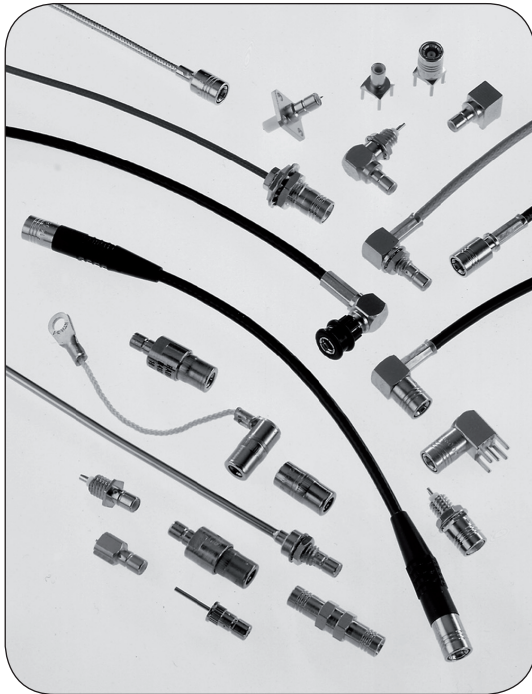


## SMB / SMB Lock / SMC series

R114 / R115 / R116 / R117 / R112



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Jacks .....	7-10
Bulkhead jacks .....	7-11
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Adapters .....	7-15
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Interface .....	7-16
Characteristics .....	7-17
Plugs .....	7-17
<b>SMB Limited detent (SMB-A)</b>	
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Introduction .....	7-21
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Characteristics .....	7-22
Plugs .....	7-23
Jacks .....	7-23 to 7-24
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Panel drilling .....	7-25



50Ω

DC - 4 GHz

**GENERAL**

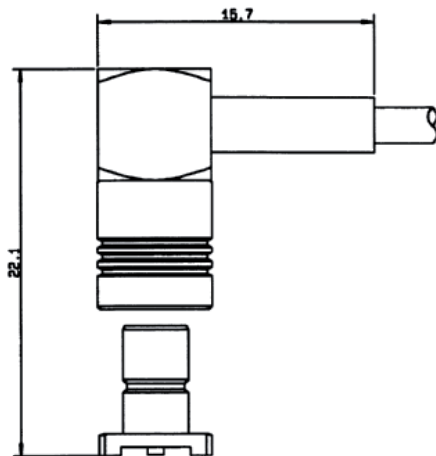
- Subminiature coaxial connectors
- Snap-on coupling
- Plugs have female contacts
- Jacks have male contacts
- Low weight and reduced outline dimensions
- Captive contact (except contrary specification)

**APPLICABLE STANDARDS**

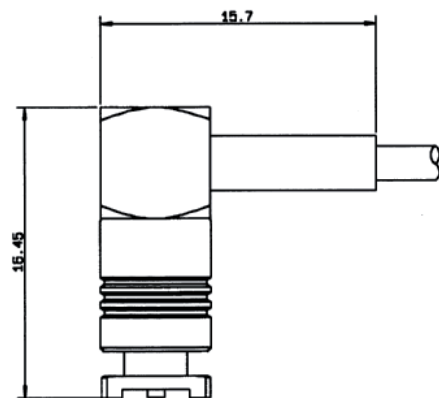
- SMB series MIL-C-39012  
MIL-C-39012/67-72
- IEC 169-10
- CECC 22130
- BS 9210 N0007

**APPLICATIONS**

- Mobile communication systems
- Civil and military telecommunications
- Aeronautics
- Automotive



Unmated

**PROFILE**

Mated

The SMB snap-on subminiature coaxial connectors provide a fast and reliable connection for high density packaging for applications up to 4 GHz.

Radiall offers a very large range of SMB connectors, including cable plugs and jacks with bulkhead and panel mount configurations, bulkhead and panel mount receptacles; through hole, SMT and edge card receptacles and in-series and between series adapters.

The SMB series also features versions with lower mating forces than standard. Four types of interconnection mechanisms are available:

- **SMB: standard** snap-on connection

The design permits quick engagement and disengagement.

- **SMB limited detent (SMB-A):** snap-on connection with **low mating force**

The design permits quick engagement and disengagement and is suitable for printed circuit boards. Radiall offers a range of PCB and bulkhead receptacles with female center contact.

The SMB-A receptacles are completely intermateable with standard SMB jacks.

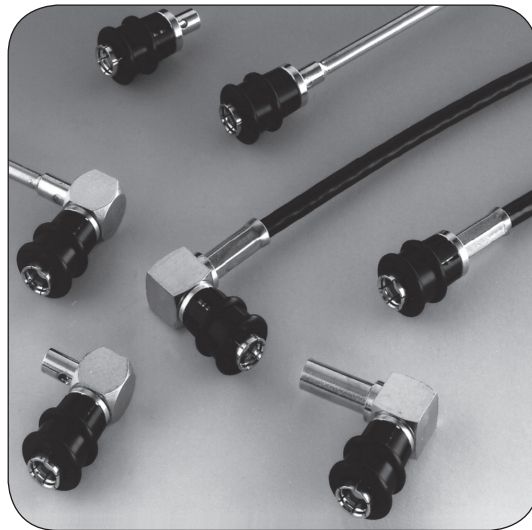
- **SMB slide-on (SUBGLIS):** slide-on connection

The design is suitable for back plane and blind mate applications. In this case, we recommend the association of a mobile connector (floating jack / receptacle) with a fixed connector (panel plug / jack, receptacle).

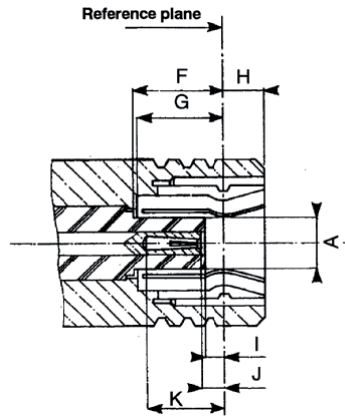
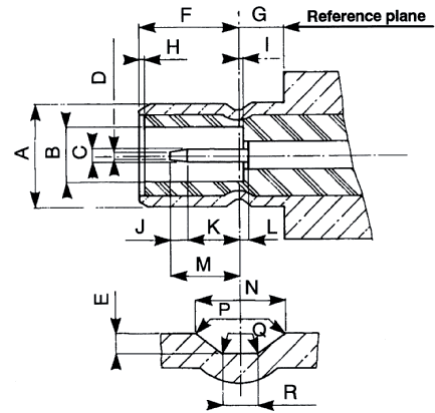
The SUBGLIS connectors are completely intermateable with standard SMB and SMB-A connectors and for that, they can be used for test applications.

- **SMB Lock:**

Plugs (with female center contact) have a coupling nut allowing a reliable lock-on connection (50 N min). This range allows a visual control of the locking system.



These four types of SMB connectors have the same electrical performances.

**PLUG** (with female contact)**JACK** (with male contact)

Letter	mm		inch	
	min.	max.	min.	max.
A DIA		2.06		.081
F	3.58		.141	
G	3.58		.141	
H		1.63		.064
I	0.18		.007	
J	0.18	0.94	.007	.037
K	2.97		.117	

Letter	mm		inch	
	min.	max.	min.	max.
A DIA		3.71		.146
B DIA	2.08		.082	
C DIA	0.48	0.53	.019	.021
D DIA		0.25		.010
E	0.15	0.25	.006	.010
F	3.33	3.58	.131	.141
G	1.65		.065	
I		0.18		.007
J	0.25		.010	
K	1.32		.052	
L		0.18		.007
M		2.97		.117
N	0.69	0.94	.027	.037
P	0.05	0.15	.002	.006
Q		0.13		.005
R	0.28	0.38	.011	.015

CLAMP TYPE CONNECTORS: R 114 xxx 000 = braid retention with cylindrical gasket

R 114 xxx 133 = braid retention with V groove gasket

Test/characteristics	MIL-C-39012 A	Values/remarks
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## ELECTRICAL CHARACTERISTICS

Impedance		50Ω
Frequency range		DC - 4 GHz
V.S.W.R. (typ.)	Frequency	1 GHz      2.5 GHz      4 GHz
Straight models      cable group:	.085"	1.12      1.22      1.33
	2	1.10      1.22      1.33
Right angle models	2.6	1.12      1.22      1.35
	.085"	1.10      1.18      1.26
	2	1.10      1.20      1.25
Insertion loss (typ.) dB	3-27	
Straight models      cable group:	.085"	0.05      0.07      0.15
	2	0.05      0.10      0.25
Right angle models	2.6	0.05      0.05      0.05
	.085"	0.05      0.07      0.12
RF leakage	3-26	-55 dB min from 2 to 3 GHz
Insulation resistance	3-11	1000 MΩ min
Contact resistance	3-16	Initial      After test
• center contact (mΩ)		6      8
• outer contact (mΩ)		1      1.5
Working voltage		
• cable group		2/50      2.6/50
• at sea level		250 V rms      335 V rms
• at 70000 ft (21000 m)		60 V rms      85 V rms
Dielectric withstanding voltage		
• cable group	3-17	2/50      2.6/50
• at sea level		750 V rms      1000 V rms
• at 70000 ft (21000 m)		185 V rms      250 V rms
RF withstanding voltage (5 MHz sine wave)		
• cable group	3-23	2/50      2.6/50
• at sea level		500 V rms      700 V rms

## MECHANICAL CHARACTERISTICS

Durability	3-15	500 matings
Mating / unmating	3-5-1	Axial force: 62 N max (14 Lbf)
Cabling retention force      cable group:		
• 2/50	3-24	58 N (13Lbf)
• 2.6/50		110 N (25Lbf)
Center contact retention		Axial: 10 N (2.25 Lbf)

## ENVIRONMENTAL CHARACTERISTICS

Temperature range		
standard models		-65°C / + 165°C
hermetic sealed models		-65°C / +165°C
models for semi-rigid cables		-65°C / +105°C
Combined climate tests		MIL-STD-202, method 102, condition C
Thermal shock	3-20	MIL-STD-202, method 107, condition B
High temperature endurance		MIL-STD-202, method 108
Corrosion (salt spray)	3-13	MIL-STD-202, method 101, condition B, 5%
Vibrations	3-18	MIL-STD-202, method 204, condition B, 15g
Shocks	3-19	MIL-STD-202, method 213, condition B, 75g
Low pressure	3-22	MIL-STD-202, method 105, condition C
Hermetic seal		Applied vacuum 10 <sup>-6</sup> mm of Hg (Torrs) Leakage rate < 10 <sup>-6</sup> atm/cm <sup>3</sup> /s

## MATERIALS AND PLATING

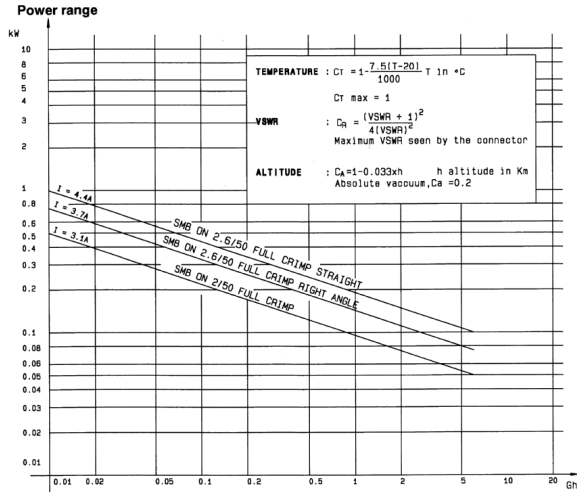
	Material	Plating
Body and center pin contact	Half hard brass as per QQ-B-626	Gold or nickel (Body)
Center socket contact	Beryllium copper as per QQ-C-530	Gold (Center contact)
Ferrules	Brass	
Insulators	PTFE teflon	
Gaskets	Silicone elastomer	

Standard packaging: 100 pieces.

All dimensions are given in mm

# CHARACTERISTICS

## POWER RATING



## PLUGS

### STRAIGHT PLUGS CRIMP TYPE FOR FLEXIBLE CABLES

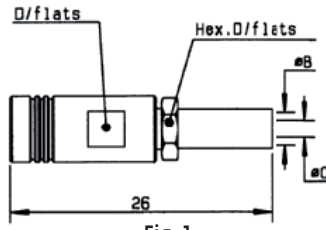


Fig. 1

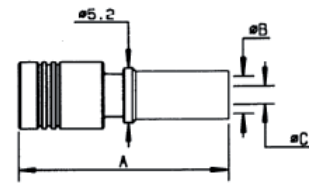


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm				Captive center contact	Finish	Note
				A	B	C	D			
RG178/RG196	2/50/S	R114 073 000	1		2.55	0.95	5	yes	Gold	
RG174/RG316/RG179	2.6/50+75/S	R114 075 000								
		R114 082 000	2	19.8	3.25	1.7				full crimp
RD316	2.6/50/D	R114 083 000			18.8					

### STRAIGHT PLUGS

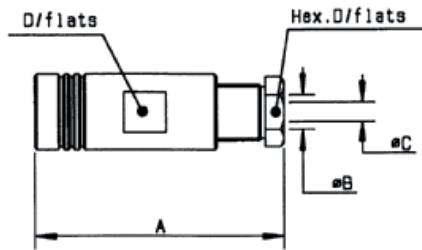


Fig. 1

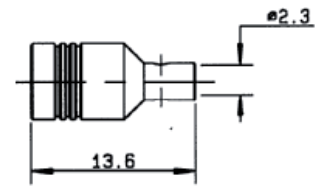


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm				Captive center contact	Finish	Note
				A	B	C	D			
RG178/RG196	2/50/S	R114 003 000	1	21.8	2.2	0.95	5	yes	Gold	clamp type for flexible cable
RG174/RG316/RG179	2.6/50+75/S	R114 005 000			3	1.7				
RG405	.085"	R114 053 000	2					no		solder type for semi rigid cable



## RIGHT ANGLE PLUGS CRIMP TYPE FOR FLEXIBLE CABLES

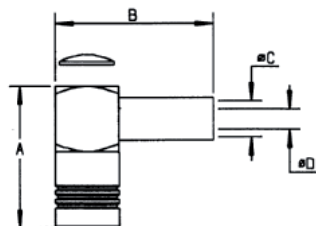


Fig. 1

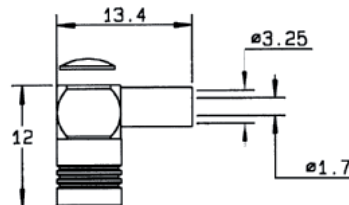


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm				Captive center contact	Finish	Note
				A	B	C	D			
RG178/RG196	2/50/S	<b>R114 183 000</b>	1	13.8	15.7	2.55	0.95	yes	Gold	
RG174/RG316/RG179	2.6/50+75/S	<b>R114 185 000</b>	2							short version
		<b>R114 186 000</b>	1	13.8	15.7		1.7			
		<b>R114 186 100</b>			15.3	3.25	1.72			
		<b>R114 187 000</b>		15.1	15.7		1.7			full crimp
RD316	2.6/50/D	<b>R114 182 000</b>		13.8						
BT3002	3.6/75/D	<b>R114 191 300</b>		13.7	18.3	4.4	2.1			

## RIGHT ANGLE PLUGS

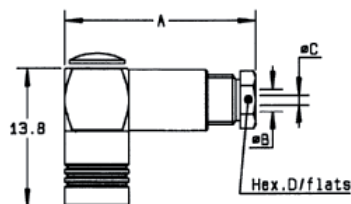


Fig. 1

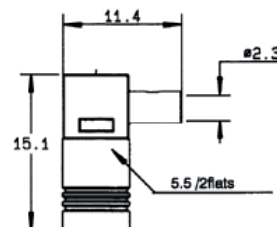


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm				Captive center contact	Finish	Note
				A	B	C	D			
RG178/RG196	2/50/S	<b>R114 163 000</b>	1	19	2.2	1	5	yes	Gold	clamp type for flexible cables
	2.2/50/D	<b>R114 163 420</b>		16.7	2.5		6			
RG174/RG316/RG179	2.6/50+75/S	<b>R114 165 000</b>		19	3	1.7	5			cable bending required solder type for semi rigid cable
RG405	.085"	<b>R114 169 000</b>	2							

## STRAIGHT JACKS CRIMP TYPE FOR FLEXIBLE CABLES

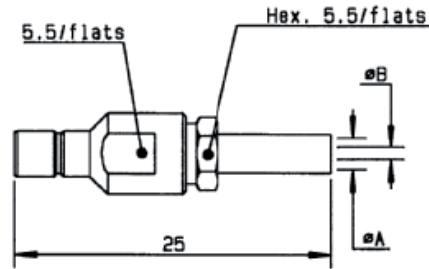


Fig. 1

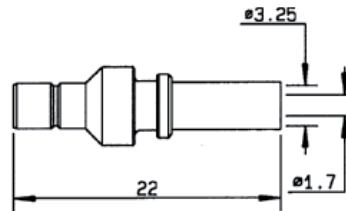
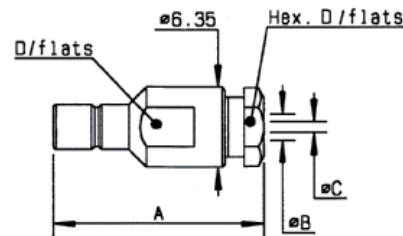


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm			Captive center contact	Finish	Note
				A	B	C			
RG178/RG196	2/50/S	R114 237 000	1	2.55	0.95		yes	Gold	
RG174/RG316/RG179	2.6/50+75/S	<b>R114 238 000</b>	2						full crimp
		R114 239 000	1	3.25	1.7				

## STRAIGHT JACKS CLAMP TYPE FOR FLEXIBLE CABLES



Cable group	Cable group dia.	Part number	Dimensions mm				Captive center contact	Finish
			A	B	C	D		
RG178/RG196	2/50/S	R114 203 000	21	2.2	1	5	yes	Gold
RG174/RG316/RG179	2.6/50+75/S	<b>R114 205 000</b>		3	1.7			

## STRAIGHT BULKHEAD JACKS CRIMP TYPE FOR FLEXIBLE CABLES

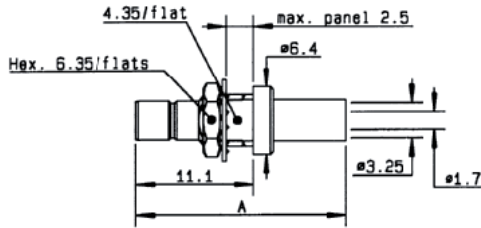


Fig. 1

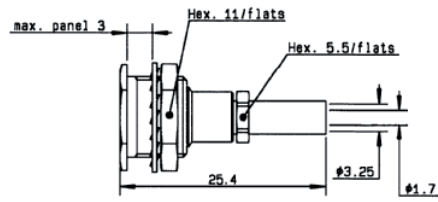


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm		Captive center contact	Panel drilling	Finish	Note
				A	B				
RG174/RG316/RG179	2.6/50+75/S	<b>R114 313 000</b>	1	22		yes	P08	Gold	back mount/full crimp
		<b>R114 316 000</b>	2				P07		

## STRAIGHT BULKHEAD JACKS CLAMP TYPE FOR FLEXIBLE CABLES

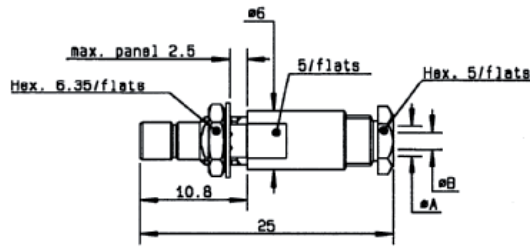
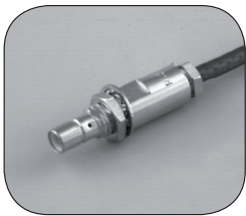


Fig. 1

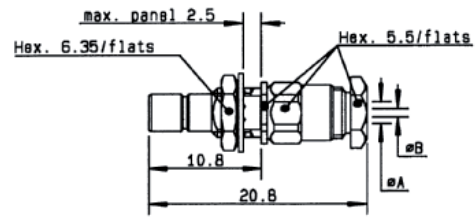
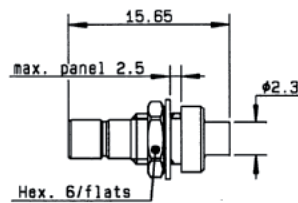


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm		Captive center contact	Panel drilling	Finish	Note
				A	B				
RG178/RG196	2/50/S	<b>R114 303 000</b>	1	2.2	1	yes	P08	Gold	conical braid clamp
		<b>R114 303 133</b>	2						
RG174/RG316/RG179	2.6/50+75/S	<b>R114 305 000</b>	1	3	1.7				

## STRAIGHT BULKHEAD JACK SOLDER TYPE FOR SEMI-RIGID CABLE



Cable group	Cable group dia.	Part number	Captive center contact	Panel drilling	Finish
RG405	.085"	R114 222 000	yes	P08	Gold

To download data sheets and assembly instructions, visit [www.radiall.com](http://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

## STRAIGHT FLANGE RECEPTACLES (male center contact)

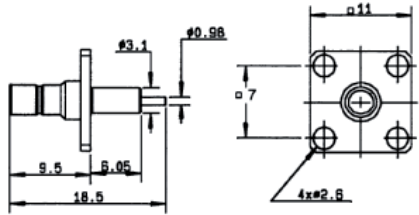
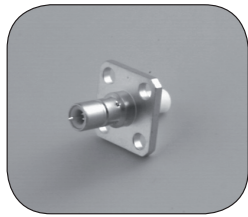


Fig. 1

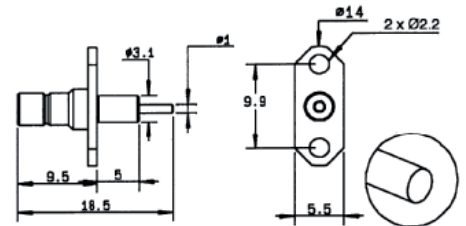


Fig. 2

Part number	Fig	Captive center contact	Panel drilling	Finish	Note
R114 413 000	1	no	P01	Gold	square flange / extended dielectric
R114 450 000	2		P06		2 hole flange / extended dielectric / unit packaging

## STRAIGHT BULKHEAD RECEPTACLES (male center contact)

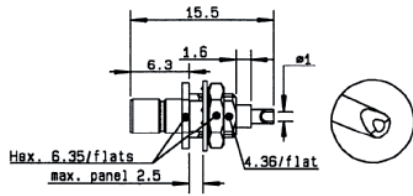


Fig. 1

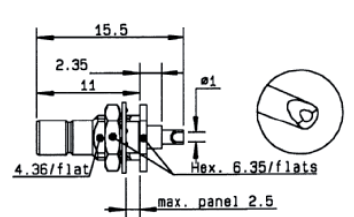


Fig. 2

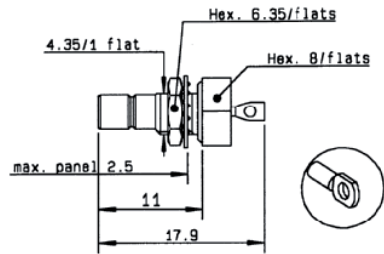
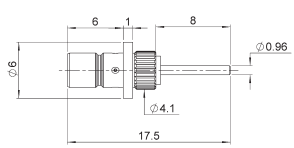


Fig. 3

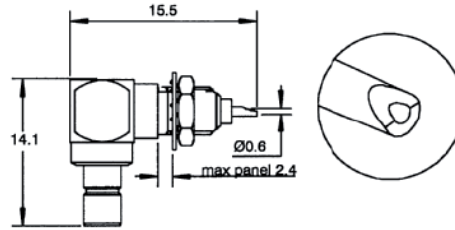
Part number	Fig	Captive center contact	Panel drilling	Finish	Note
R114 553 000	1	yes	P08	Gold	front mount
R114 554 000	2				rear mount
R114 603 000	3				hermetically sealed

## STRAIGHT PRESS IN RECEPTACLE (male)



Part number	Captive center contact	Panel drilling	Finish
R114 504 225	yes	P10	Nickel

## RIGHT ANGLE BULKHEAD RECEPTACLES (male center contact)



Part number	Captive center contact	Panel drilling	Finish
R114 670 000	yes	P08	Gold

## STRAIGHT PCB RECEPTACLES

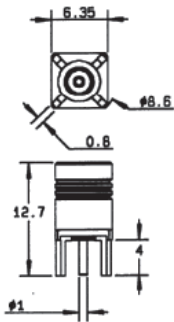
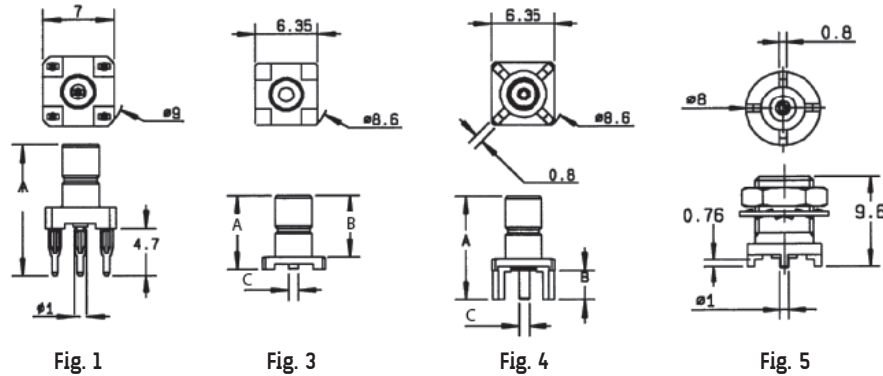


Fig. 6

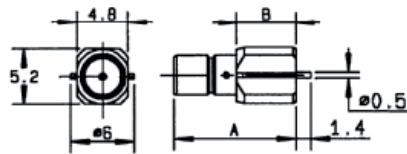


Fig. 2

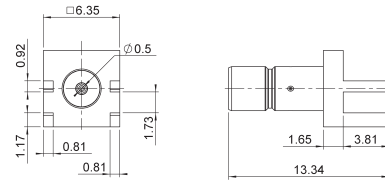


Fig. 7

Part number	Fig	Dimensions mm			Captive center contact	Assembly instructions	Panel drilling	Finish	Note
		A	B	C					
R114 416 000	1	12.1			yes		Gold	press fit pins	
R114 416 020		12.85					Nickel		
R114 423 000	2	11.5	5.5			M01	Gold	SMT edge card	
R114 423 120	7							SMT	
R114 424 000	3	7.4	6.15	0.96		M01		SMT / packaging 100 reel	
R114 424 100	3	7.4	6.15	0.96		M01		SMT / packaging 500 reel	
R114 424 120	3	7.4	6.15	0.96				female	
R114 425 000	6					P05			
R114 426 000	4	11.4	4	0.8				P03	
R114 560 200	5							P05	rear mount

To download data sheets and assembly instructions, visit [www.radiall.com](http://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.

# PCB RECEPTACLES

## RIGHT ANGLE PCB RECEPTACLES (male center contact)

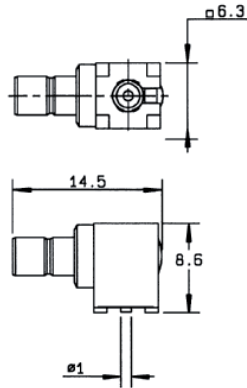
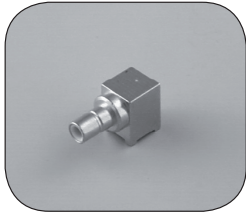


Fig. 1

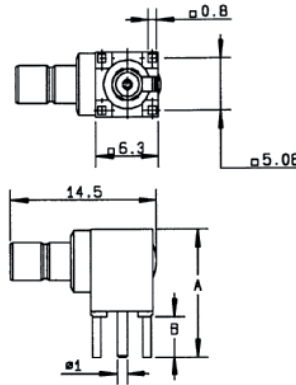


Fig. 2

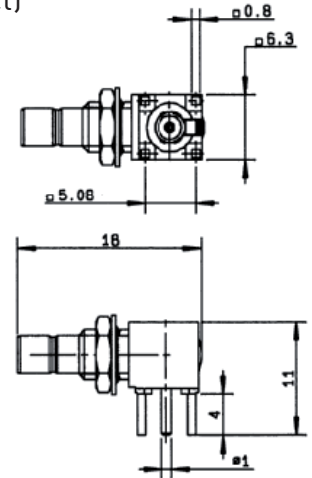


Fig. 3

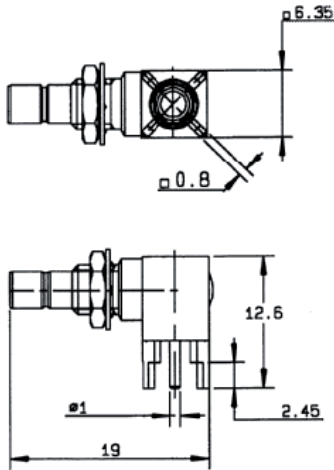


Fig. 4

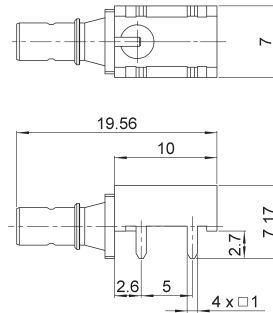


Fig. 5

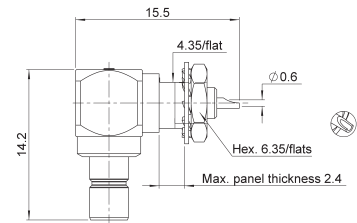


Fig. 6

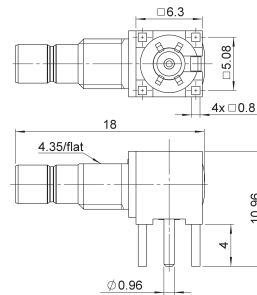


Fig. 7

Part number	Fig	Dimensions mm		Captive center contact	Assembly instructions	Panel drilling	Finish	Note
		A	B					
R114 664 000	1			yes	M01		Gold	SMT / packaging 100p reel
R114 664 120								SMT / packaging 500p reel
<b>R114 665 000</b>	2	12.6	4				Nickel	packaging unit rear mount
R114 665 020								
R114 673 020	3						Gold	packaging 400 pieces
R114 673 120	4							
R114 665 420	5					P08	Gold	packaging 100 pieces
<b>R114 670 000</b>	6							
R114 673 823	7				P09		packaging 200 pieces	

## IN SERIES ADAPTERS

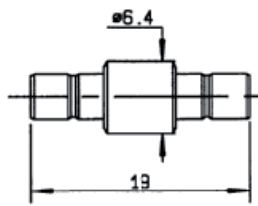


Fig. 1

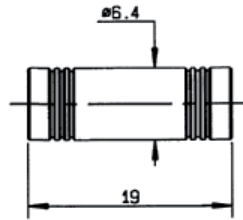


Fig. 2

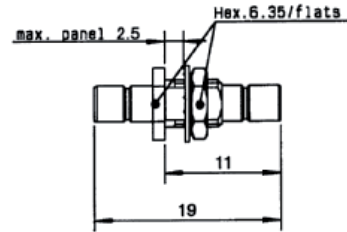


Fig. 3

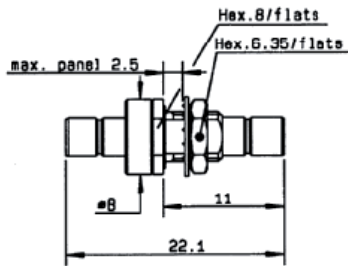


Fig. 4

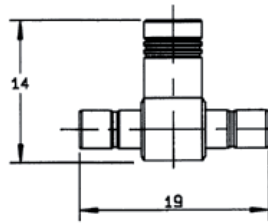


Fig. 5

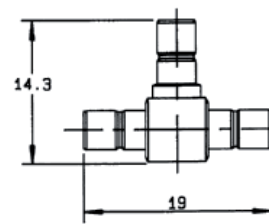


Fig. 6

Part number	Fig	Captive center contact	Panel drilling	Finish	Note
R114 703 000	1	yes	P08	Gold	male - male
R114 704 000	2				female - female
R114 720 000	3				bulkhead male - male
R114 753 000	4				hermetically sealed male - male
R114 780 000	5				tee female / male - male
R114 781 000	6				tee male / male - male

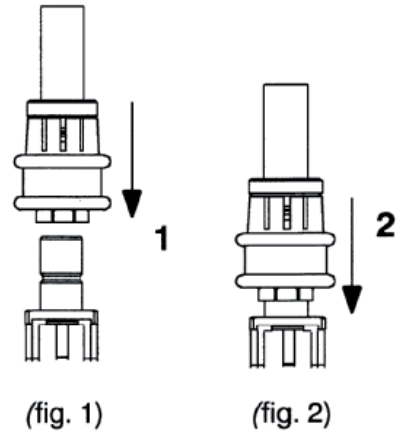
# INTRODUCTION

RADIAL proposes new SMB LOCK plugs with a 2 step connection system:

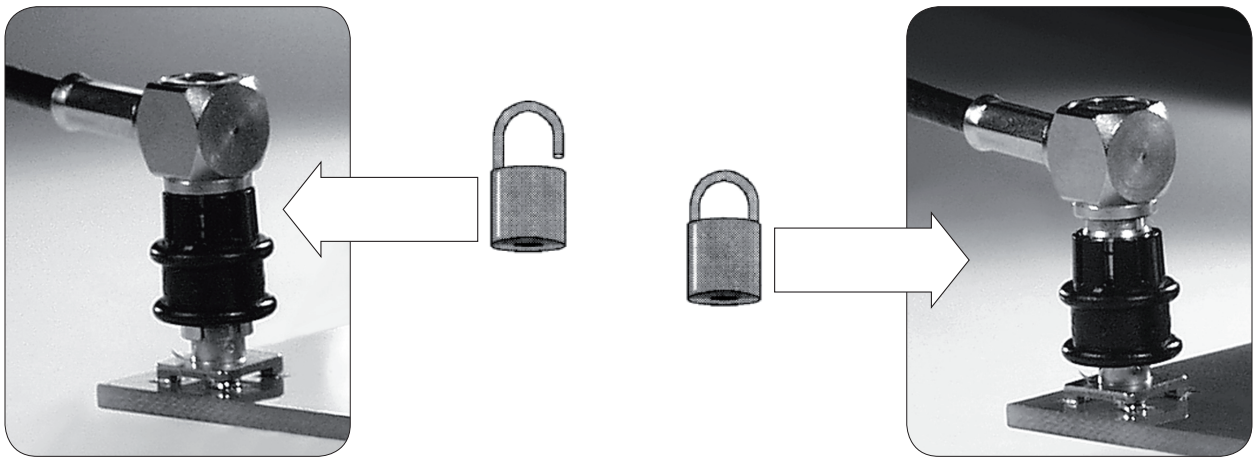
- 1 Snap the plug on the male connector (fig. 1),
- 2 Lock the couple by pushing down the coupling nut (fig. 2).

This new range

- is **totally intermateable** with the standard SMB male connectors,
- benefits from a low intermodulation,
- replace the standard SMB and screw-on connectors in all applications requiring:
  - a fast connection
  - a reliable lock-on connection
  - long durability



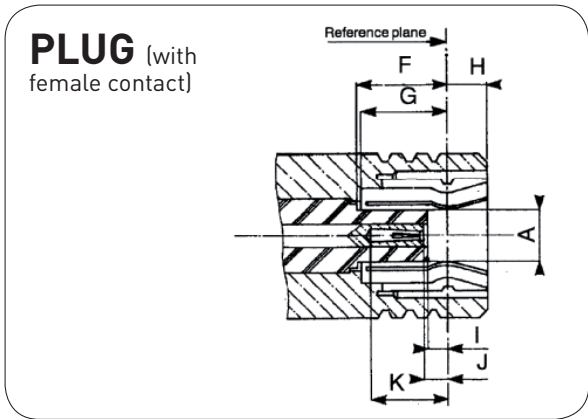
- Possibility to visually control the locking system.



- The connector allows a 360° cable rotation.
- Coupling nut.

The coupling nut is made with POM (halogen free). Its standard color is black.

# INTERFACE



Letter	mm		inch	
	min.	max.	min.	max.
A DIA		2.06		.081
F	3.58		.141	
G	3.58		.141	
H		1.63		.064
I	0.18		.007	
J	0.18	0.94	.007	.037
K	2.97		.117	



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

## ELECTRICAL CHARACTERISTICS

Impedance		50Ω	
Operating frequency		DC to 4 GHz	
Typical V.S.W.R.		2 GHz	4 GHz
Straight models	.085"	1.15	1.20
	∅ 2.6/50	1.20	1.25
Right angle models	.085"	1.05	1.15
	∅ 2.6/50	1.15	1.25
RF Insertion loss			
Straight models	.085"	0.20vF (GHz)	
	∅ 2.6/50	0.25vF (GHz)	
Right angle models	.085"	0.25vF (GHz)	
	∅ 2.6/50	0.50vF (GHz)	
Testing voltage (V RMS)		750	
	.085"	1000	
	∅ 2.6/50		
Working voltage (V RMS)		335	
	.085"	335	
	∅ 2.6/50		
Insulation resistance (MΩ)		1000	

## MECHANICAL CHARACTERISTICS

Life		500 matings min	
Cable retention force	.085"	220 N	
	∅ 2.6/50	110 N	
	∅ 5/50/S	110 N	
Coupling nut retention force		50 N min	
Vibrations		MIL STD 202 F method 240D, condition B	

## ENVIRONMENTAL CHARACTERISTICS

Temperature range	-35°C / + 125°C
-------------------	-----------------

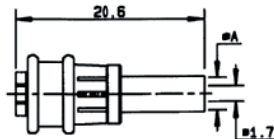
## MATERIALS AND PLATING

	Material	Plating
Bodies	Brass	BBR
Center contact	Beryllium copper	Gold
Outer contact	Bronze	
Insulator	PTFE	
Coupling nut	POM (halogen free)	

Standard packaging: 100 pieces. For unit packaging, add "W" after the P/N

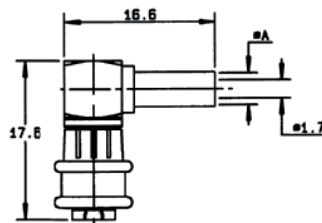
## PLUGS

### STRAIGHT PLUG FULL CRIMP TYPE FOR FLEXIBLE CABLES



Cable group	Cable group dia	Part number	Dimensions A (mm)	Captive center contact
RG174/RG188/RG316	2.6/50/S	R117 082 807	3.25	yes

### RIGHT ANGLE PLUG CRIMP TYPE FOR FLEXIBLE CABLES



Cable group	Cable group dia	Part number	Dimensions A (mm)	Captive center contact
RG174/RG188/RG316	2.6/50/S	R117 186 807	3.25	yes

To download data sheets and assembly instructions, visit [www.radiall.com](http://www.radiall.com) & enter the part number in the Search box.

**Bold** part numbers represent products typically in stock & available for immediate shipment.

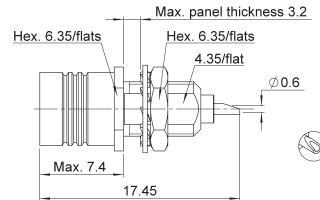
See page 8 and 9 for packaging information.

# RECEPTACLES

- Lower mating/unmating force (from 2.5 N to 6N).
- Receptacles intermateable with SMB connectors.
- Gold finish.

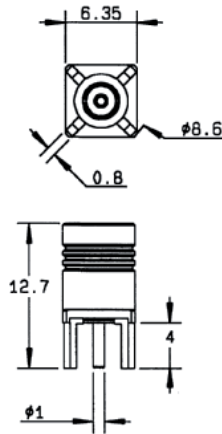
The SMB limited detent connectors have the same electrical characteristics as standard SMB connectors.

## BULKHEAD PLUG RECEPTACLE (rear fixing)



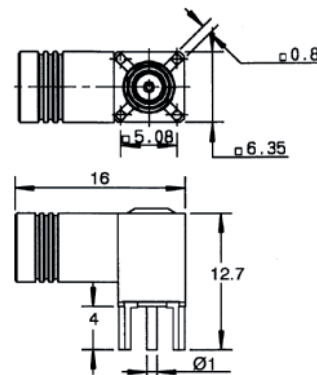
Part number	Panel drilling	Finish
R115 556 000	P08	Gold

## STRAIGHT PCB RECEPTACLES (female center contact)



Part number	Fig	Captive center contact	Panel drilling	Finish	Packaging
R115 427 000	1	yes	P05	Gold	Unit

## RIGHT ANGLE PCB RECEPTACLE (female center contact)



Part number	Captive center contact	Panel drilling	Finish	Packaging
R115 666 000	yes	P04	Gold	Unit

Slide on connectors (mating/unmating force: 2.2 N to 4.9 N).

The SMB slide-on connectors are completely intermateable with standard SMB and SMB limited detent connectors and in this regard, they can be used for **test applications**.

The SMB slide-on connectors have the same electrical characteristics as standard SMB connectors.

## STRAIGHT BULKHEAD PLUGS

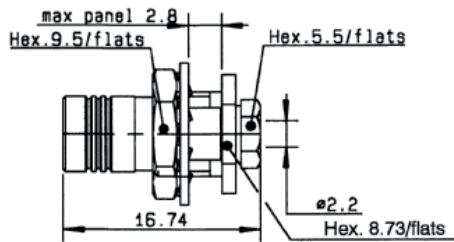
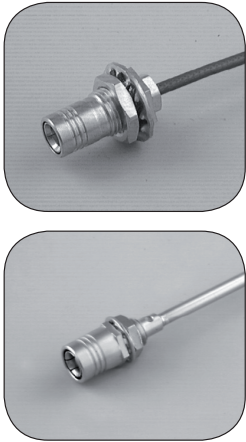


Fig. 1

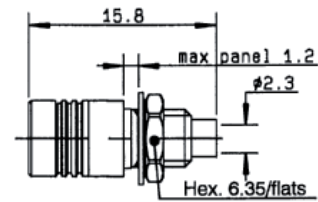


Fig. 2

Cable group	Cable group dia	Part number	Fig	Captive center contact	Panel drilling	Finish	Packaging	Note
RG178/RG196	2/50/S	R116 003 900	1	yes	P12	Gold	Unit	clamp type for flexible cable conical braid clamp
RG405	.085"	R116 056 000	2	no	P08			solder type for semi-rigid cable

## PCB RECEPTACLES

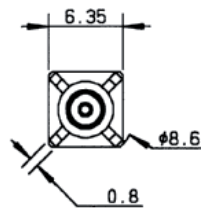
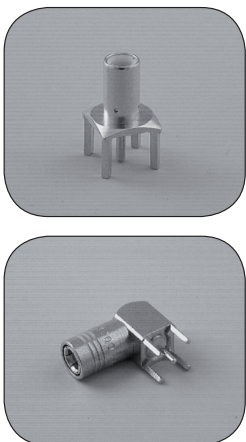


Fig. 1

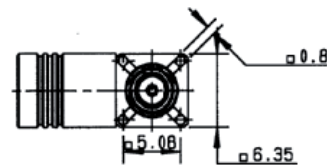
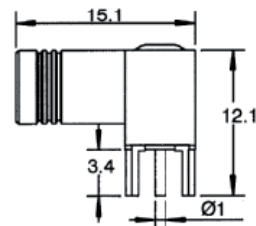
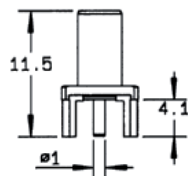


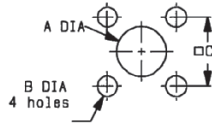
Fig. 2



Part number	Fig	Captive center contact	Panel drilling	Finish	Packaging	Note
R116 426 000	1	yes	P03	Gold	unit	male center contact
R116 666 030	2		P04			female center contact

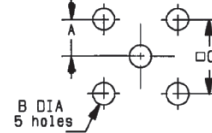
# PANEL DRILLING

P01



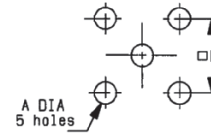
MM		
	maxi	mini
A	3.3	3.2
B	2.3	2.1
C	7.05	6.95

P02



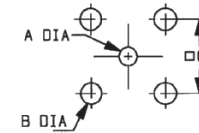
MM		
	maxi	mini
A	2.565	2.515
B	1.09	0.94
C	5.105	5.055

P03



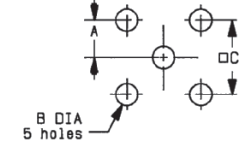
MM		
	maxi	mini
A	1.4	1.3
B	5.13	5.03

P04



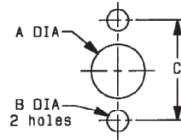
MM		
	maxi	mini
A	1.29	1.19
B	1.8	1.7
C	5.13	5.03

P05



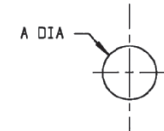
MM		
	maxi	mini
A	2.56	2.52
B	1.5	1.4
C	5.13	5.03

P06



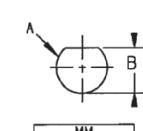
MM		
	maxi	mini
A	3.25	3.2
B	2.4	2.2
C	9.95	9.85

P07



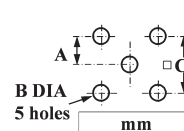
MM		
	maxi	mini
A	9.7	9.6

P08



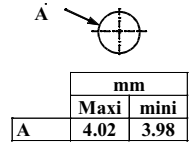
MM		
	maxi	mini
A	5	4.9
B	4.58	4.46

P09



mm		
	Maxi	mini
A	2.59	2.49
B	1.4	1.3
C	5.16	5

P10

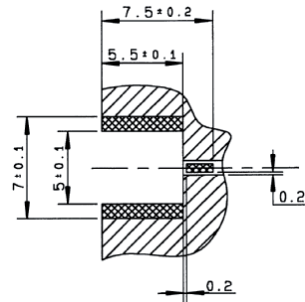


mm		
	Maxi	mini
A	4.02	3.98

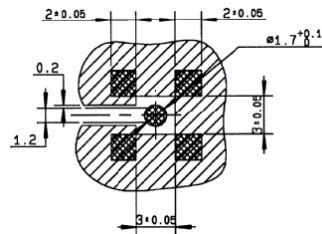
# ASSEMBLY INSTRUCTIONS

M01

Part number  
R114 423 000

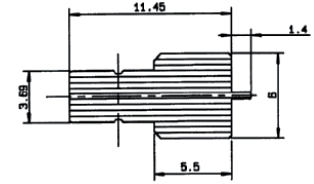


Part number  
R114 424 000  
R114 424 100  
R114 664 000  
R114 664 120

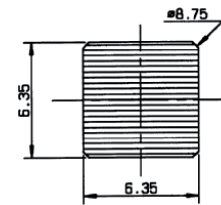


Video shadow:

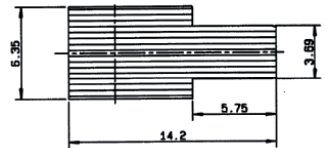
Part number  
R113 423 000



Part number  
R114 424 000  
R114 424 100

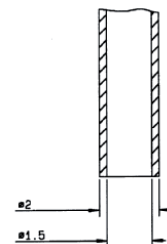


Part number  
R114 664 000  
R114 664 120



Vaccum nozzle dimensions:

Part number  
R114 424 000





50Ω	DC - 10 GHz
-----	-------------

### GENERAL

- Subminiature coaxial connectors
- Screw-on coupling
- Plugs have female contacts
- Jacks have male contacts
- Low weight
- Reduced outline dimensions

### APPLICABLE STANDARDS

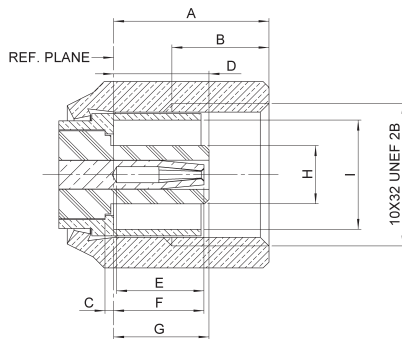
- MIL-C-39012

### APPLICATIONS

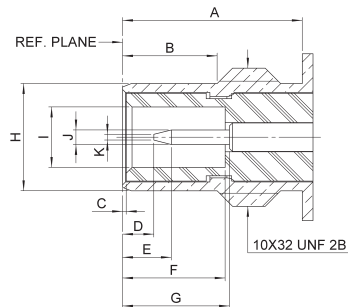
- Civil and military telecommunications
- Aeronautics
- Missiles
- Edge mounting applications

# INTERFACE

## PLUG



## JACK



Letter	mm		inch	
	min.	max.	min.	max.
A	5.14	5.55	.202	.219
B	3.20	4.20	.126	.165
C	0.25	0.35	.010	.014
D	2.95	3.00	.116	.118
E	2.80	3.20	.110	.126
F	2.80	3.40	.110	.134
G	3.15	3.40	.124	.134
H	2.00	2.05	.079	.081
I	3.75	3.80	.148	.150

Letter	mm		inch	
	min.	max.	min.	max.
A	6.00	6.20	.236	.244
B	3.15	3.35	.124	.132
C	0.05	0.20	.002	.008
D	0.65	1.50	.026	.059
E	1.30	2.05	.051	.081
F	3.40	3.71	.134	.146
G	3.40	3.95	.134	.156
H	3.65	3.69	.144	.145
I	2.08	2.13	.082	.084
J	0.48	0.52	.019	.020
K	--	0.20	--	.008

# CHARACTERISTICS

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

## ELECTRICAL CHARACTERISTICS

Impedance		50Ω	
Frequency range		DC - 10 GHz	
V.S.W.R. (typ.)	cable	3-14	2/50 1.25 + 0.04 F (GHz) 1.40 + 0.06 F (GHz)
Straight			2.6/50 1.20 + 0.04 F (GHz)
Right angle			1.30 + 0.04 F (GHz)
Insertion loss		3-27	0.25 dB max. at 4 GHz 0.5 dB max. at 4 GHz
Straight			
Right angle			
RF leakage		3-26	-60 dB min between 2 and 3 GHz
Insulation resistance		3-11	1000 MΩ min
Contact resistance		3-16	Initial 6 1
• center contact (mΩ)			After environment 8 1.5
• outer contact (mΩ)			
Voltage rating (volts RMS)	cable		2/50 250 V rms 60 V rms
• at sea level			2.6/50 335 V rms 85 V rms
• at 70000 ft (21000 m)			
Dielectric withstanding voltage	cable	3-17	2/50 750 V rms 185 V rms
• at sea level			2.6/50 1000 V rms 250 V rms
• at 70000 ft (21000 m)			
RF high potential withstanding voltage (Frequency 5 MHz)	cable	3-23	2/50 500 V rms
• at sea level			2.6/50 700 V rms

## MECHANICAL CHARACTERISTICS

Durability		3-15	500 matings
Force to engage and disengage		3-5-1	torque: 16 inch-ounces max - 11.3 Ncm
Mating torque			35 to 50 inch-ounces - 25 to 35 Ncm
Coupling nut proof torque			100 inch-ounces - 71 Ncm
Coupling nut retention force		3-25	35 lbs min - 156 N min
Cablings retention force	cable	3-24	2/50 13 lbs - 58 N 2.6/50 25 lbs - 110 N
Contact captivation			Axial force: 4 lbs - 18 N torque: not applicable

## ENVIRONMENTAL CHARACTERISTICS

Operating temperature range			-65°C / + 165°C -65°C / +105°C
standard models and hermetic models for semi-rigid cables			
Temperature cycling			MIL-STD-202, method 102, condition C
Thermal shock		3-20	MIL-STD-202, method 107, condition B
High temperature test			MIL-STD-202, method 108
Corrosion (salt spray)		3-13	MIL-STD-202, method 101, condition B, 5%
Vibration		3-18	MIL-STD-202, method 204, condition D, 20g
Shock		3-19	MIL-STD-202, method 213, condition C, 100g
Moisture resistance		3-21	not applicable
Barometric pressure		3-22	MIL-STD-202, method 105, condition C
Hermetic test			Down to 10 <sup>-6</sup> mm Hg (Torr) Leak rate <1 x 10 <sup>-6</sup> atm/cm <sup>3</sup> /sec

## MATERIALS AND PLATING

	Material	Plating
Bodies and male contacts	Brass, half hard per QQ-B-626	Gold to satisfy the corrosion requirements (bodies)
Female contacts and interfaces	Beryllium copper per QQ-C-530	Gold (Center contact)
Ferrules	Brass	
Insulators	PTFE teflon	
Gaskets	Silicone rubber	

All dimensions are given in mm

## STRAIGHT PLUGS

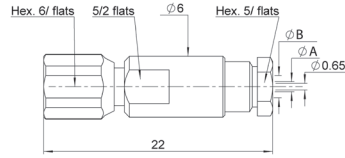


Fig. 1

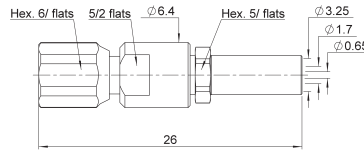


Fig. 2

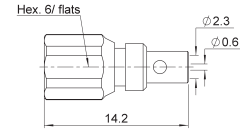


Fig. 3

Cable group	Cable group dia	Part number	Fig	Dimensions mm		Note
				A dia	B dia	
RG178/RG196	2/50/S	R112 003 000	1	1	2.2	Clamp type
RG174/RG316/RG179	2.6/50+75/S	<b>R112 005 000</b>		1.7	3	
		<b>R112 075 000</b>	2			Crimp type
RG405	.085"	R112 053 000	3			Solder type

## RIGHT ANGLE PLUGS

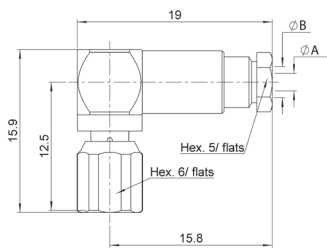


Fig. 1

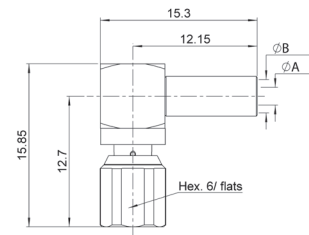
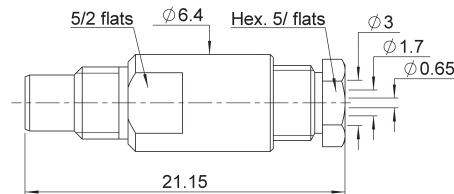


Fig. 2

Cable group	Cable group dia	Part number	Fig	Dimensions mm		Note
				A dia	B dia	
RG178/RG196	2/50/S	R112 163 000	1	1	2.2	Clamp type
RG174/RG316/RG179	2.6/50+75/S	<b>R112 165 000</b>		1.7	3	
RG178/RG196/RD178	2/50	R112 183 000	2	0.95	2.55	Crimp type
RG174/RG316/RG179	2.6/50+75/S	<b>R112 186 000</b>		1.72	3.25	

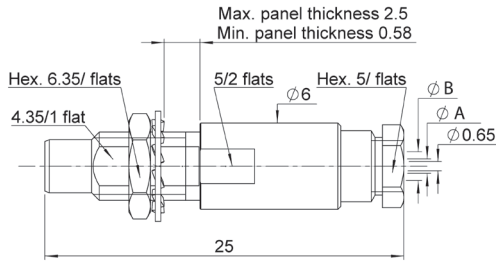
## STRAIGHT JACK



Cable group	Cable group dia	Part number	Note
RG174/RG316/RG179	2.6/50+75/S	R112 205 000	Clamp type

# JACKS AND RECEPTACLES

## BULKHEAD JACKS



Cable group	Cable group dia	Part number	Dimensions mm		Panel drilling
			A dia	B dia	
RG178/RG196	2/50/S	R112 303 000	1	2	P04
RG174/RG316/RG179	2.6/50+75/S	R112 305 000	1.7	3	

## SQUARE FLANGE RECEPTACLES

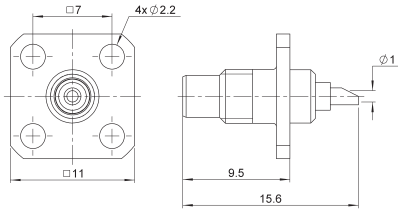


Fig. 1

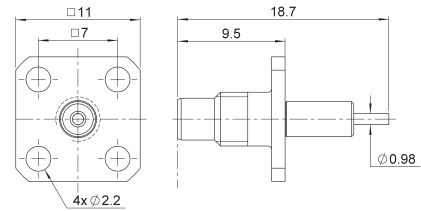


Fig. 2

Part number	Fig	Captive center contact	Panel drilling
R112 403 000	1		P01
R112 413 000	2	no + removable insulator	P02

## BULKHEAD RECEPTACLES WITH SOLDER POT CONTACT

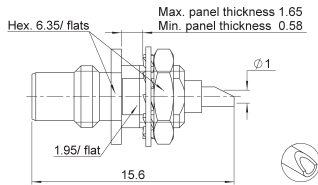


Fig. 1

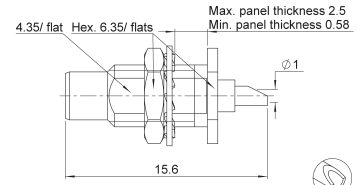


Fig. 2

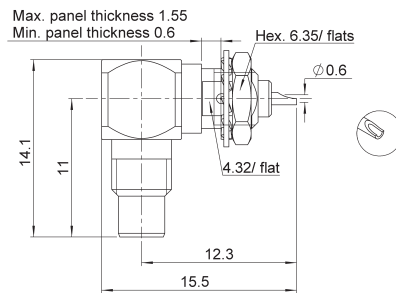


Fig. 3

Part number	Fig	Panel drilling	Note
R112 553 000	1	P04	rear nut fixing
R112 554 000	2		front nut fixing
R112 670 000	3		front mount



## PCB RECEPTACLES

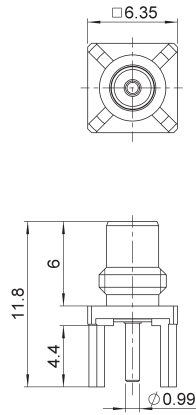
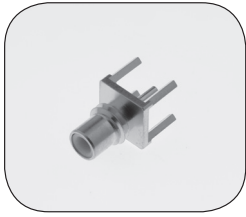


Fig. 1

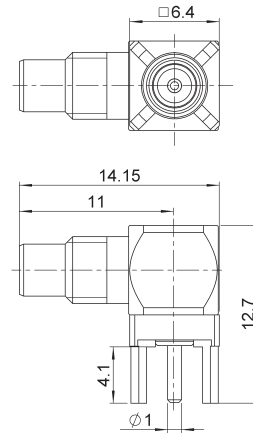


Fig. 2

Part number	Fig	Panel drilling	Note
<b>R112 426 000</b>	1	P03	Solder legs
<b>R112 665 000</b>	2		

## IN SERIES ADAPTERS

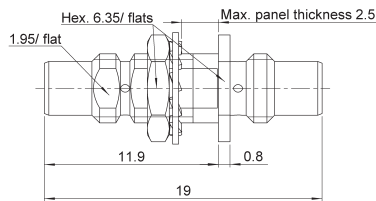


Fig. 1

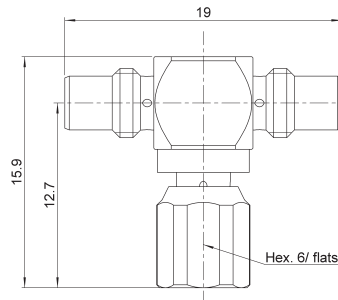
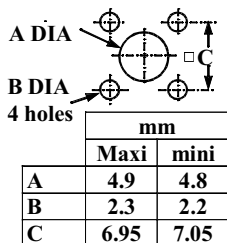


Fig. 2

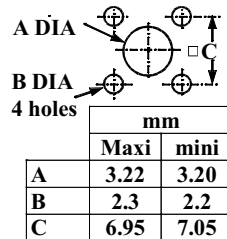
Part number	Fig	Panel drilling	Note
<b>R112 720 000</b>	1	P04	Male - male
<b>R112 780 000</b>	2		Tee male - male/female

## PANEL DRILLING

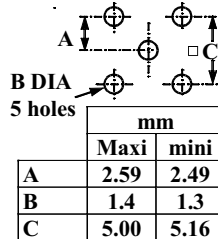
### P01



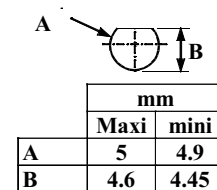
### P02



### P03



### P04



To download data sheets and assembly instructions, visit [www.radiall.com](http://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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