHT MALE FLANGE RECEPTACLES - CYLINDRICAL CONTACT



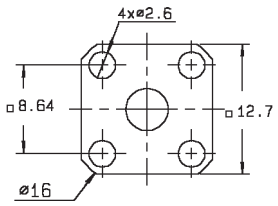



Fig. 1

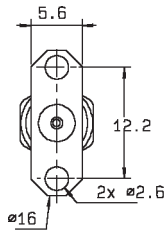
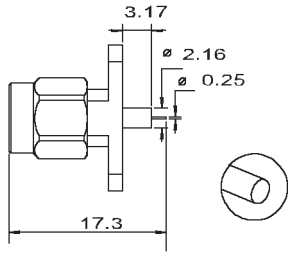



Fig. 2




| Part number (gold) | Part number (passivated) | Fig | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|
| R125 492 000 | R125 492 001 | 1 | yes | P04 | Square flange |
| R125 484 000 | R125 484 001 | 2 | | P01 | 2 hole flange |

## UNIVERSAL FIELD-REPLACEABLE RECEPTACLES - FEMALE SOCKET

(accept pin ∅ 0.93 mm [.037"])

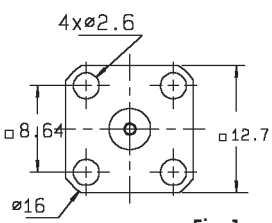
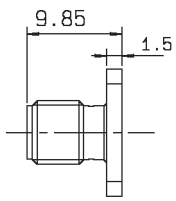
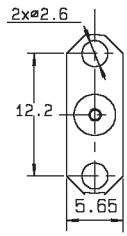



Fig. 1



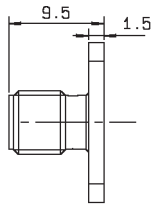
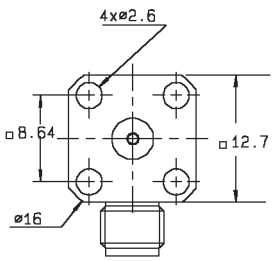




Fig. 2



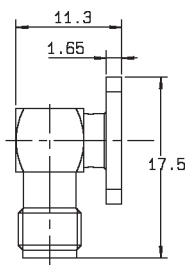




Fig. 3

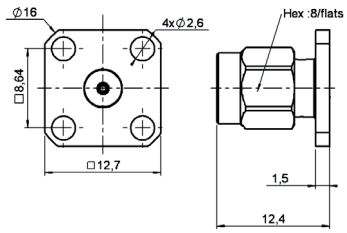



Fig. 4

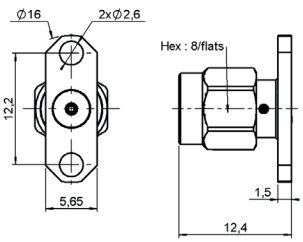



Fig. 5

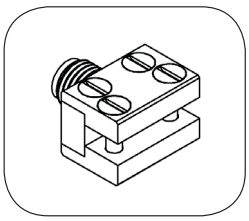
| Part number (gold) | Part number (passivated) | Fig | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|
| **R125 410 000** | R125 410 001 | 1 | yes | P04 | Female-square flange |
| | R125 430 001 | 4 | | | Male-square flange |
| R125 460 000 | **R125 460 001** | 2 | | P01 | Female-2 hole flange - Unit packaging |
| | R125 480 001 | 5 | | | Male-2 hole flange |
| | R125 670 001 | 3 | | P04 | Female-right angle square flange |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# RECEPTACLES FOR MICROSTRIP

## EDGE CARD RECEPTACLES



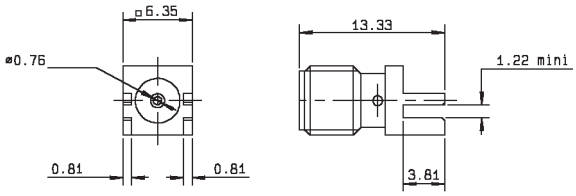



Fig. 1

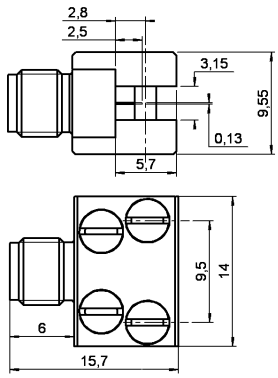
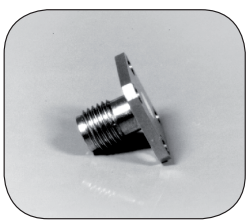


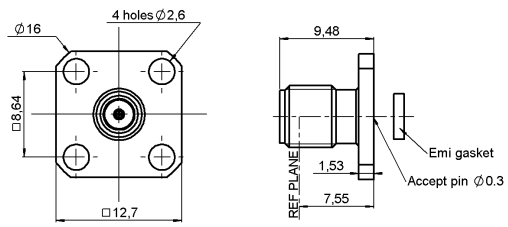

Fig. 2

| Part number (gold) | Fig | Captive center contact | Note |
|---|---|---|---|
| **R125 423 200** | 1 | yes | Solder pins |
| R125 541 000 | 2 | | 4 screws |

# HERMETIC RECEPTACLES WITH SEPARATE GLASS BEAD

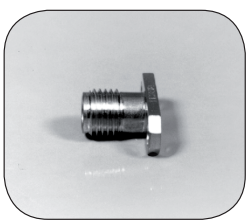
## SQUARE FLANGE 12.7 mm FEMALE RECEPTACLE

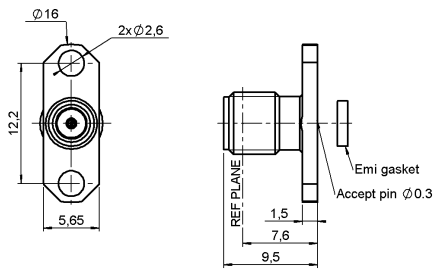





| Part number (gold) | Part number (passivated) | Glass bead only | EMI gasket only | Panel drilling connector | Panel drilling glass bead |
|---|---|---|---|---|---|
| R125 411 000 | R125 411 001 | R280 751 000 | R280 510 000 | P10 | P13 |

## NARROW FLANGE FEMALE RECEPTACLES






| Part number (passivated) | Glass bead only | EMI gasket only | Panel drilling connector | Panel drilling glass bead |
|---|---|---|---|---|
| R125 465 001 | R280 751 000 | R280 510 000 | P12 | P13 |
| R125 465 011 | R280 757 070 | | | P18 |

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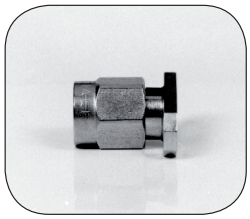
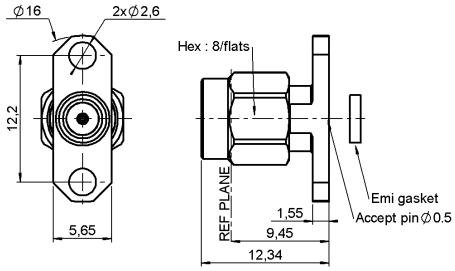
# HERMETIC RECEPTACLES WITH SEPARATE GLASS BEAD

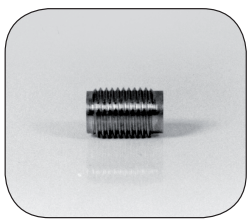
## NARROW FLANGE MALE RECEPTACLES

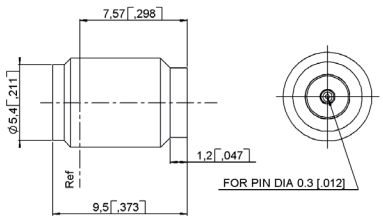


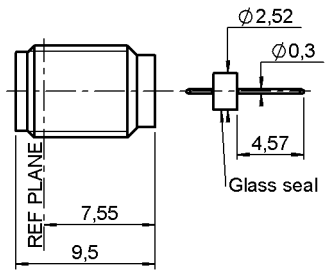



| Part number (passivated) | Glass bead only | EMI gasket only | Panel drilling connector | Panel drilling glass bead |
|---|---|---|---|---|
| R125 481 001 | R280 751 000 | R280 510 000 | P12 | P13 |
| R125 481 011 | R280 757 070 | | | P18 |

## SCREW-ON TYPE FEMALE RECEPTACLES





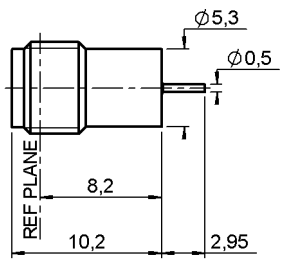




| Part number (passivated) | Glass bead only | Fig | Assembly tool | Packaging | Panel drilling glass bead | Note |
|---|---|---|---|---|---|---|
| R125 556 001 | R280 751 000 | 1 | R282 341 010 | 1 | P15 | - |
| R125 556 011 | R280 757 070 | | | | P19 | - |
| R125 638 001 | R280 751 350 | 2 | | | P15 | Supplied with glass bead |

# HERMETIC RECEPTACLES WITH INTEGRATED GLASS BEAD

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.

## SOLDER TYPE FEMALE RECEPTACLE




| Part number (gold) | Captive center contact | Connector body | Contact type | Packaging |
|---|---|---|---|---|
| R125 630 000 | yes | FN42 alloy | cylindrical | 1 |
| R125 630 040 | | Stainless steel | | |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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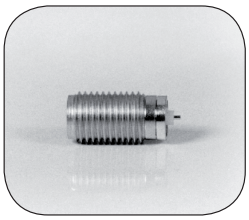
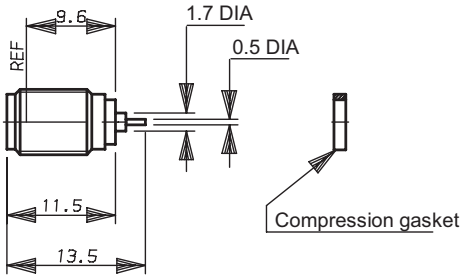
# HERMETIC RECEPTACLES WITH INTEGRATED GLASS BEAD

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

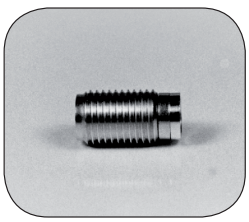
## SCREW-ON TYPE, FEMALE RECEPTACLE






| Part number (passivated) | Panel drilling |
|---|---|
| R125 609 001 | P05 |

## SCREW-ON TYPE, FEMALE RECEPTACLE WITH SLIDING CONTACT



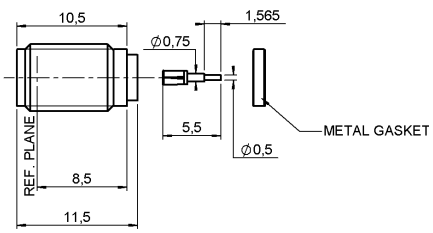



Fig. 1

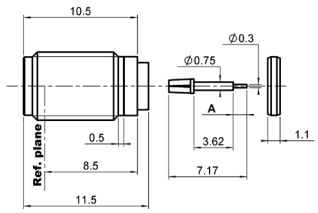


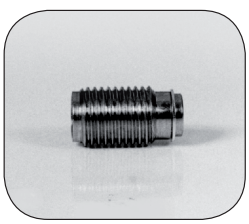

Fig. 2

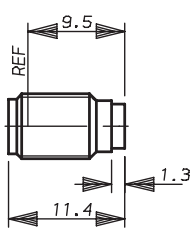
| Part number (gold) | Part number (passivated) | Dimension A (mm) | Panel drilling | Contact type |
|---|---|---|---|---|
| - | R125 609 031 | - | P05 | cylindrical |
| R125 609 160 | - | 1.24 | | |
| R125 609 170 | - | 0.75 | | |

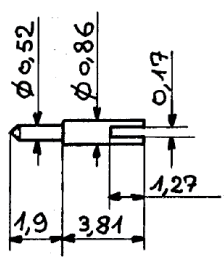
# HERMETIC RECEPTACLES WITHOUT GLASS BEAD

Screw-on receptacles without glass bead provide a lower hermeticity level ($10^{-6}$atm/cm3/sec). A gasket will garantee the hermeticity between the receptacle and the package.

## SCREW-ON TYPE, FEMALE RECEPTACLE WITH SLIDING CONTACT






| Part number (passivated) | Panel drilling | Contact type |
|---|---|---|
| R125 605 301 | P08 | slotted |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# ADAPTERS

## IN SERIES ADAPTERS

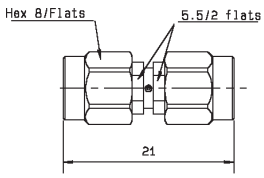



Fig. 1

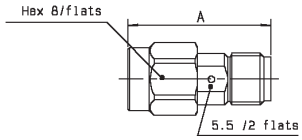



Fig. 2

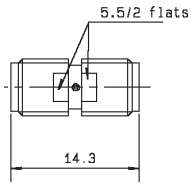



Fig. 3

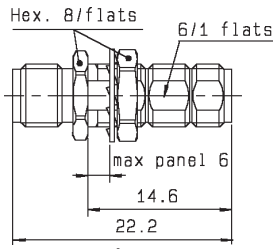



Fig. 4

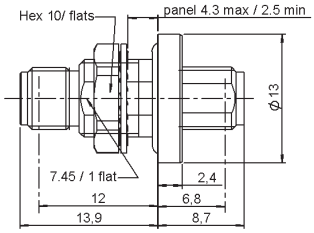



Fig. 5

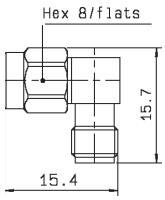



Fig. 6

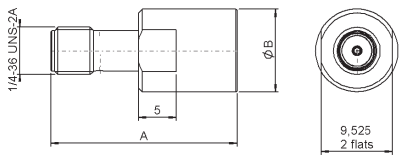
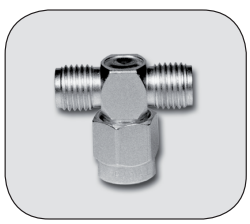
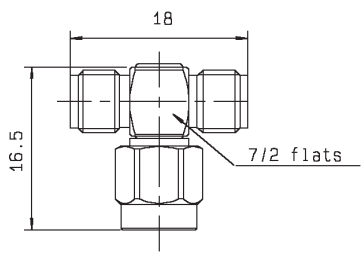



Fig. 7

| Part number (gold) | Part number (passivated) | Fig | Dimensions (mm) | | Captive center contact | Panel drilling | Note |
|---|---|---|---|---|---|---|---|
| | | | A | B | | | |
| **R125 703 000** | **R125 703 001** | 1 | | | yes | | Male-male |
| **R125 704 000** | **R125 704 001** | 2 | 17.5 | | | | Male-female |
| **R125 705 000** | **R125 705 001** | 3 | | | | | Female-female |
| **R125 720 000** | **R125 720 001** | 4 | | | | P06 | Bulkhead female-female |
| R125 753 000 | R125 753 001 | 5 | | | | P08 | Bulkhead hermatically sealed female-female |
| **R125 771 000** | R125 771 001 | 6 | | | | | Right angle male-female |
| | **R125 791 501** | 7 | 23.3 | 8.9 | | | PUSH-ON male |
| | R125 792 501 | | 24.8 | 11 | | | PUSH-ON female |

## TEE IN SERIES ADAPTERS






| Part number (gold) | Part number (passivated) | Captive center contact |
|---|---|---|
| R125 780 000 | **R125 780 001** | yes |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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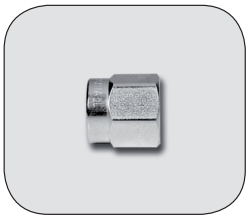
See page 8 and 9 for packaging information.

## MALE AND FEMALE CAPS



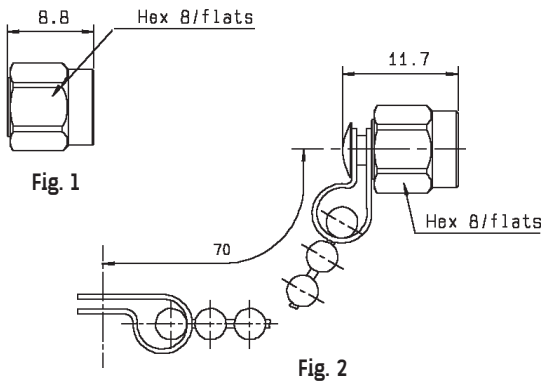
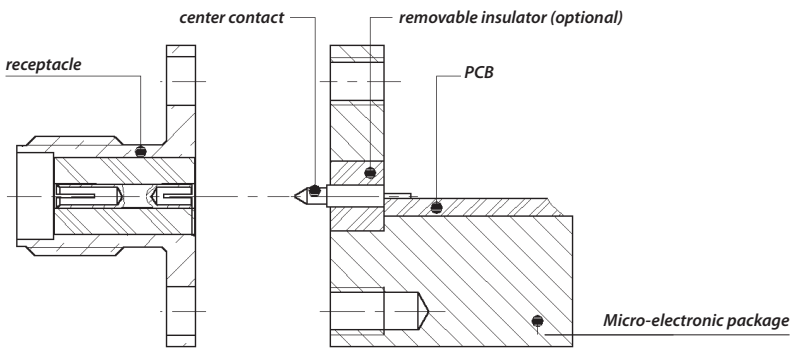


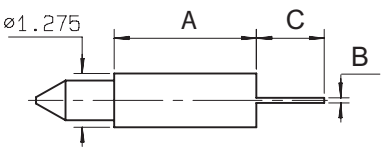

Fig. 1

Fig. 2

| Part number (gold) | Part number (passivated) | Fig | Note |
|---|---|---|---|
| R125 802 000 | R125 802 001 | 1 | Male |
| R125 812 000 | R125 812 001 | 2 | Male |
| | R125 852 001 | 1 | Male short circuit |

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



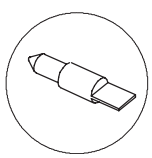



Fig. 1

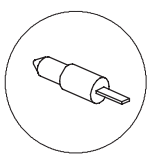


Fig. 2

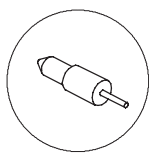


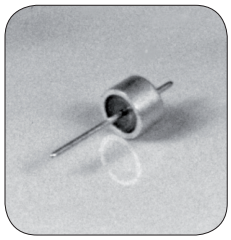
Fig. 3

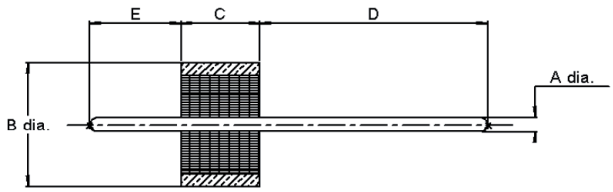
| Part number | Fig. | Termination | Dimensions (mm) | | | Packaging |
|---|---|---|---|---|---|---|
| | | | A | B | C | |
| **R280 461 000** | 1 | Tab | 3.37 | 0.13 | 1.6 | 10 pieces |
| R280 461 200 | 2 | Tab special | 3.37 | 0.13 x W0.51 | 1.6 | |
| R280 461 210 | 1 | Tab | 10.3 | 0.13 | 1.6 | |
|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

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# GLASS BEADS

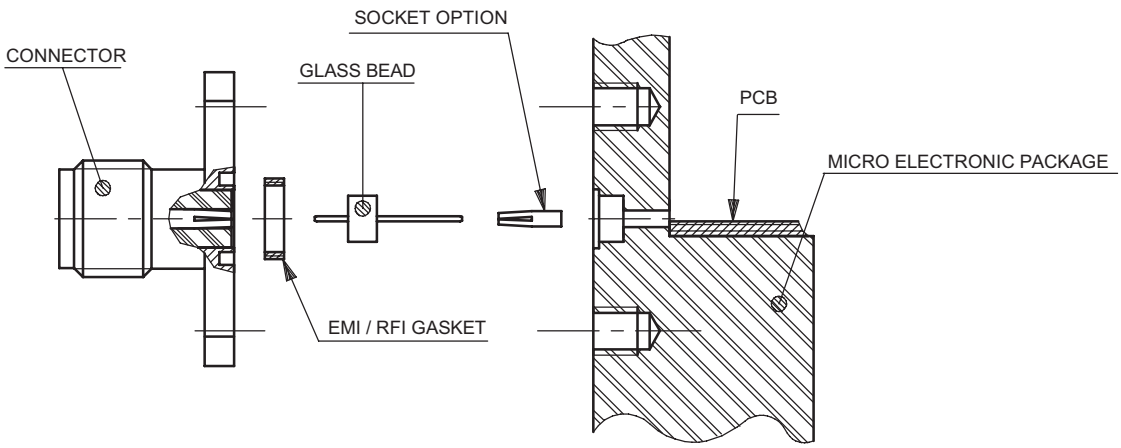
## GLASS BEADS FOR HERMETIC RECEPTACLES

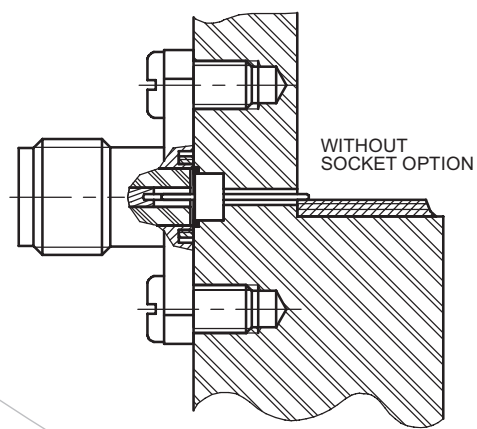


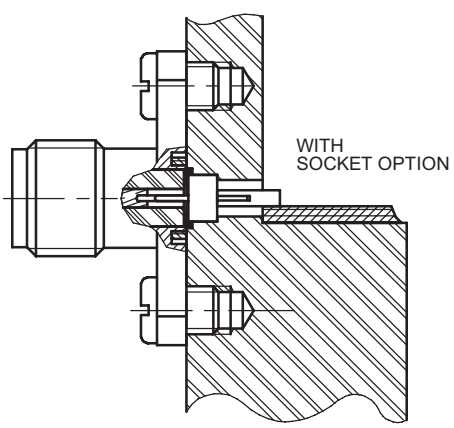



Hermeticity guaranteed at $10^{-8}$ atm.cm$^3$/s

| Part number | Dimensions mm (inch) | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | E |
| R280 751 000 | 0.30 (.012) | 2.52 (.099) | 1.60 (.063) | 4.57 (.180) | 1.83 (.072) |
| R280 751 080 | | | | 1.3 (.051) | |
| R280 755 000 | 0.46 (.018) | 2.85 (.112) | 1.60 (.063) | | |
| R280 757 070 | 0.50 (.019) | 4 (.157) | 1.77 (.070) | 1.77 (.070) | 2.03 (.080) |
| R280 757 080 | | | | 5.82 (.230) | 1.93 (.076) |
| R280 760 040 | 0.30 (.012) | 1.93 (.076) | 1.40 (.055) | 0.74 (.029) | 1.04 (.041) |
| R280 751 350 | 0.30 (.012) | 2.52 (.099) | 1.60 (.063) | 4.57 (.180) | 1.83 (.072) |
| R280 752 000 | 0.38 (.015) | 2.50 (.098) | 156 (.061) | 1.95 (.076) | 1.59 (.062) |
| R280 752 020 | 0.38 (.015) | 2.50 (.098) | 1.56 (.061) | 1.3 (.051) | 1.59 (.062) |
| R280 755 040 | 0.46 (.018) | 2.85 (.111) | 1.60 (.063) | 4.57 (.180) | 1.83 (.072) |



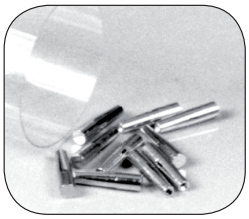



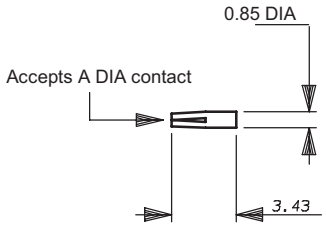



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# ACCESSORIES FOR HERMETIC MICROSTRIP RECEPTACLES

## OPTIONAL SOCKET



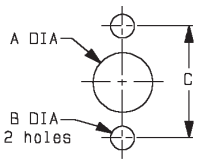



| Part number | A Dia (mm) | Packaging |
|---|---|---|
| R280 469 000 | 0.30 | 10 pieces |
| R280 469 010 | 0.46 | |

For use with glass seal.

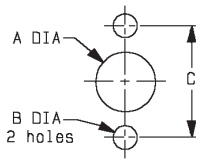
## PANEL DRILLING

### P01



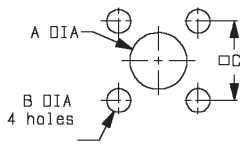

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 4.2 | 4.1 | 0.165 | 0.161 |
| B | 2.7 | 2.6 | 0.106 | 0.102 |
| C | 12.25 | 12.15 | 0.482 | 0.478 |

### P02



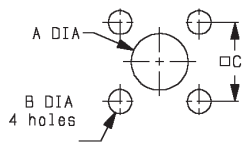

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 6.6 | 6.5 | 0.26 | 0.256 |
| B | 2.7 | 2.6 | 0.106 | 0.102 |
| C | 12.25 | 12.15 | 0.482 | 0.478 |

### P03



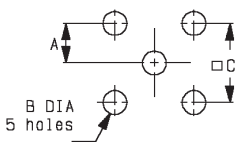

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 6.6 | 6.5 | 0.26 | 0.256 |
| B | 2.7 | 2.6 | 0.106 | 0.102 |
| C | 8.69 | 8.59 | 0.342 | 0.338 |

### P04



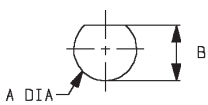

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 4.3 | 4.2 | 0.169 | 0.165 |
| B | 2.7 | 2.6 | 0.106 | 0.102 |
| C | 8.69 | 8.59 | 0.342 | 0.338 |

### P05



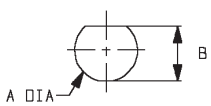

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 2.59 | 2.49 | 0.102 | 0.098 |
| B | 1.7 | 1.6 | 0.067 | 0.063 |
| C | 5.13 | 5.03 | 0.202 | 0.198 |

### P06



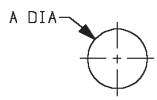

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 6.5 | 6.4 | 0.256 | 0.252 |
| B | 6.14 | 6 | 0.242 | 0.236 |

### P08



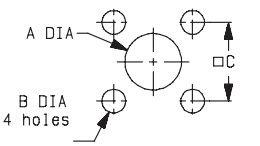

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 8.1 | 8 | 0.319 | 0.315 |
| B | 7.6 | 7.5 | 0.299 | 0.295 |

### P09



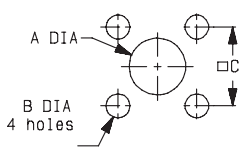

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 5.2 | 5.16 | 0.205 | 0.203 |

### P10



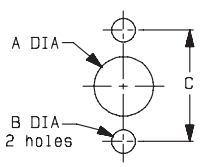

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 4.2 | 4.1 | 0.165 | 0.161 |
| B | 2.7 | 2.6 | 0.106 | 0.102 |
| C | 8.69 | 8.59 | 0.342 | 0.338 |

### P11




| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 4.2 | 4.1 | 0.165 | 0.161 |
| B | 1.9 | 1.8 | 0.071 | 0.067 |
| C | 6.4 | 6.3 | 0.252 | 0.248 |

### P12




| | 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 |

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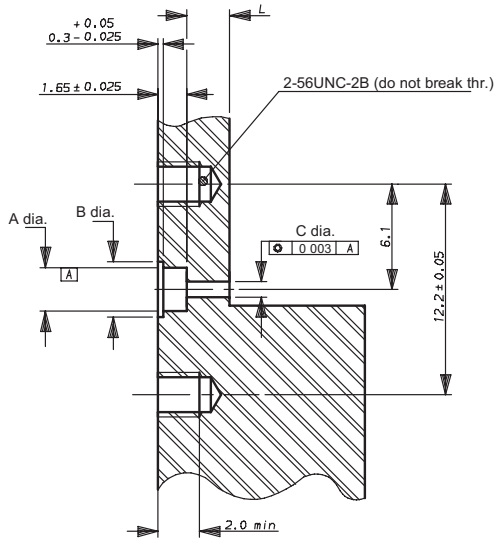
# PANEL DRILLING

## HERMETIC SEPARATE GLASS BEAD RECEPTACLES

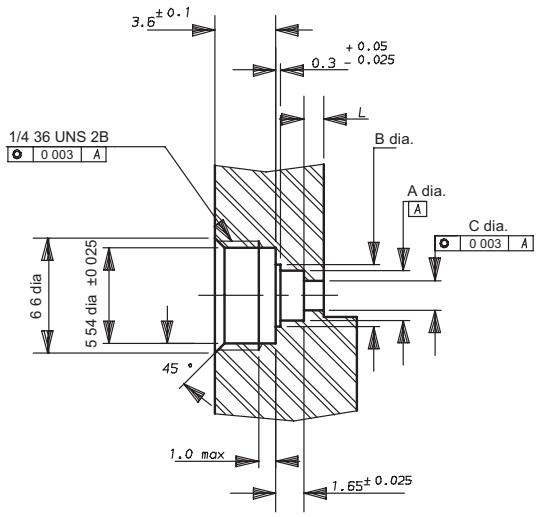
### P13/14




| | | 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.

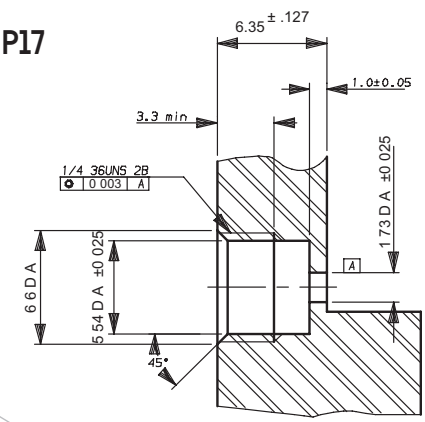
### P15/16



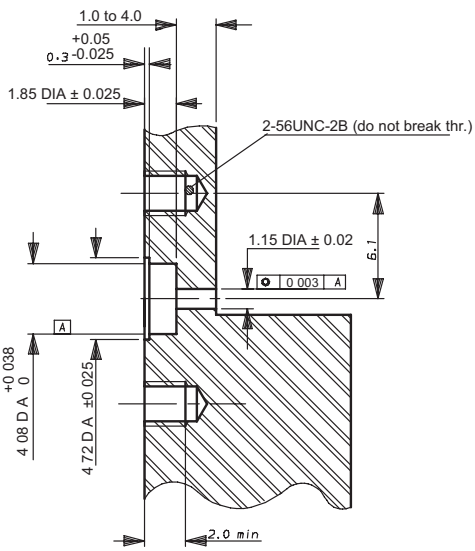

| | | P15 | P16 |
|---|---|---|---|
| A dia. | | $2.6^{\pm 0.025}$ | $2.92^{\pm 0.025}$ |
| B dia. | | $3.23^{\pm 0.025}$ | $3.55^{\pm 0.025}$ |
| C dia. | (1) | $2^{\pm 0.02}$ | |
| | (2) | $0.7^{\pm 0.02}$ | $1.08^{\pm 0.02}$ |
| L dia. | (1) | $2.5^{\pm 0.1}$ | |
| | (2) | from 1 mm to 4 mm | |

(1) Using of the removable contact.
(2) The pin is directly welded on the trace.

### P17

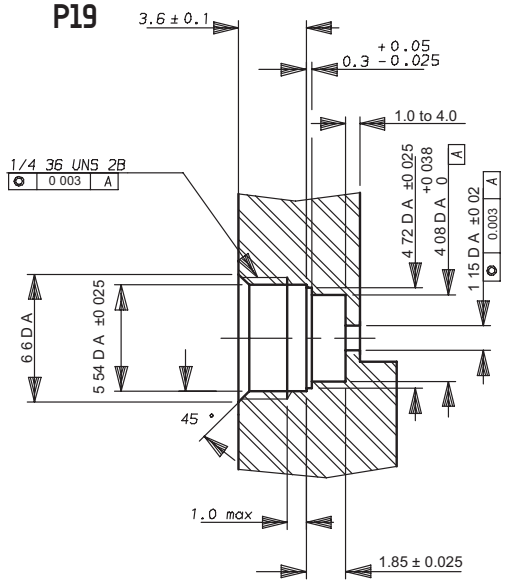



### P18

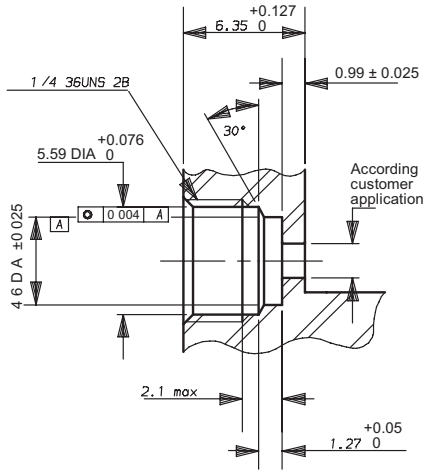


# HERMETIC SEPARATE GLASS BEAD RECEPTACLES

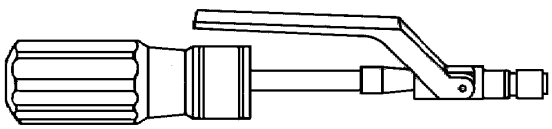
**P19**




**P20**

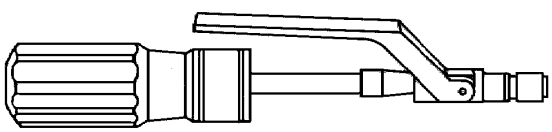



# TOOLING FOR HERMETIC RECEPTACLES



Coupling torque: **190 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 |



Coupling torque: **280 cm N**

| 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 |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# FIELD REPLACEABLE HERMETIC MICROSTRIP RECEPTACLE INFORMATION

## ELECTRICAL PERFORMANCES:

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

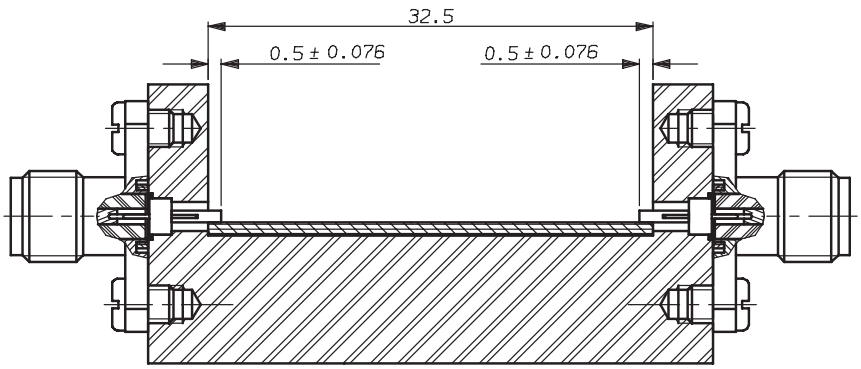
| connector only | seal only | connector & seal |
|---|---|---|
| 1.04 + 0.006F (GHz) | 1.02 + 0.003F (GHz) | 1.06 + 0.01F (GHz) |

## V.S.W.R. MEASUREMENT

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

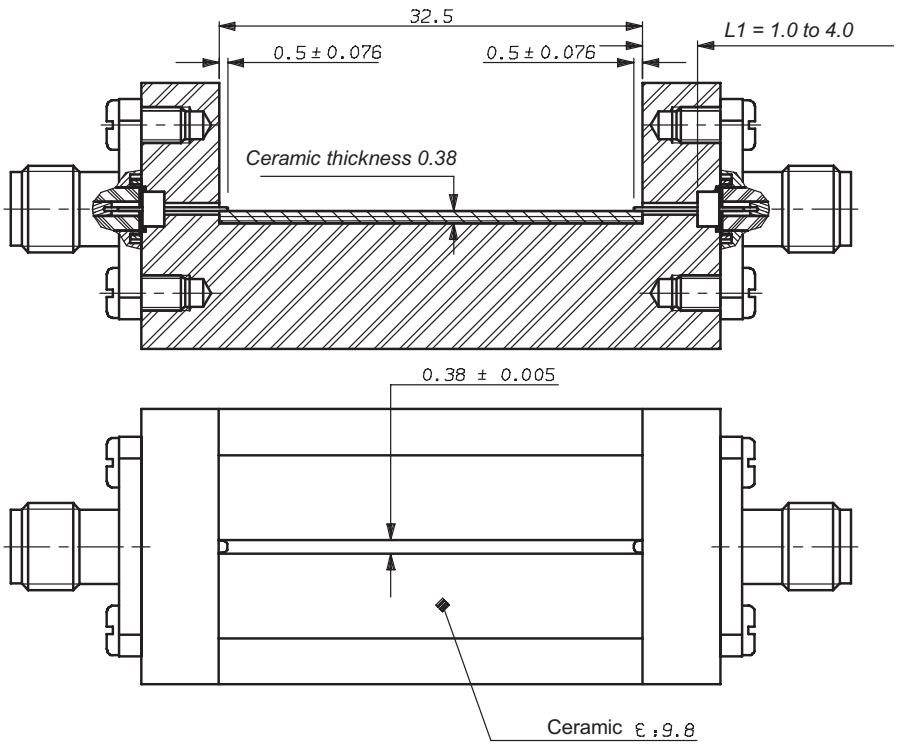
**a) Measurement with auxiliary contact-assembly drawing**

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



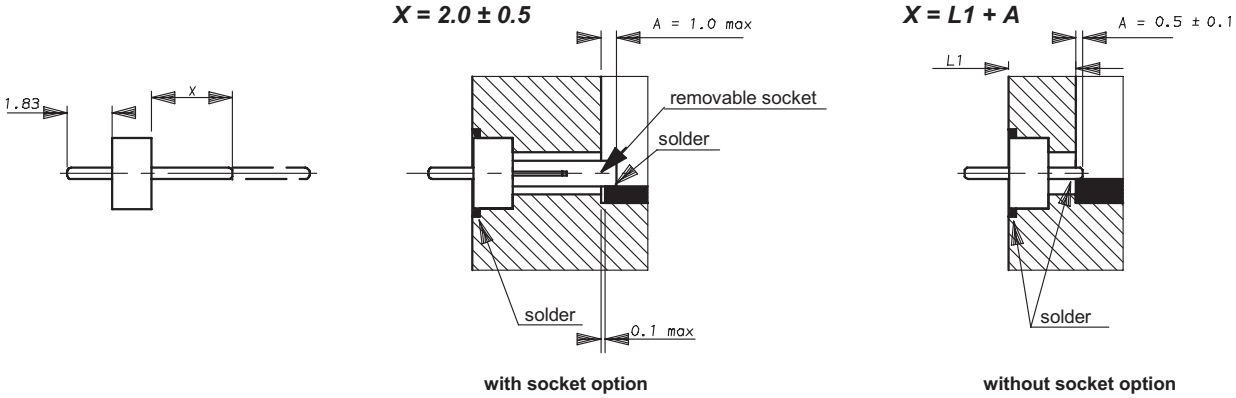

**b) Measurement without auxiliary contact-assembly drawing**

Recommended value : L1 = 1.0 mm




The track width on ceramic defines the circuit impedance.

# GLASS BEAD AND CONNECTOR ASSEMBLY INTO THE MICRO ELECTRONIC PACKAGE




**with socket option** **without socket option**

## 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.

Beware there is not too much welding.

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

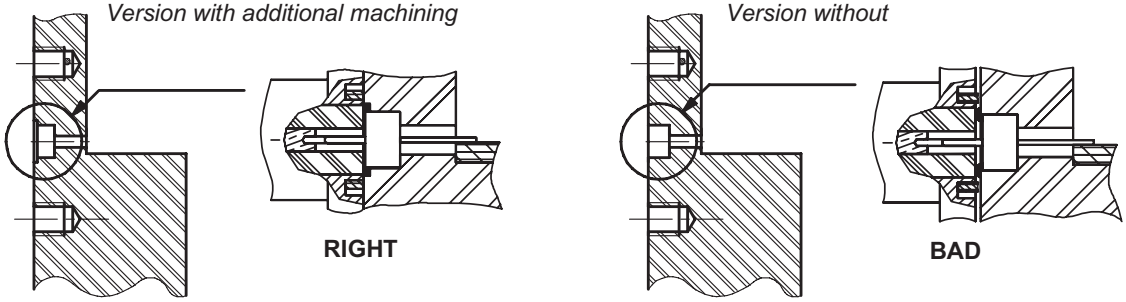
*We advise therefore to follow the A dimension rigorously, by soldering accurately the pin or the socket directly on the trace.*

## 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 positionning 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 utmost 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, datacommunications or test and measurement.

**• Full compatibility:**
These 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 the 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.

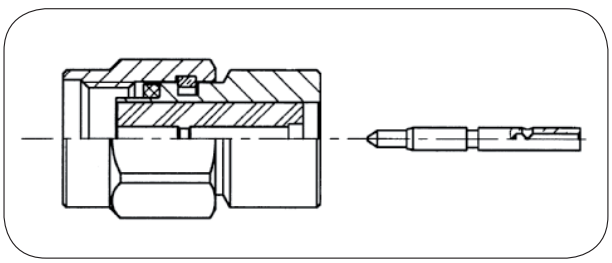
**• Space-saving size:**
Due to the captivation technique, these commercial SMA connectors are shorter than multi-piece body connectors.

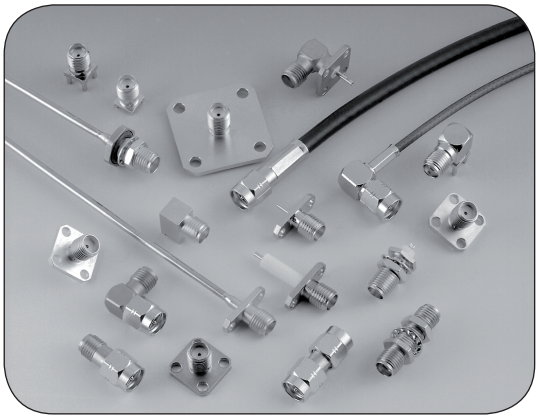
**• Convenient 3-piece design:**
- For straight models: body + center contact + outer ferrule
- For right angle models: single piece body + back cap + outer ferrule

**• 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.





| 50Ω | DC - 18 GHz |
|---|---|

## GENERAL

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

## APPLICABLE STANDARDS

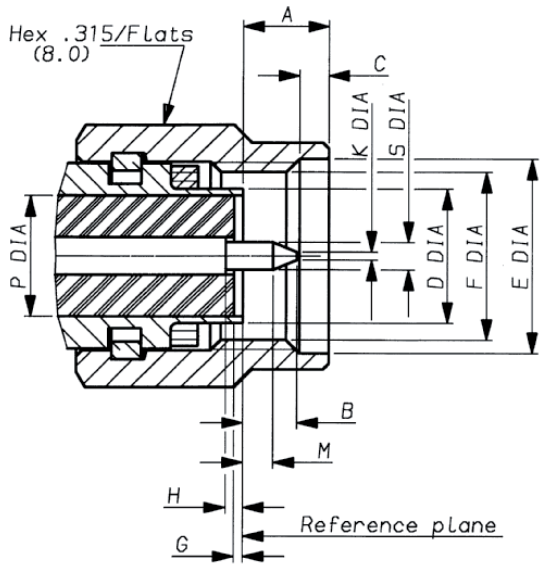
- MIL-C-39012
- IEC 169-1
- CECC 22110
- CECC 22111 - 801 to 808
- BS 9210 N006

## APPLICATIONS

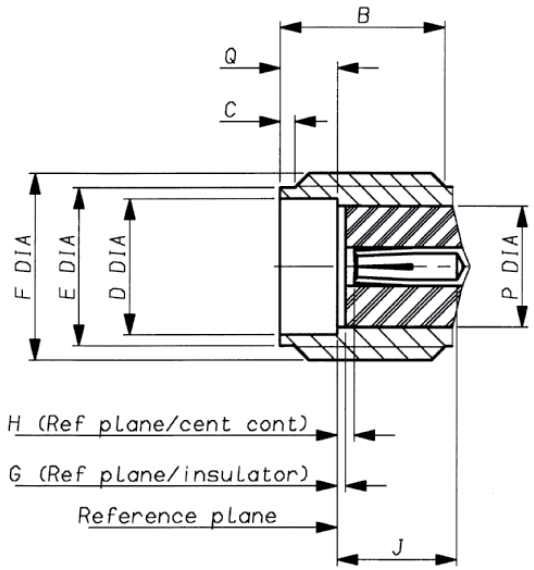
- Telecommunications
- Aeronautics
- Measurement and test systems
- General electronics

# INTERFACE

## 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

| Test/characteristics | MIL-C-39012 paragraph | Values/remarks | | | |
|---|---|---|---|---|---|

## GENERAL

| | | | |
|---|---|---|---|
| Impedance | | 50Ω | |
| Frequency range | | Semi-rigid cables | Standard models |
| | | DC - 18 GHz | DC - 12.4 GHz |
| Temperature range | | - 65°C + 105°C | - 65°C + 165°C |

## ELECTRICAL CHARACTERISTICS

| | | | | | |
|---|---|---|---|---|---|
| Insulation resistance | 3-11 | 5 000 MΩ mini. | | | |
| Contact resistance<br>• Outer conductor<br>• Inner conductor | 3-16 | Initial<br>3 mΩ<br>2 mΩ | | After test<br>4 mΩ<br>3 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<br>1.10 + .01F | 1.05 + .01F<br>1.10 + .01F | 1.15 + .02F<br>1.15 + .03F | 1.15 + .01F<br>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 I,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 $10^{-6}$mmHg (Torr) leakage rate < $10^{-8}$ atm/cm$^3$/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

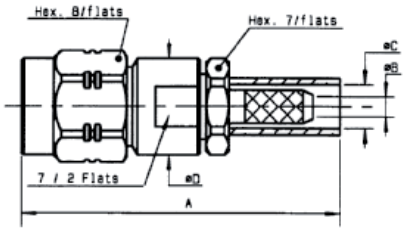



Fig. 1

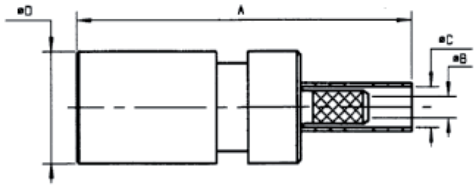



Fig. 2

| Cable group | Cable group dia. | Part number | Fig | Dimensions (mm) | | | | Finish | Note |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | D | | |
| RG178/RG196 | 2/50/S | R124 069 120 | 1 | 25 | 1 | 2.55 | 7.7 | BBR | Back nut / solder contact |
| | | R124 069 123 | | | | | | Gold | |
| RG174/RG316 | 2.6/50/S | R124 071 120 | 2 | 23.4 | 1.61 | 3.25 | | BBR | |
| | | **R124 071 123** | | | | | | Gold | |
| RD316 | 2.6/50/D | R124 072 220 | | | | 3.5 | | BBR | |
| RG58/RG141 | 5/50/S | R124 075 320 | | 26.4 | 3.11 | 5.41 | | | |
| | | R124 075 323 | | | | | | Gold | |
| RG142/RG223/RG400 | 5/50/D | R124 076 320 | | | | 5.8 | | BBR | |
| | | R124 076 323 | | | | | | Gold | |

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

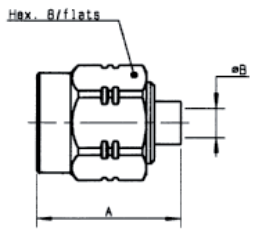



Fig. 1

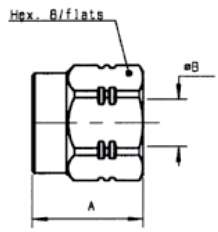



Fig. 2

| Cable group | Cable group dia. | Part number | Fig | Dimensions (mm) | | Finish | Note |
|---|---|---|---|---|---|---|---|
| | | | | A | B | | |
| RG405 | .085" | R124 052 003 | 1 | 11.1 | 2.25 | Gold | Non captivated center contact |
| RG402 | .141" | R124 054 003 | 2 | 8.5 | 3.65 | | Without center contact |
| | | R124 055 003 | 1 | 11.2 | | | With center contact |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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See page 8 and 9 for packaging information.

## RIGHT ANGLE PLUGS

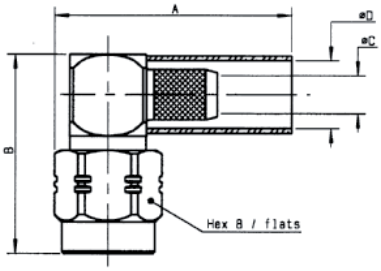



Fig. 1

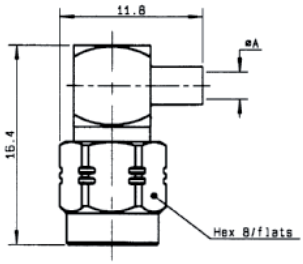



Fig. 2

| Cable group | Cable group dia. | Part number | Fig | Dimensions (mm) | | | | Finish | Note |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | D | | |
| RG174/RG316 | 2.6/50/S | R124 172 120 | 1 | 18 | 16.35 | 1.61 | 3.25 | BBR | Crimp type for flexible cable |
| | | **R124 172 123** | | | | | | Gold | |
| RD316 | 2.6/50/D | R124 174 120 | | | | | 3.5 | BBR | |
| | | R124 174 123 | | | | | | Gold | |
| RG58/RG141 | 5/50/S | R124 175 120 | | 21 | | 3.1 | 5.41 | BBR | |
| | | R124 175 123 | | | | | | Gold | |
| RG142/RG223/RG400 | 5/50/D | R124 176 120 | | | | | 5.8 | BBR | |
| | | **R124 176 123** | | | | | | Gold | |
| RG405 | .085" | R124 153 003 | 2 | 2.25 | | | | | Solder type for semi-rigid cable |
| RG402 | .141" | **R124 154 003** | | 3.65 | | | | | |

## STRAIGHT JACKS

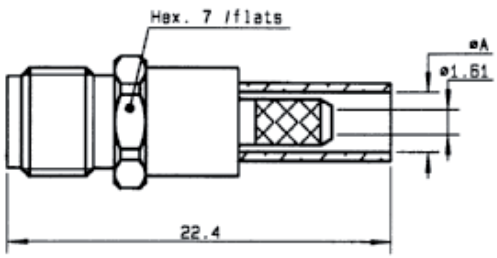



Fig. 1

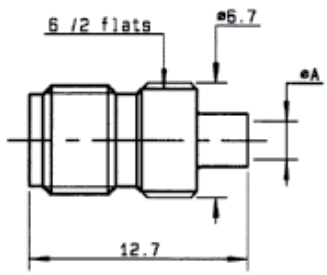



Fig. 2

| Cable group | Cable group dia. | Part number | Fig | Dimensions (mm) A | Finish | Note |
|---|---|---|---|---|---|---|
| RG174/RG316 | 2.6/50/S | R124 236 123 | 1 | 3.25 | Gold | Full crimp type for flexible cable |
| RD316 | 2.6/50/D | R124 233 123 | | 3.5 | | |
| RG405 | .085" | R124 222 003 | 2 | 2.25 | | Non captivated center contact solder type for semi-rigid cable |
| RG402 | .141" | R124 225 003 | | 3.65 | | |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

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

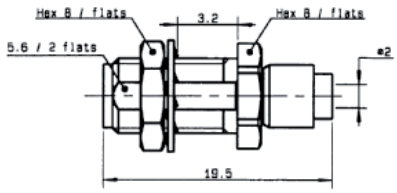



Fig. 1

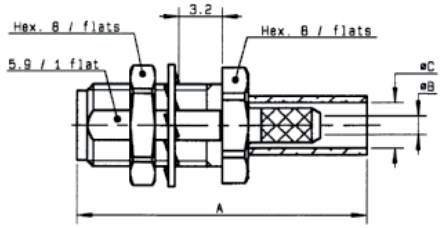
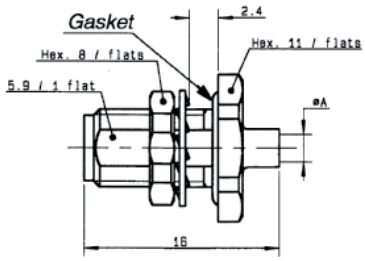



Fig. 2

| Cable group | Cable group dia. | Part number | Fig | Dimensions (mm) | | | Panel drilling | Finish | Note |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | | | |
| RG178/RG196 | 2/50/S | R124 310 023 | 1 | | | | P07 | Gold | Reverse crimping / solder contact |
| RG174/RG316 | 2.6/50/S | R124 312 120 | 2 | 22.4 | 1.61 | 3.25 | P05 | BBR | |
| | | **R124 312 123** | | | | | | Gold | |
| RG142/RG223/RG400 | 5/50/D | R124 315 123 | | 25.4 | 3.11 | 5.8 | | | |

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




| Cable group | Cable group dia. | Part number | Dimensions A (mm) | Panel drilling | Finish | Note |
|---|---|---|---|---|---|---|
| RG405 | .085" | **R124 326 003** | 2.25 | P05 | Gold | Non captivated center contact |
| RG402 | .141" | R124 325 003 | 3.65 | | | |

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

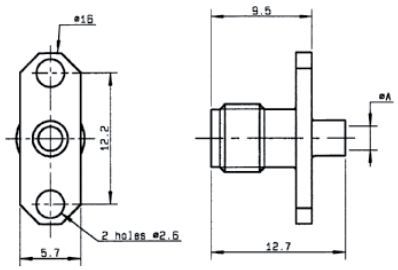



Fig. 1

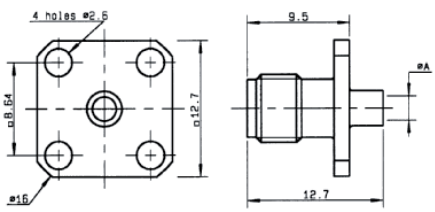


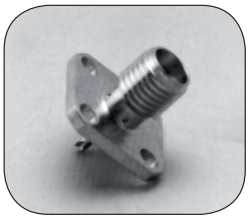

Fig. 2

| Cable group | Cable group dia. | Part number | Fig | Dimensions A (mm) | Panel drilling | Finish | Note |
|---|---|---|---|---|---|---|---|
| RG405 | .085" | R124 252 003 | 1 | 2.25 | P04 | Gold | Non captivated center contact |
| | | R124 256 003 | 2 | | P02 | | |
| RG402 | .141" | R124 251 003 | 1 | 3.65 | P04 | | |
| | | R124 255 003 | 2 | | P02 | | |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# SQUARE FLANGE FEMALE RECEPTACLES



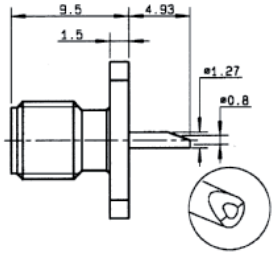



Fig. 1

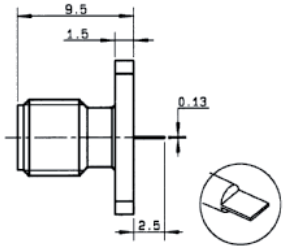



Fig. 2

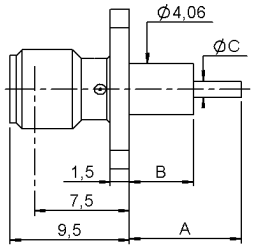



Fig. 3

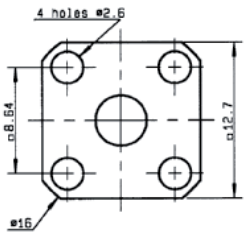
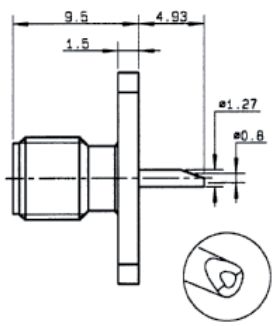



Fig. 1 to 3

| Part number | Fig | Dimensions (mm) | | | Panel drilling | Finish | Note |
|---|---|---|---|---|---|---|---|
| | | A | B | C | | | |
| R124 403 123 | 1 | | | | P01 | Gold | |
| R124 413 025 | 3 | 8.9 | 5.1 | 1.28 | | | 4 Indents |
| R124 414 003 | | 15.9 | 12.7 | 1.27 | | | |
| R124 415 273 | | 17.9 | 15 | | | | |
| R124 510 000 | 2 | | | | | BBR | |

# NARROW FLANGE FEMALE RECEPTACLES



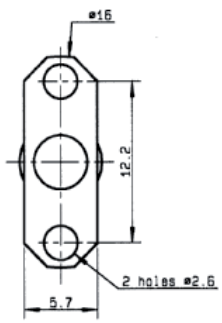




Fig. 1

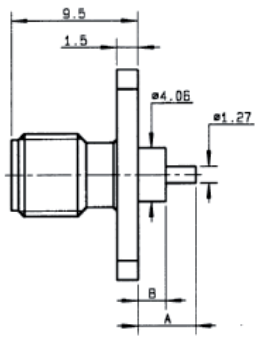


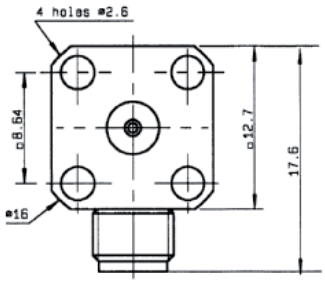

Fig. 2

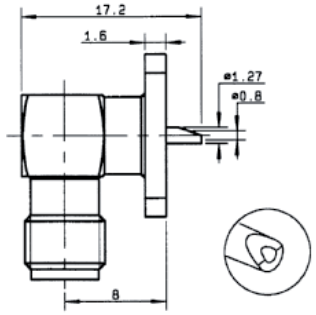
| Part number | Fig | Dimensions (mm) | | Panel drilling | Finish | Note |
|---|---|---|---|---|---|---|
| | | A | B | | | |
| R124 454 123 | 1 | | | P04 | Gold | |
| R124 464 000 | 2 | 15.9 | 12.7 | | BBR | 4 Indents |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# RECEPTACLES AND SWITCHES

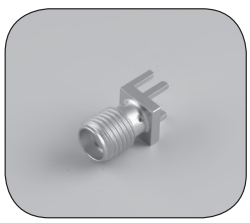
## RIGHT ANGLE SQUARE FLANGE FEMALE RECEPTACLES




| Part number | Panel drilling | Finish |
|---|---|---|
| R124 654 003 | P02 | Gold |

## STRAIGHT FEMALE PCB RECEPTACLES AND SWITCHES



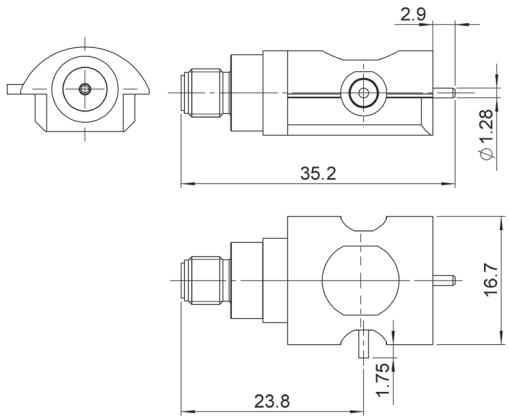



Fig. 1

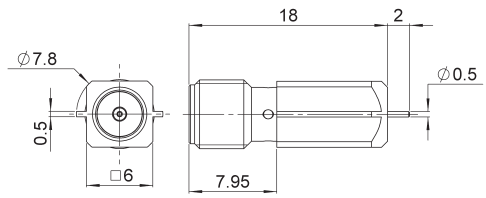



Fig. 2

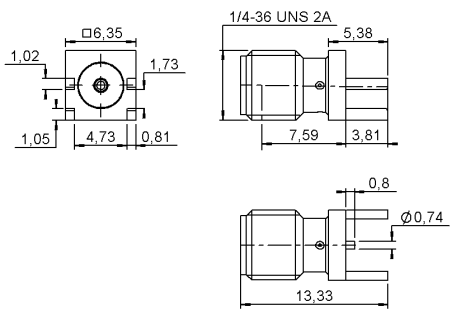



Fig. 3

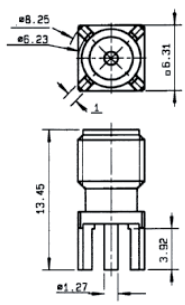



Fig. 4

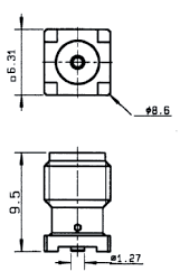


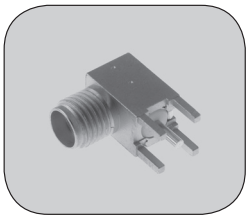

Fig. 5

| 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** | | | | Gold | |
| **R124 427 000** | 5 | | M01 | | Surface mount / bulkhead 100 pieces |
| **R124 427 800** | | | | | Surface mount / Tape and reel of 100 pieces |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# RIGHT ANGLE FEMALE PCB RECEPTACLES



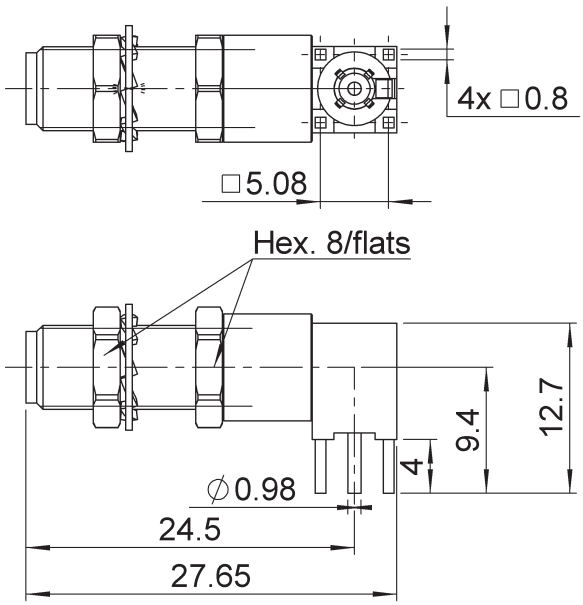



Fig. 1

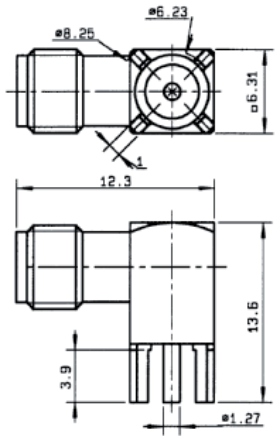



Fig. 2

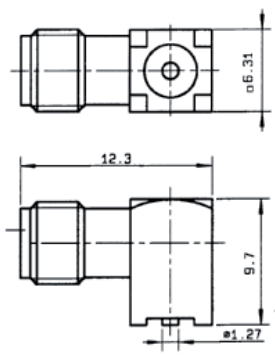



Fig. 3

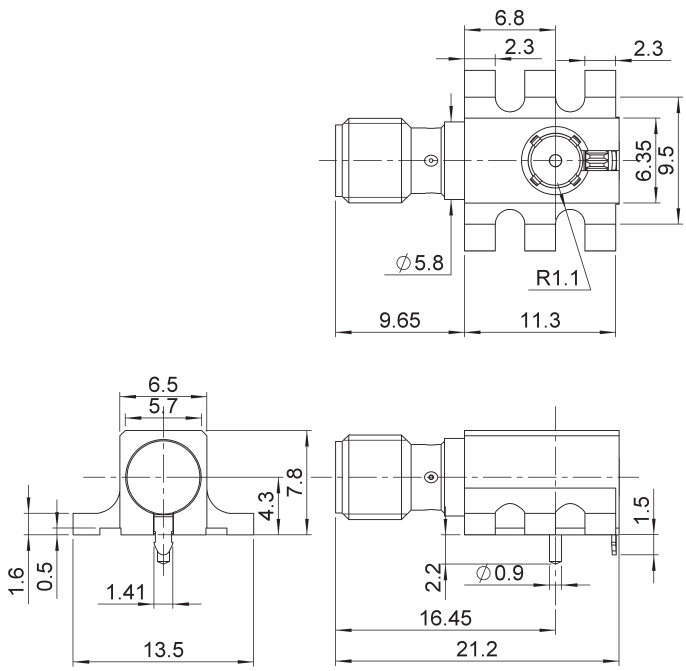



Fig. 4

| Part number | Fig | Panel drilling | Assembly instructions | Finish | Note |
|---|---|---|---|---|---|
| R124 667 143 | 1 | P08 | | Gold | Packaging: tray of 60 pieces |
| **R124 680 120** | 2 | P03 | | BBR | |
| **R124 680 123** | | | | Gold | |
| R124 681 000 | 3 | | M01 | | Surface mount / bulkhead 100 pieces |
| R124 682 820 | 4 | | M04 | GBR | Packaging: 250 pieces |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# ADAPTERS

## IN SERIES ADAPTERS

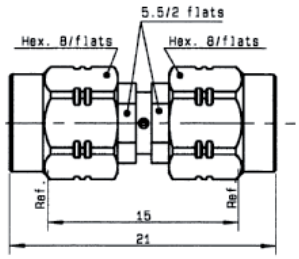



Fig. 1

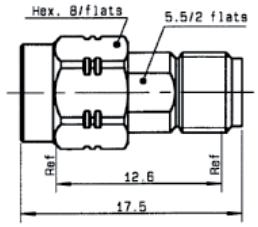



Fig. 2

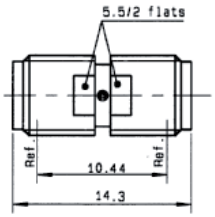



Fig. 3

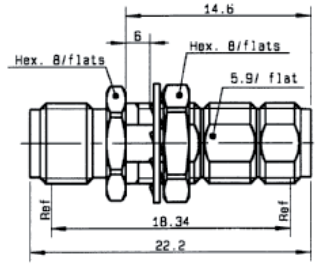
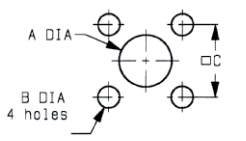



Fig. 4

| Part number | Fig | Panel drilling | Finish | Note |
|---|---|---|---|---|
| R124 703 003 | 1 | | Gold | Plug to plug |
| R124 704 003 | 2 | | | Plug to jack |
| R124 705 003 | 3 | | | Jack to jack |
| R124 720 003 | 4 | P05 | | |

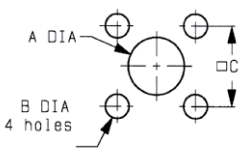
# PANEL DRILLING

### P01



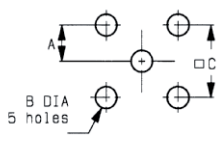

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 4.2 | 4.1 | 0.165 | 0.161 |
| B | 2.7 | 2.6 | 0.106 | 0.102 |
| C | 8.69 | 8.59 | 0.342 | 0.338 |

### P02



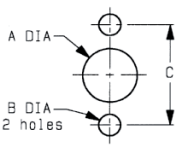

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 6.6 | 6.5 | 0.26 | 0.256 |
| B | 2.7 | 2.6 | 0.106 | 0.102 |
| C | 8.69 | 8.59 | 0.342 | 0.338 |

### P03



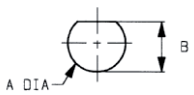

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 2.59 | 2.49 | 0.102 | 0.098 |
| B | 1.7 | 1.6 | 0.067 | 0.063 |
| C | 5.13 | 5.03 | 0.202 | 0.198 |

### P04



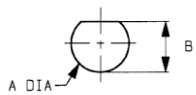

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 4.2 | 4.1 | 0.165 | 0.161 |
| B | 2.7 | 2.6 | 0.106 | 0.102 |
| C | 12.25 | 12.15 | 0.482 | 0.478 |

### P05



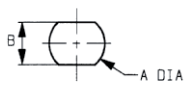

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 6.5 | 6.4 | 0.256 | 0.252 |
| B | 6.15 | 6 | 0.242 | 0.236 |

### P06



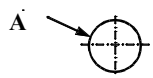

| | MM | | INCH | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 5 | 4.9 | 0.197 | 0.193 |
| B | 4.7 | 4.55 | 0.185 | 0.179 |

### P07




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

### P08



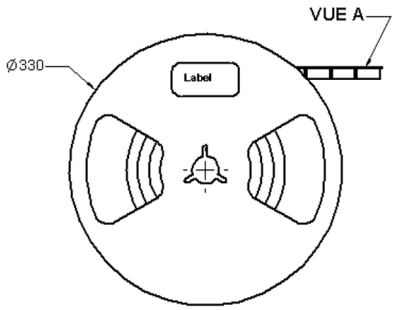

| | mm | |
|---|---|---|
| | Maxi | mini |
| A | 6.40 | 6.35 |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# PACKAGING

| Part number | Fig |
|---|---|
| R124 422 001 | 1 |
| R124 423 833 | 2 |
| R124 427 800 | 3 |



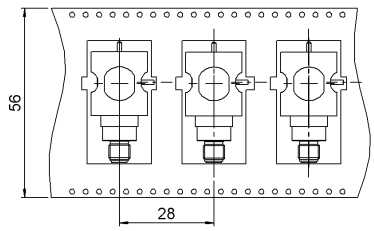




Fig. 1

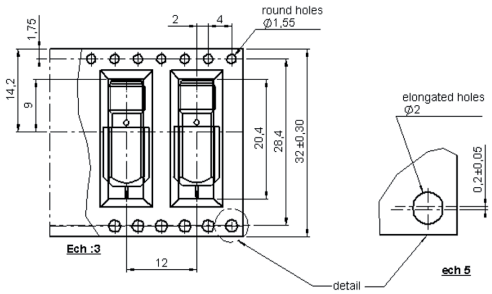



Fig. 2

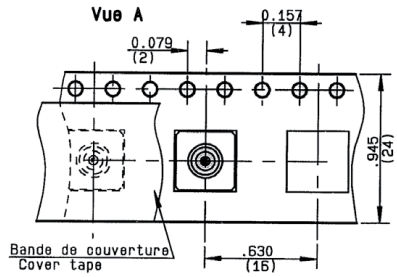


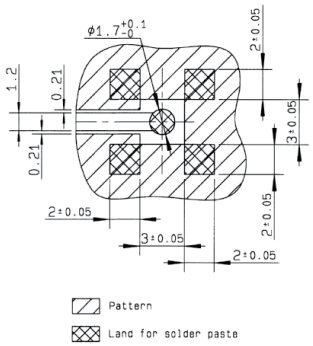

Fig. 3

# ASSEMBLY INSTRUCTIONS

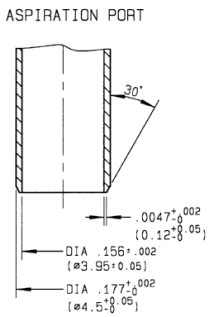
## M01

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

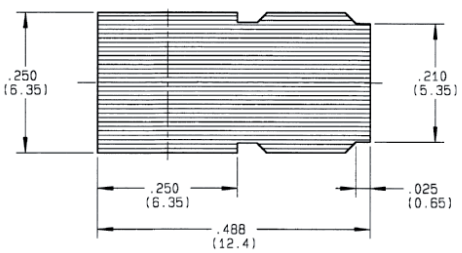
## SOLDERING PATTERN

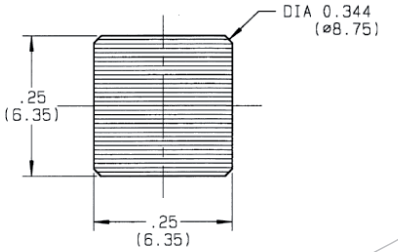



**COPLANAR LINE**
Pattern and signal are on the same side.
Thickness of PCB: 1.6 mm.
The PCB material is made of epoxy resin of glass fabrics bacs (Er = 4.8).
The solder resist should be printed except for the land pattern on the PCB.




## VIDEO SHADOWS

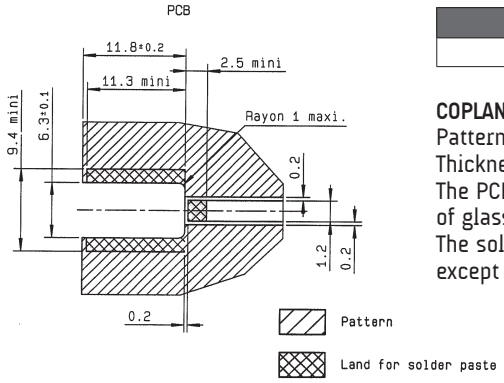


# ASSEMBLY INSTRUCTIONS

## M02

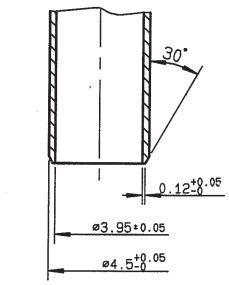
### SOLDERING PATTERN



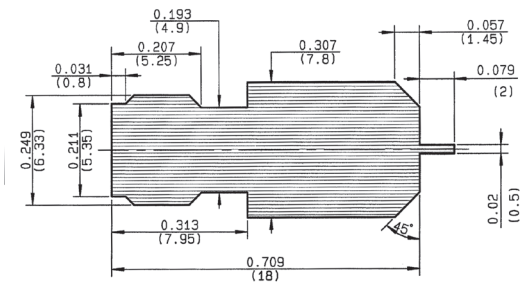

| Part number |
|---|
| R124 423 033 |

**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. (Er = 4.8).
The solder resist should be printed except for the land pattern on the PCB.

ASPIRATION PORT

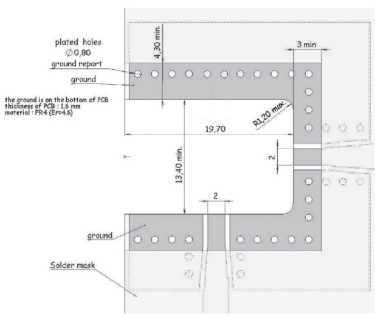



### VIDEO SHADOW



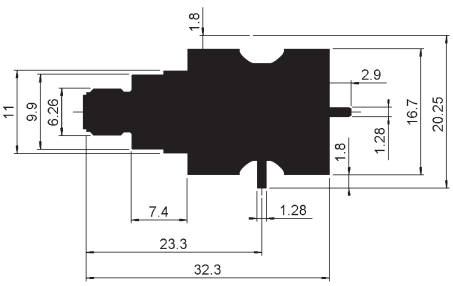

## M03

### PCB FOR SMA SWITCH



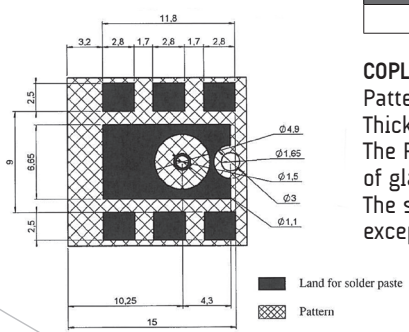

| Part number |
|---|
| R124 422 001 |

### VIDEO SHADOW




## M04

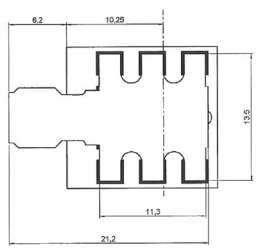
### SOLDERING PATTERN




| Part number |
|---|
| R124 682 820 |

**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. (Er = 4.8).
The solder resist should be printed except for the land pattern on the PCB.

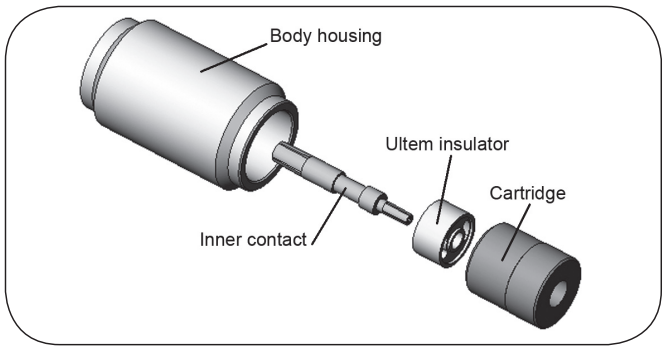
### VIDEO SHADOW



SMA 2.9 series is compatible with K® series, 2.92 mm, SMA and SMA 3.5 series and has a shortened male center contact, ensuring a non destructive mating.
Radiall offers four product variations for SMA 2.9 to meet all your needs with two different designs. The standard design is using our "ULTEM" insulator technology and is qualified up to 40 GHz. The high frequency design is using our "KAPTON" insulator technology and is qualified up to 46 GHz. All versions feature the same electrical high performance and are available in a variety of configurations.

## • SMA 2.9 FOR GENERAL USE, "ULTEM" TECHNOLOGY, DC-40 GHz

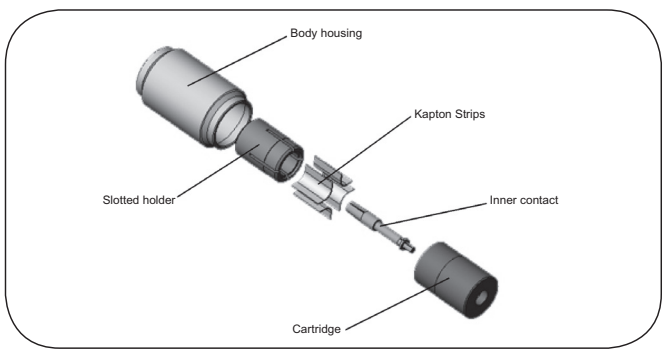
This robust design is suitable for most applications. The ULTEM insulator provides a high ingress protection level against chemicals, fluids or dust and is well suited for high frequency aerospace and military equipment.




3D view of SMA 2.9 "ULTEM" design

## • SMA 2.9 FOR TEST LABORATORY USE, "KAPTON" TECHNOLOGY, DC-46 GHz

The KAPTON insulator design is excellent for high frequency measurements in test laboratories. KAPTON is also very stable with temperature. Radiall SMA 2.9 adapters using KAPTON are specified DC-46 GHz and operate within a large temperature range - 65°C/+200°C.




3D view of SMA 2.9 "KAPTON" design

## • SMA 2.9 FOR SPACE APPLICATIONS

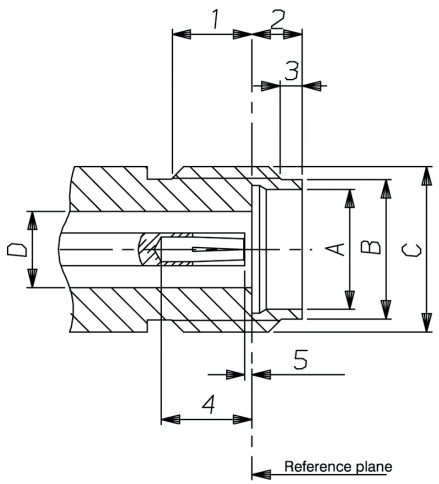
Radiall is a certified manufacturer of connectors for space applications according to ESA specifications. A range of space qualified SMA 2.9 connectors using the ULTEM insulator technology is available. Please consult us.

## • SMA 2.9 FOR HARSH ENVIRONMENT

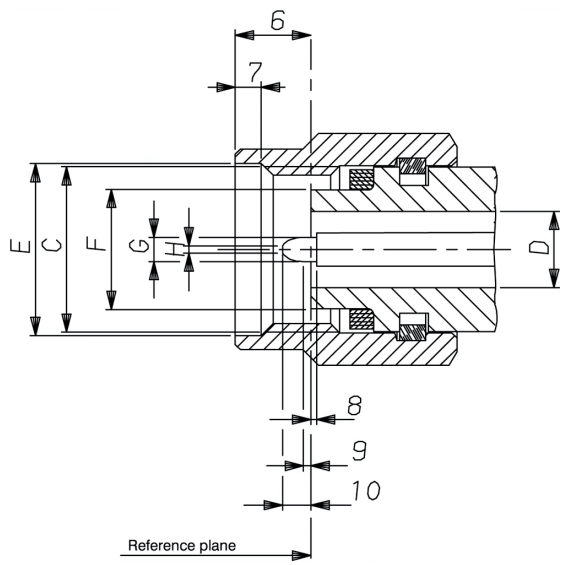
Radiall offers as well a range of cable assemblies equipped with specific connectors for applications in harsh environment.
The connectors are made of high grade stainless steel 316L ultra resistant to corrosion and wear. Please consult us.

# INTERFACE

## JACK




## PLUG




| Letter or Figure | mm | | inch | |
|---|---|---|---|---|
| | min. | max. | min. | max. |
| 1 | 2.87 | 3.27 | .113 | .129 |
| 2 | 1.88 | 1.98 | .074 | .078 |
| 3 | 0.65 | 0.95 | .026 | .037 |
| 4 | 2.40 | 2.68 | .094 | .105 |
| 5 | | 0.08 | | .003 |
| A | 4.60 | 4.63 | .181 | .182 |
| B | 5.30 | 5.35 | .209 | .211 |
| C | 1/4 - 36 UNS 2A | | | |
| D | 2.90 | 2.94 | .114 | .116 |

| Letter or Figure | mm | | inch | |
|---|---|---|---|---|
| | min. | max. | min. | max. |
| 6 | 2.63 | 3.25 | .103 | .128 |
| 7 | 0.90 | 1.10 | .035 | .043 |
| 8 | | 0.08 | | .003 |
| 9 | 0.49 | 0.78 | .019 | .031 |
| 10 | 1.22 | 1.40 | .048 | .055 |
| C | 1/4 - 36 UNS 2B | | | |
| D | 2.90 | 2.94 | .114 | .116 |
| E | 6.60 | 6.70 | .260 | .264 |
| F | 4.55 | 4.58 | .179 | .180 |
| G | 0.92 | 0.94 | .036 | .037 |
| H | 0.20 | 0.34 | .008 | .013 |

| Test/characteristics | Values/remarks | |
|---|---|---|
| | ULTEM technology | KAPTON technology |

## ELECTRICAL CHARACTERISTICS

| | | |
|---|---|---|
| Impedance | 50Ω | |
| Frequency range | DC - 40 GHz | DC - 46 GHz |
| V.S.W.R. | < 1.05 + 0.005 F (GHz) | |
| Insertion loss | 0.03 √ F (GHz) | |
| RF leakage | – 90 dB max | |
| Insulation resistance | ≥ 5000 mΩ | |
| Contact resistance<br>• outer conductor<br>• inner conductor | ≤ 2 mΩ<br>straight ≤ 3 mΩ<br>hermetic ≤ 7 mΩ | |
| Voltage rating | 350 V(RMS) | |
| Dielectric withstanding voltage | 750 V(RMS) | |

## MECHANICAL CHARACTERISTICS

| | |
|---|---|
| Mechanical endurance | 500 matings |
| Force to engage and disengage | ≤ 23 N cm (2 in/lbs) |
| Mating torque | 80 to 115 N cm (7 to 10 in/lbs) |
| Coupling nut retention force | ≤ 272 N (61 lbf) |
| Cable retention force • .085"<br>• .141" | 135 N (30 lbf)<br>270 N (60 lbf) |
| Contact captivation | 28N (6.3 lbf) |

## ENVIRONMENTAL CHARACTERISTICS

| | | |
|---|---|---|
| Temperature range | -65°C / + 165°C | -65°C / +200°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, 5 % | |
| Vibration | MIL STD 202, method 204, condition D, 20g | |
| Shock | MIL STD 202, method 213, condition I, 100g | |
| Moisture resistance | MIL STD 202, method 106 | |

## MATERIALS AND PLATING

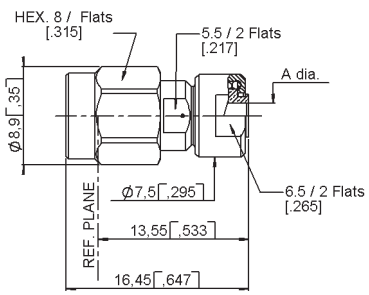
| | Material | Plating |
|---|---|---|
| Bodies | Stainless steel | Passivated |
| Center contacts | Beryllium copper | Gold plated |
| Gaskets | Silicone rubber | |
| Insulators | Ultem (Ultem technology)<br>Kapton (Kapton technology) | |

Packaging: unit

All dimensions are given in mm (inch)

# PLUGS

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

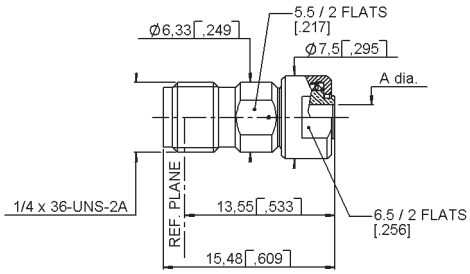



| Cable group | Cable group dia. | Part number | Insulator | Dimension A (mm) | Captive center contact | Frequency range |
|---|---|---|---|---|---|---|
| RG405 | .085" microporous | R127 800 001 | ULTEM | 2.25 | yes | DC - 40 GHz |
| RG402 | .141" microporous | R127 800 101 | | 3.66 | | |
| RG405 | .085" microporous | R127 052 001 | KAPTON | 2.2 | | DC - 46 GHz |
| | .116" microporous | R127 055 001 | | 3.0 | | |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

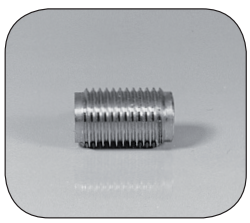
# JACKS AND RECEPTACLES

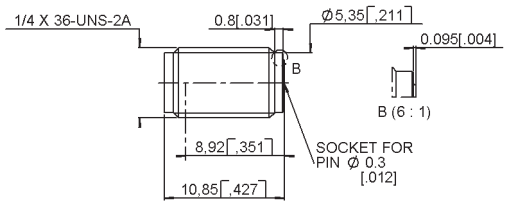
## STRAIGHT JACKS, SOLDER TYPE FOR MICROPOROUS SEMI-RIGID CABLES




| Cable group | Cable group dia. | Part number | Insulator | Dimension A (mm) | Captive center contact | Frequency range |
|---|---|---|---|---|---|---|
| RG405 | .085" microporous | R127 820 001 | ULTEM | 2.25 | yes | DC - 40 GHz |

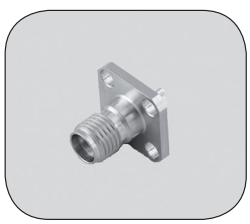
## UNIVERSAL SCREW-ON FEMALE RECEPTACLES






| Part number | Insulator | Frequency range | Used with glass bead | For pin diameters |
|---|---|---|---|---|
| R127 841 001 | ULTEM | DC - 40 GHz | R280 760 040 | 0.3 (.012) |
| R127 601 001 | KAPTON | DC - 46 GHz | | |

## FLANGE FEMALE RECEPTACLES



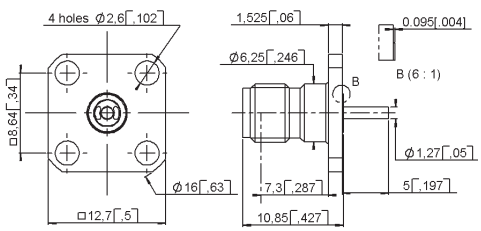



Fig. 1

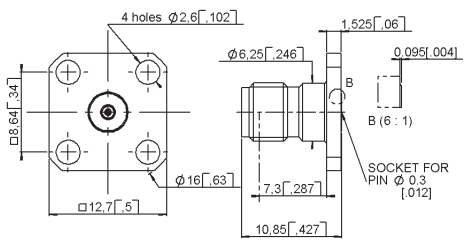



Fig. 2

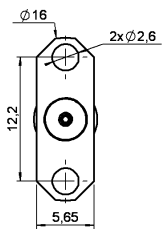


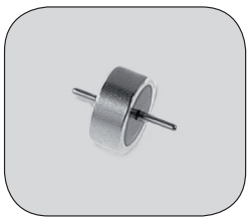

Fig. 3

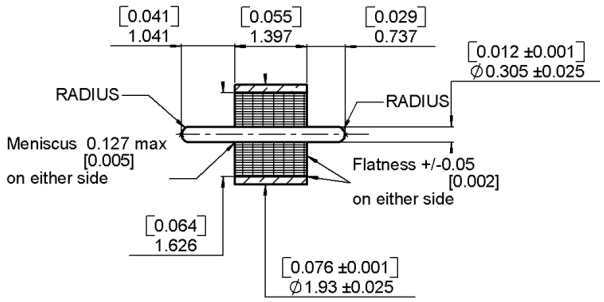
| Part number | Fig | Insulator | Captive center contact | Panel drilling | Used with glass bead | Note |
|---|---|---|---|---|---|---|
| R127 840 021 | 1 | ULTEM | yes | P02 | N/A | with cylindrical center contact |
| R127 842 001 | 2 | | | P01 | R280 760 040 | For pin dia 0.3 (.012) |
| R127 631 001 | | KAPTON | | | | |
| R127 632 001 | 3 | | | | | |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

## GLASS BEAD






| Part number | Packaging |
|---|---|
| R280 760 040 | 100 |

## IN SERIES ADAPTERS

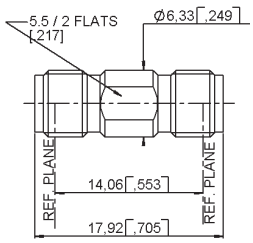



**Fig. 1**

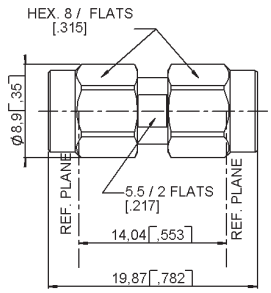



**Fig. 2**

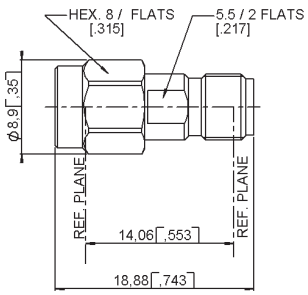



**Fig. 3**

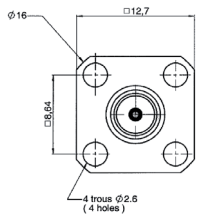



**Fig. 4**

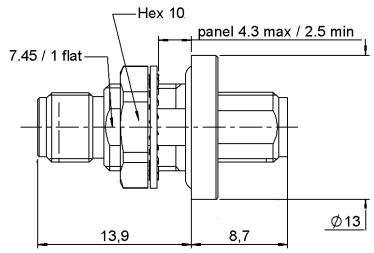


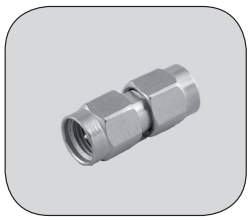

**Fig. 5**

| Part number | Fig | Insulator | Note | Frequency range |
|---|---|---|---|---|
| R127 703 001 | 2 | KAPTON | Male-male | DC - 46 GHz |
| R127 704 001 | 3 | | Female-male | |
| R127 705 001 | 1 | | Female-female | |
| R127 712 001 | 4 | | Female-female - 4 hole flange | |
| R127 753 000 | 5 | | Female-female - bulkhead hermetic | |
| R127 870 001 | 1 | ULTEM | Female-female | DC - 40 GHz |
| R127 872 001 | 3 | | Female-male | |

To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.

# BETWEEN SERIES ADAPTERS

## BETWEEN SERIES ADAPTERS



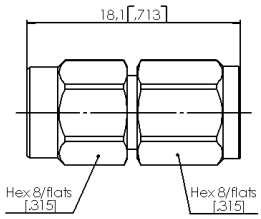



Fig. 1

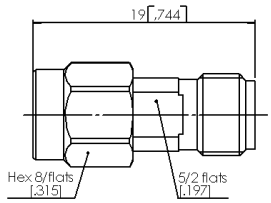



Fig. 2

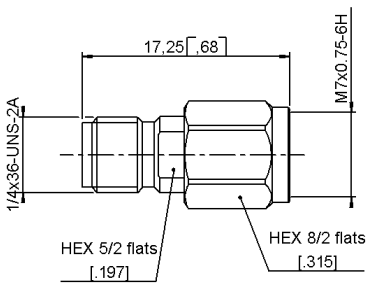



Fig. 3

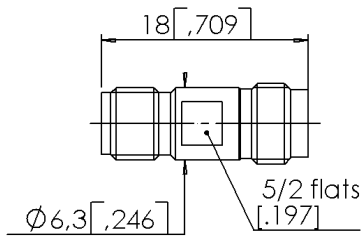


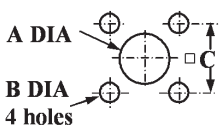

Fig. 4

| Part number | Fig | Insulator | Note | Frequency range |
|---|---|---|---|---|
| R191 970 061 | 1 | KAPTON | SMA 2.9 Male - SMA 2.4 Male | DC - 46 GHz |
| R191 970 071 | 2 | | SMA 2.9 Male - SMA 2.4 Female | |
| R191 970 081 | 3 | | SMA 2.9 Female - SMA 2.4 Male | |
| R191 970 091 | 4 | | SMA 2.9 Female - SMA 2.4 Female | |

Remark: these adapters are still using the previous technology (4 kapton strips) allowing to reach 46 GHz within a temperature range of – 65 °C/+ 200 °C.

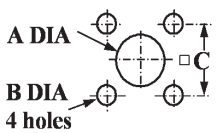
# PANEL DRILLING

### P01




| | mm | | inch | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 1.63 | 1.60 | .064 | .063 |
| B | 2.70 | 2.60 | .106 | .102 |
| C | 8.69 | 8.59 | .342 | .338 |

### P02




| | mm | | inch | |
|---|---|---|---|---|
| | maxi | mini | maxi | mini |
| A | 2.95 | 2.91 | .116 | .115 |
| B | 2.7 | 2.6 | .106 | .102 |
| C | 8.69 | 8.59 | .342 | .338 |



To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
**Bold** part numbers represent products typically in stock & available for immediate shipment.
See page 8 and 9 for packaging information.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