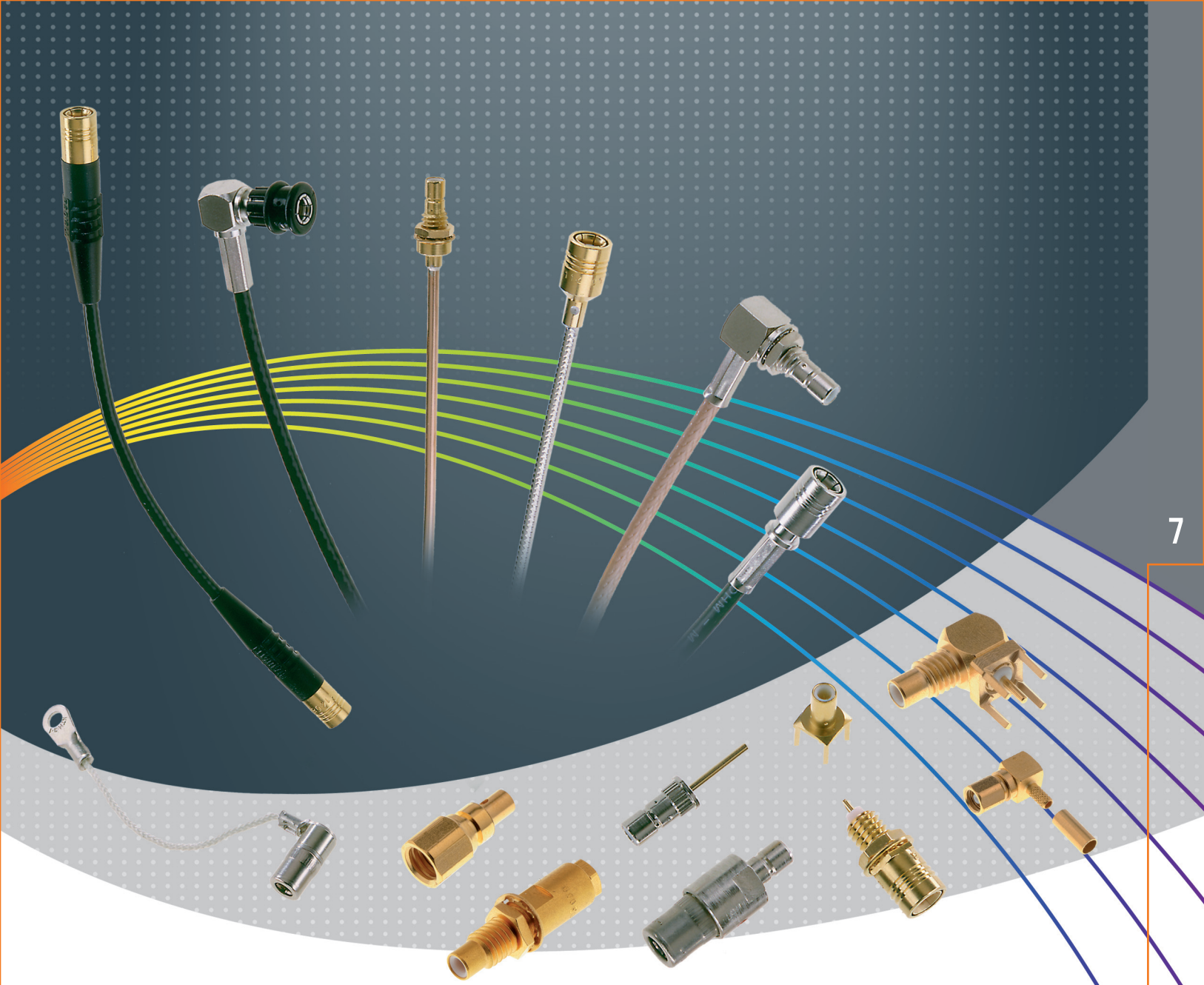


SMB / SMB Lock / SMC series

R114 / R115 / R116 / R117 / R112

RADIALL
The next conneXion

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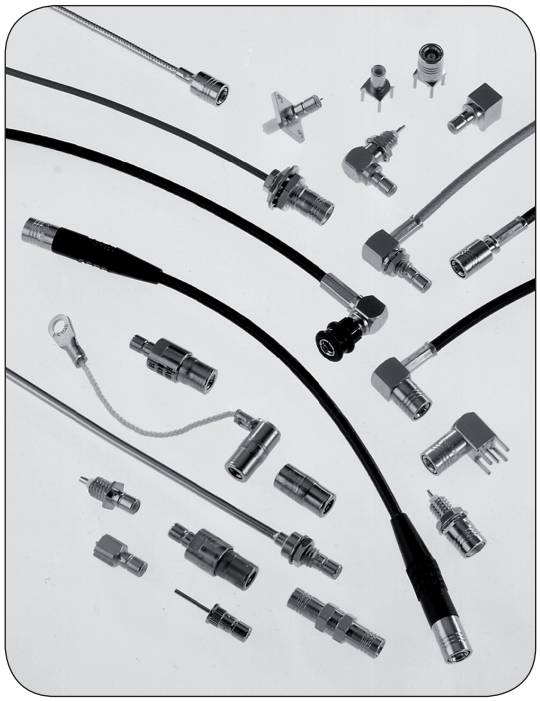
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INTRODUCTION



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)

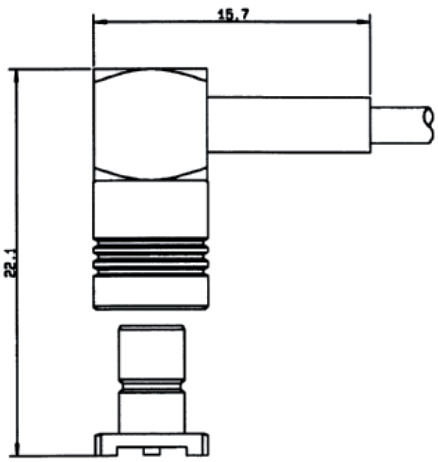
APPLICABLE STANDARDS

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

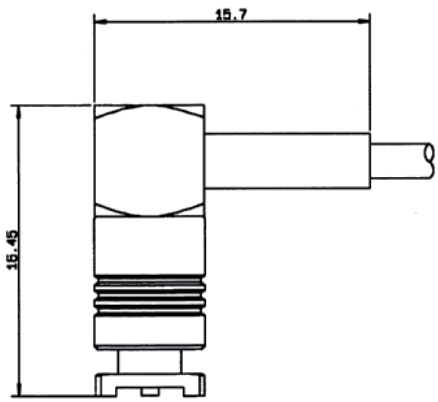
APPLICATIONS

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

PROFILE



Unmated



Mated

INTRODUCTION

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.

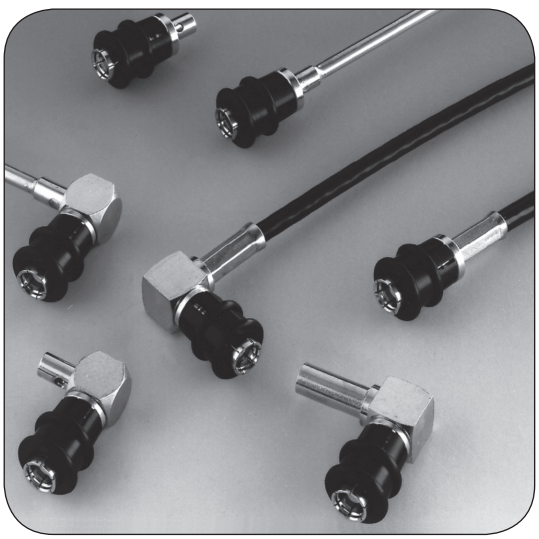
The SMB series also features versions with lower mating forces than standard. Four types of interconnection mechanisms are available:

• **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.

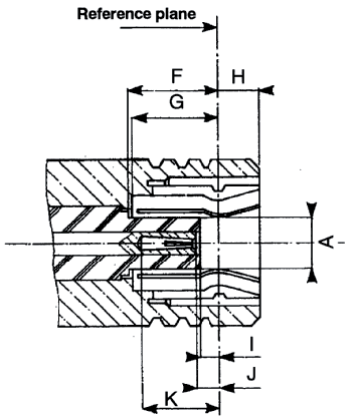
• **SMB Lock:**
Plugs (with female center contact) have a coupling nut allowing a reliable lock-on connection (50 N min). This range allows a visual control of the locking system.



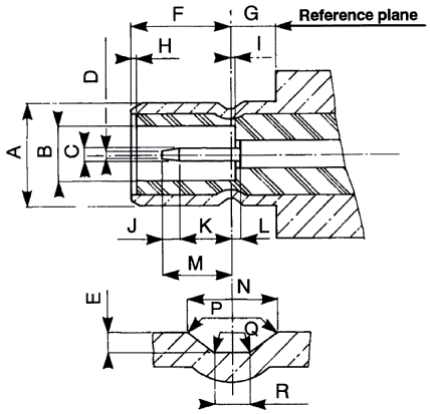
These four types of SMB connectors have the same electrical performances.

INTERFACE

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

ELECTRICAL CHARACTERISTICS

Impedance		50Ω			
Frequency range		DC - 4 GHz			
V.S.W.R. (typ.)	Frequency	3-14	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
	2.6		1.12	1.22	1.35
Right angle models	.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
	2.6		0.05	0.05	0.05
Right angle models	.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		3-17			
• cable group			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)		3-23			
• cable group			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:	3-24	
• 2/50		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^{-6} mm of Hg (Torrs) Leakage rate < 10^{-6} atm/cm^3/s

MATERIALS AND PLATING

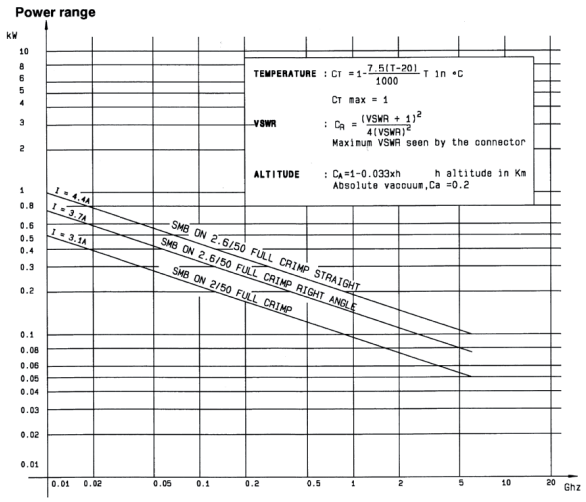
	Material	Plating
Body and center pin contact	Half hard brass as per QQ-B-626	Gold or nickel (Body)
Center socket contact	Beryllium copper as per QQ-C-530	Gold (Center contact)
Ferrules	Brass	
Insulators	PTFE teflon	
Gaskets	Silicone elastomer	

Standard packaging: 100 pieces.

All dimensions are given in mm

CHARACTERISTICS

POWER RATING



PLUGS

STRAIGHT PLUGS CRIMP TYPE FOR FLEXIBLE CABLES



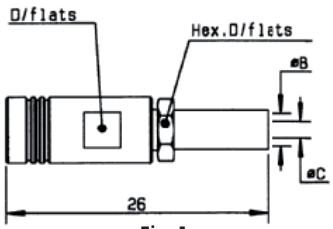


Fig. 1

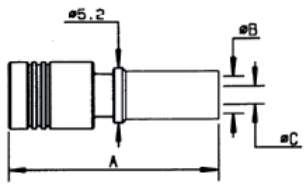


Fig. 2

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**	1		3.25	1.7	5	yes	Gold	
		R114 082 000	2	19.8	3.25	1.7		yes	Gold	full crimp
RD316	2.6/50/D	**R114 083 000**	2	18.8	3.25	1.7		yes	Gold	full crimp

STRAIGHT PLUGS





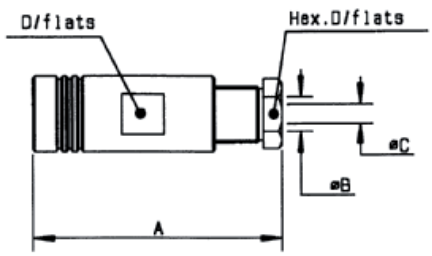


Fig. 1

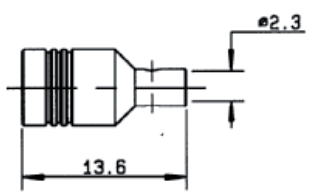


Fig. 2

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**	1	21.8	3	1.7	5	yes	Gold	clamp type for flexible cable
RG405	.085"	R114 053 000	2					no	Gold	solder type for semi rigid cable

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 PLUGS CRIMP TYPE FOR FLEXIBLE CABLES



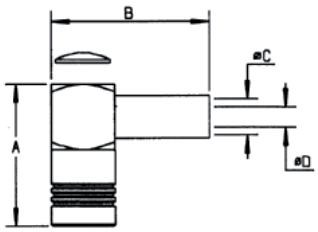


Fig. 1

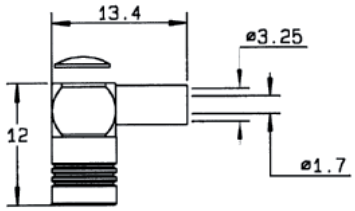
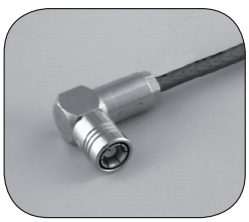


Fig. 2

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 183 000**	1	13.8	15.7	2.55	0.95	yes	Gold	
RG174/RG316/RG179	2.6/50+75/S	**R114 185 000**	2							short version
		R114 186 000	1	13.8	15.7	3.25	1.7			
		R114 186 100			15.3		1.72			
		R114 187 000		15.1	15.7		1.7			full crimp
RD316	2.6/50/D	**R114 182 000**		13.8						
BT3002	3.6/75/D	R114 191 300		13.7	18.3	4.4	2.1			

RIGHT ANGLE PLUGS





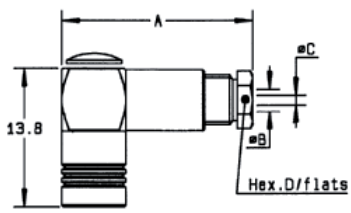


Fig. 1

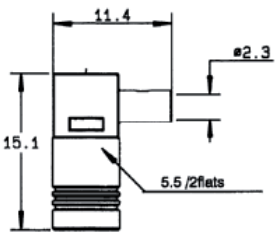


Fig. 2

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

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See page 8 and 9 for packaging information.

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STRAIGHT JACKS CRIMP TYPE FOR FLEXIBLE CABLES



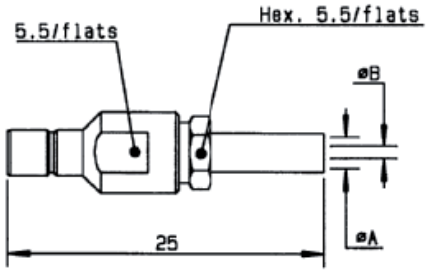


Fig. 1

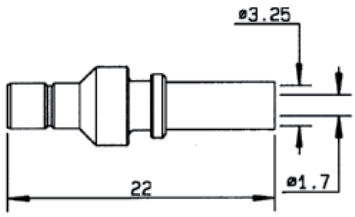
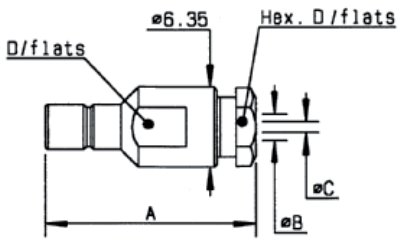


Fig. 2

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	**R114 238 000**	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	**R114 205 000**		3	1.7			

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 BULKHEAD JACKS CRIMP TYPE FOR FLEXIBLE CABLES



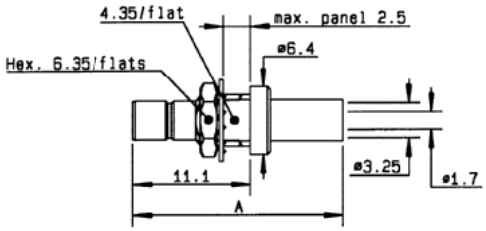


Fig. 1

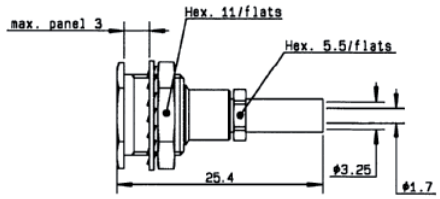


Fig. 2

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

STRAIGHT BULKHEAD JACKS CLAMP TYPE FOR FLEXIBLE CABLES



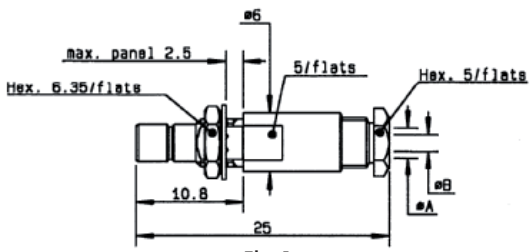


Fig. 1

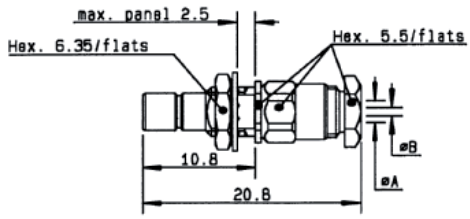
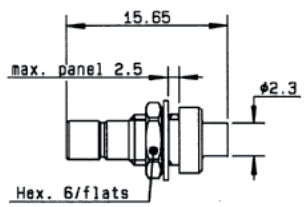


Fig. 2

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

STRAIGHT FLANGE RECEPTACLES (male center contact)



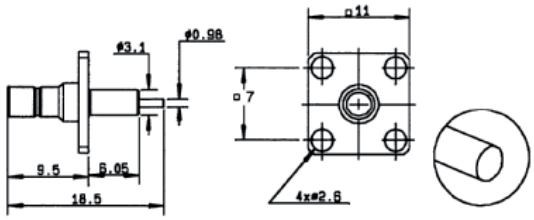


Fig. 1

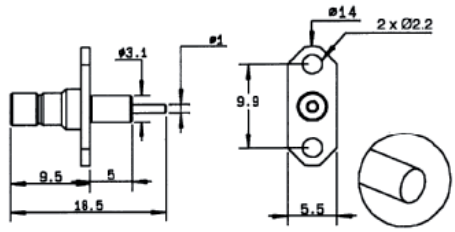


Fig. 2

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)



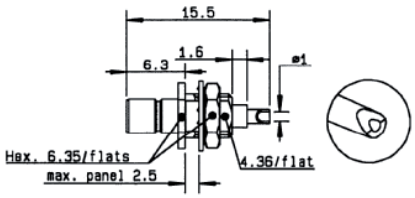


Fig. 1

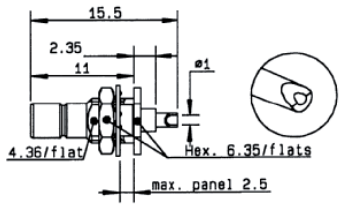


Fig. 2

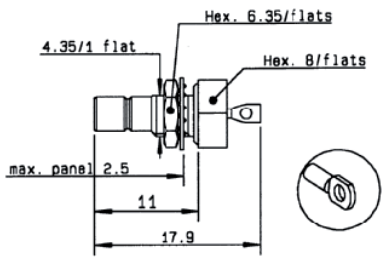
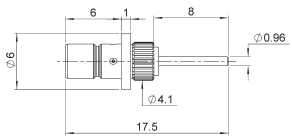


Fig. 3

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)



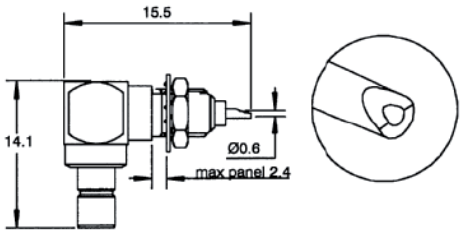


Part number	Captive center contact	Panel drilling	Finish
R114 504 225	yes	P10	Nickel

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 BULKHEAD RECEPTACLES (male center contact)





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

STRAIGHT PCB RECEPTACLES



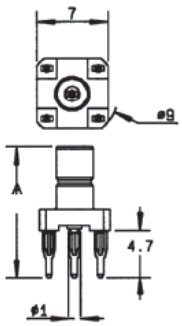


Fig. 1

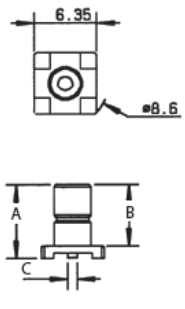


Fig. 3

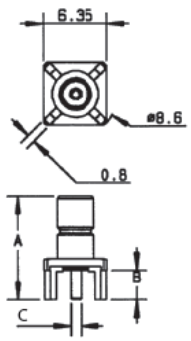


Fig. 4

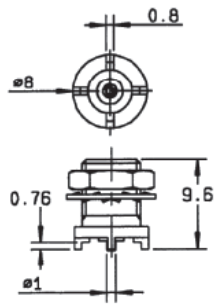


Fig. 5

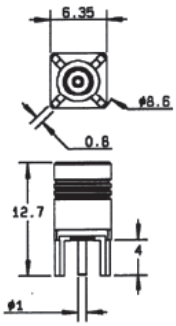


Fig. 6

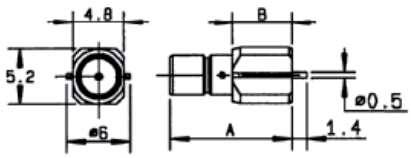


Fig. 2

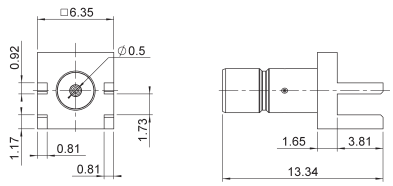


Fig. 7

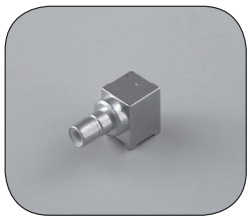
Part number	Fig	Dimensions mm			Captive center contact	Assembly instructions	Panel drilling	Finish	Note
		A	B	C					
R114 416 000	1	12.1			yes		P02	Gold	press fit pins
R114 416 020		12.85						Nickel	
R114 423 000	2	11.5	5.5			M01		Gold	SMT edge card
R114 423 120	7								
R114 424 000	3	7.4	6.15	0.96		M01			SMT
R114 424 100	3	7.4	6.15	0.96		M01			SMT / packaging 100 reel
R114 424 120	3	7.4	6.15	0.96					SMT / packaging 500 reel
R114 425 000	6						P05		female
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** & enter the part number in the Search box.
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See page 8 and 9 for packaging information.

RADIALL
The next conneXion

PCB RECEPTACLES

RIGHT ANGLE PCB RECEPTACLES (male center contact)



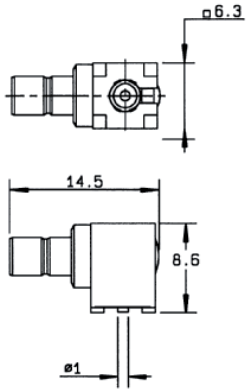


Fig. 1

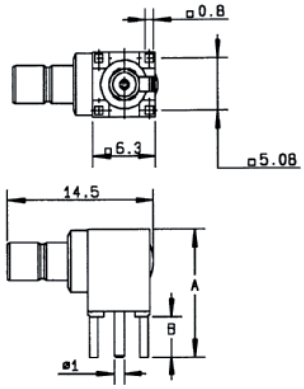


Fig. 2

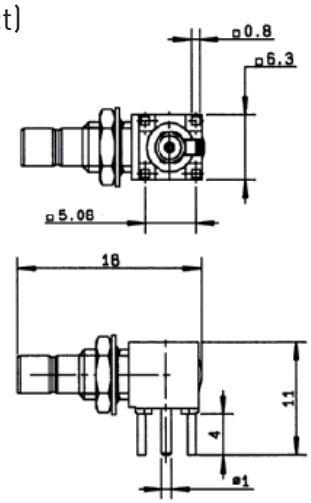


Fig. 3

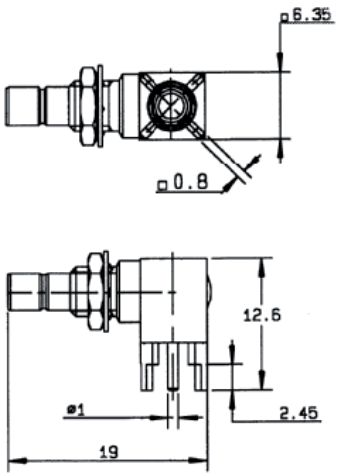


Fig. 4

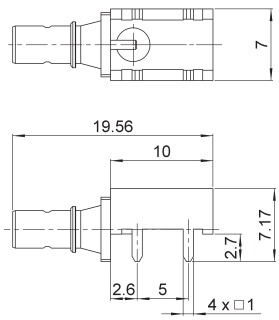


Fig. 5

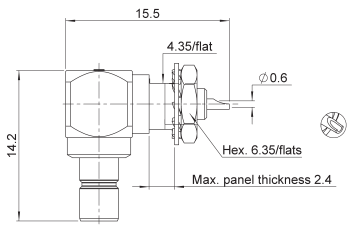


Fig. 6

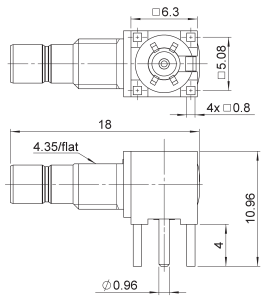


Fig. 7

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
R114 665 000	2	12.6	4			P03	Nickel	
R114 665 020								
R114 673 020	3							packaging unit rear mount
R114 673 120	4						Gold	
R114 665 420	5					P08		packaging 400 pieces
R114 670 000	6							packaging 100 pieces
R114 673 823	7					P09		packaging 200 pieces

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.

IN SERIES ADAPTERS



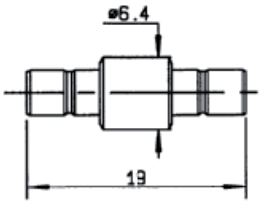


Fig. 1

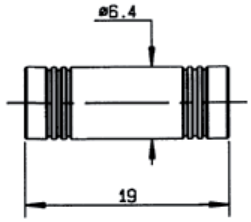


Fig. 2

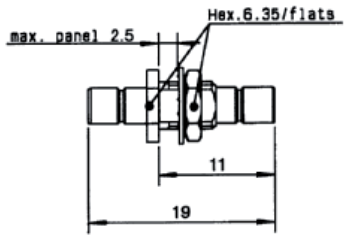


Fig. 3

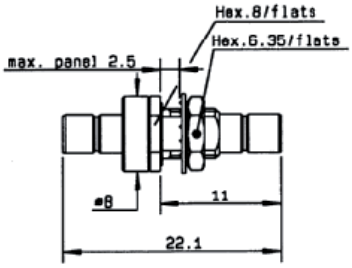


Fig. 4

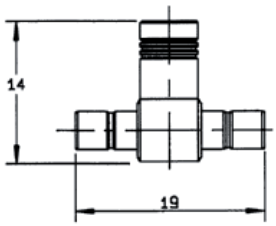


Fig. 5

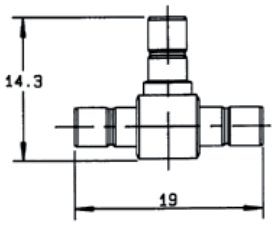


Fig. 6

Part number	Fig	Captive center contact	Panel drilling	Finish	Note
R114 703 000	1	yes		Gold	male - male
R114 704 000	2				female - female
R114 720 000	3		P08		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

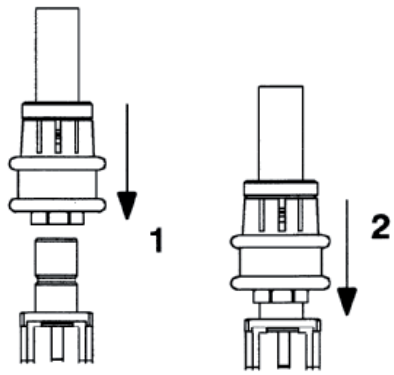
To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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See page 8 and 9 for packaging information.

INTRODUCTION

RADIALL 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).

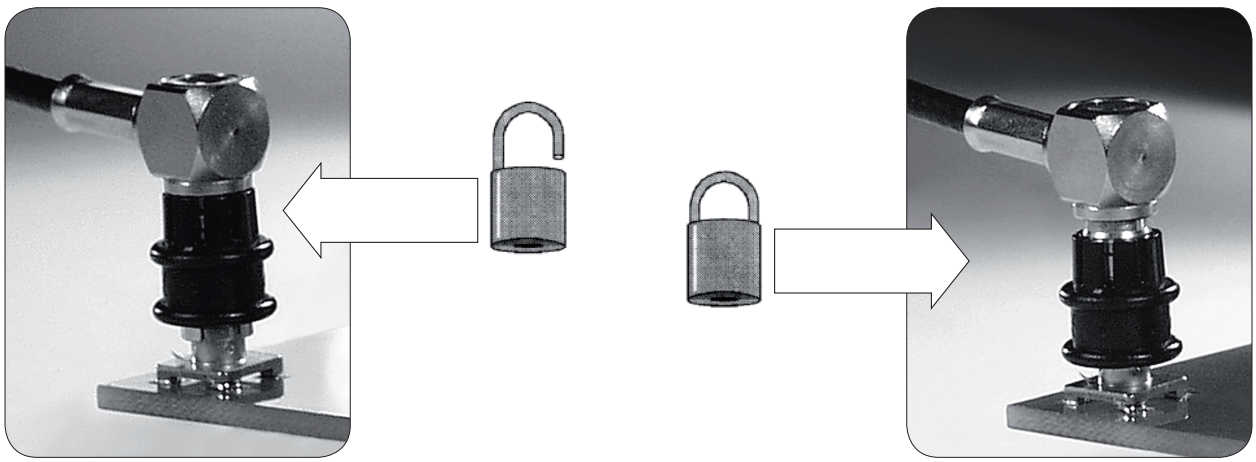


(fig. 1) (fig. 2)

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.**

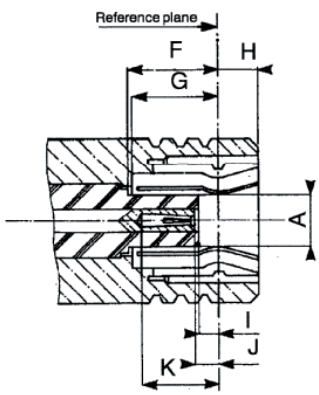


- **The connector allows a 360° cable rotation.**
- **Coupling nut.**

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

INTERFACE

PLUG (with female 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	

CHARACTERISTICS

Test/characteristics		Values/remarks	

ELECTRICAL CHARACTERISTICS

Impedance		50Ω	
Operating frequency		DC to 4 GHz	
Tyical 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"	0.20√F (GHz)	
	∅ 2.6/50	0.25√F (GHz)	
Right angle models	.085"	0.25√F (GHz)	
	∅ 2.6/50	0.50√F (GHz)	
Testing voltage (V RMS)	.085"	750	
	∅ 2.6/50	1000	
Working voltage (V RMS)	.085"	335	
	∅ 2.6/50	335	
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

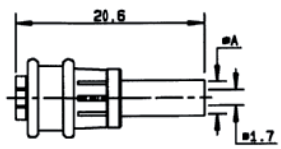
	Material	Plating
Bodies	Brass	BBR
Center contact	Beryllium copper	Gold
Outer contact	Bronze	
Insulator	PTFE	
Coupling nut	POM (halogen free)	

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

PLUGS

STRAIGHT PLUG FULL CRIMP TYPE FOR FLEXIBLE CABLES

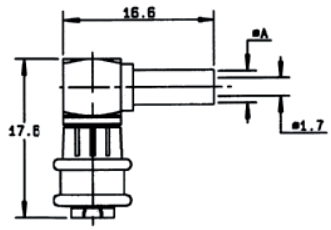




Cable group	Cable group dia	Part number	Dimensions A (mm)	Captive center contact
RG174/RG188/RG316	2.6/50/S	R117 082 807	3.25	yes

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** & enter the part number in the Search box.
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See page 8 and 9 for packaging information.

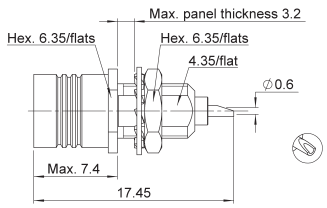
RADIALL
The next conneXion

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.

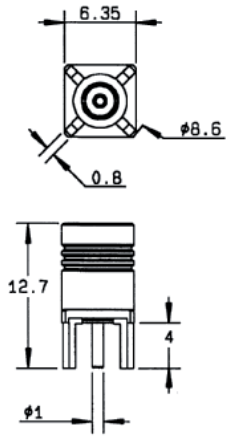
BULKHEAD PLUG RECEPTACLE (rear fixing)



Part number	Panel drilling	Finish
R115 556 000	P08	Gold

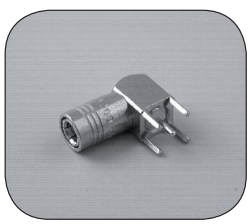
STRAIGHT PCB RECEPTACLES (female center contact)

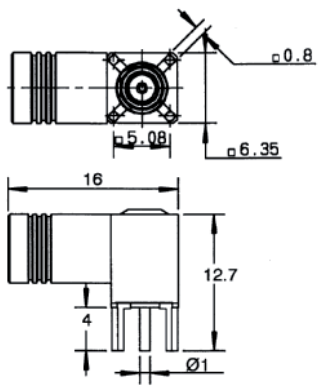




Part number	Fig	Captive center contact	Panel drilling	Finish	Packaging
R115 427 000	1	yes	P05	Gold	Unit

RIGHT ANGLE PCB RECEPTACLE (female center contact)





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

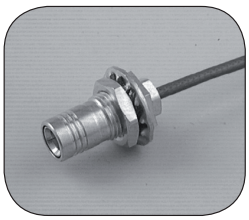
To download data sheets and assembly instructions, visit **www.radiall.com** & enter the part number in the Search box.
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Slide on connectors (mating/unmating force: 2.2 N to 4.9 N).

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





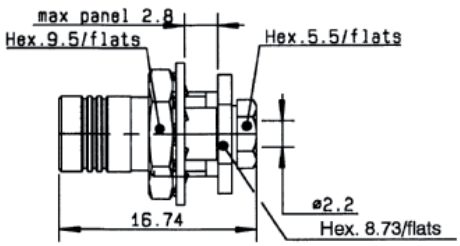


Fig. 1

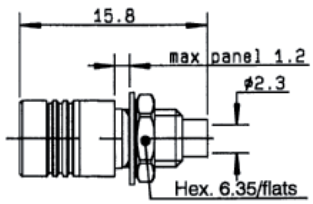
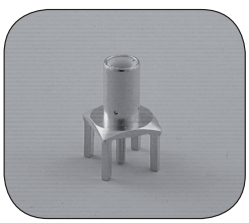


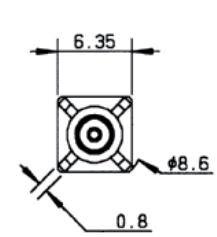
Fig. 2

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







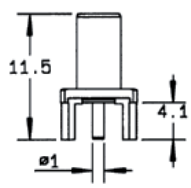
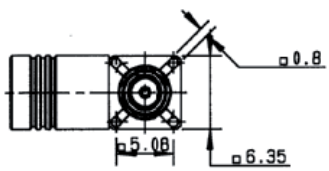


Fig. 1



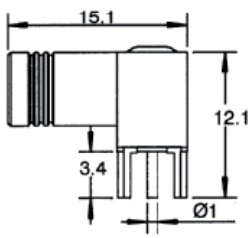


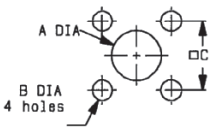
Fig. 2

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

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.

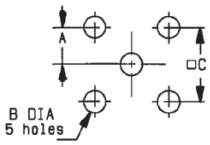
PANEL DRILLING

P01



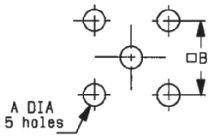
	MM	
	maxi	mini
A	3.3	3.2
B	2.3	2.1
C	7.05	6.95

P02



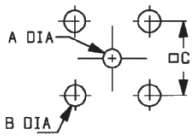
	MM	
	maxi	mini
A	2.565	2.515
B	1.09	0.94
C	5.105	5.055

P03



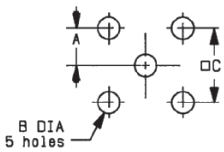
	MM	
	maxi	mini
A	1.4	1.3
B	5.13	5.03

P04



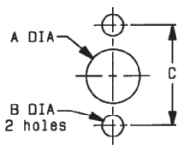
	MM	
	maxi	mini
A	1.29	1.19
B	1.8	1.7
C	5.13	5.03

P05



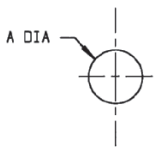
	MM	
	maxi	mini
A	2.56	2.52
B	1.5	1.4
C	5.13	5.03

P06



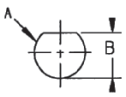
	MM	
	maxi	mini
A	3.25	3.2
B	2.4	2.2
C	9.95	9.85

P07



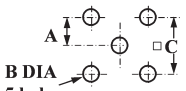
	MM	
	maxi	mini
A	9.7	9.6

P08



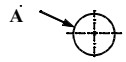
	MM	
	maxi	mini
A	5	4.9
B	4.58	4.46

P09



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

P10

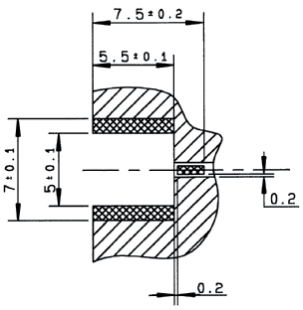


	mm	
	Maxi	mini
A	4.02	3.98

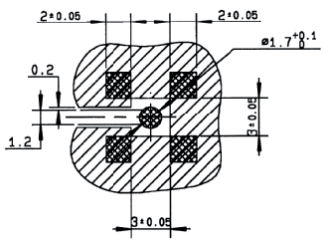
ASSEMBLY INSTRUCTIONS

M01

Part number
R114 423 000

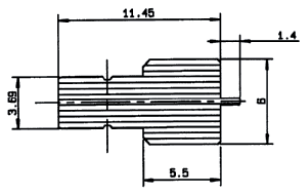


Part number
R114 424 000 R114 424 100 R114 664 000 R114 664 120

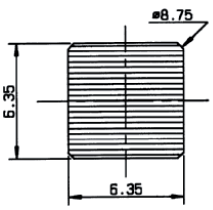


Video shadow:

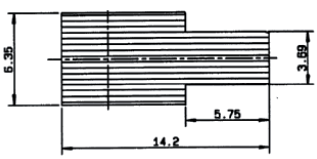
Part number
R113 423 000



Part number
R114 424 000 R114 424 100

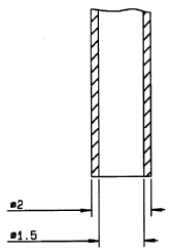


Part number
R114 664 000 R114 664 120



Vaccum nozzle dimensions:

Part number
R114 424 000



www.radiall.com



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

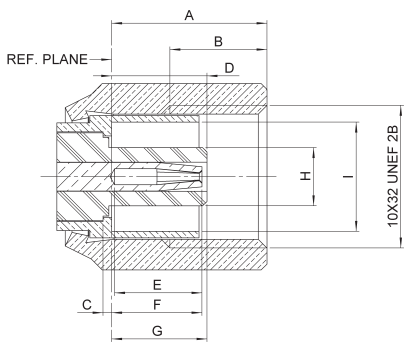
- MIL-C-39012

APPLICATIONS

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

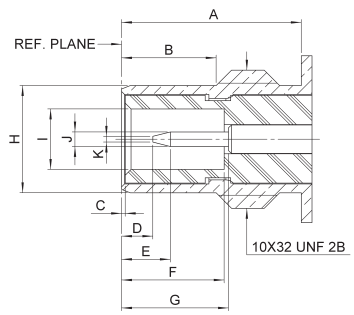
INTERFACE

PLUG



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

JACK



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 Straight Right angle		3-14	2/50 1.25 + 0.04 F (GHz) 1.40 + 0.06 F (GHz)	2.6/50 1.20 + 0.04 F (GHz) 1.30 + 0.04 F (GHz)
Insertion loss Straight Right angle		3-27	0.25 dB max. at 4 GHz 0.5 dB max. at 4 GHz	
RF leakage		3-26	-60 dB min between 2 and 3 GHz	
Insulation resistance		3-11	1000 MΩ min	
Contact resistance • center contact (mΩ) • outer contact (mΩ)		3-16	Initial 6 1	After environment 8 1.5
Voltage rating (volts RMS) cable • at sea level • at 70000 ft (21000 m)			2/50 250 V rms 60 V rms	2.6/50 335 V rms 85 V rms
Dielectric withstanding voltage cable • at sea level • at 70000 ft (21000 m)		3-17	2/50 750 V rms 185 V rms	2.6/50 1000 V rms 250 V rms
RF high potential withstanding voltage (Frequency 5 MHz) cable • at sea level		3-23	2/50 500 V rms	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	
Cabling 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 standard models and hermetic models for semi-rigid cables		-65°C / + 165°C -65°C / +105°C
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^{-6} mm Hg (Torr) Leak rate <1 x 10^{-6} atm/cm^3/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



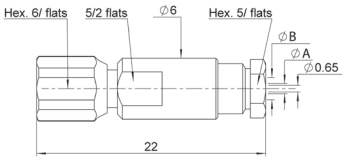


Fig. 1

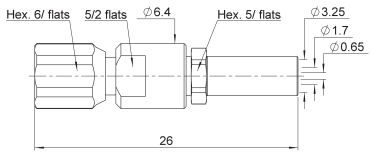


Fig. 2

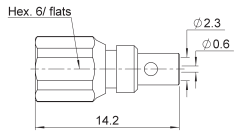


Fig. 3

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	**R112 005 000**		1.7	3	
		R112 075 000	2			Crimp type
RG405	.085"	R112 053 000	3			Solder type

RIGHT ANGLE PLUGS



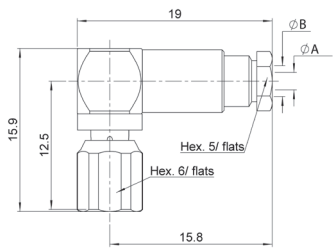


Fig. 1

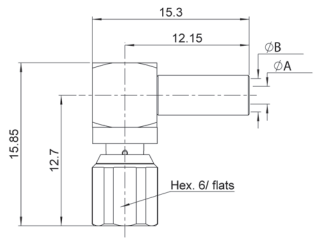
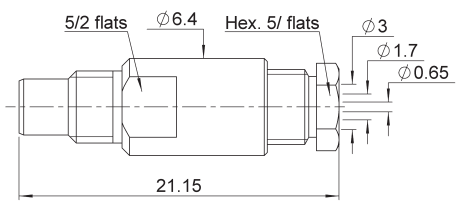


Fig. 2

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	**R112 165 000**		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	**R112 186 000**		1.72	3.25	

STRAIGHT JACK





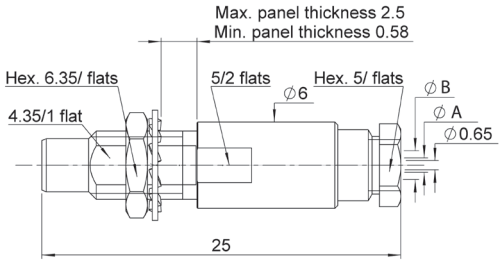
Cable group	Cable group dia	Part number	Note
RG174/RG316/RG179	2.6/50+75/S	R112 205 000	Clamp type

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

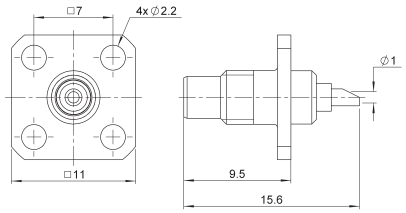


Fig. 1

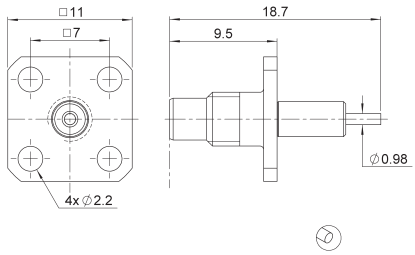


Fig. 2

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



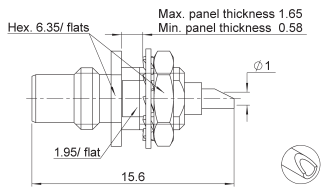


Fig. 1

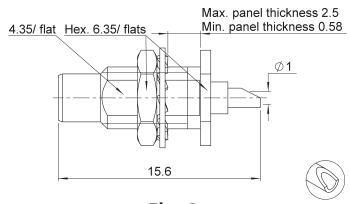


Fig. 2

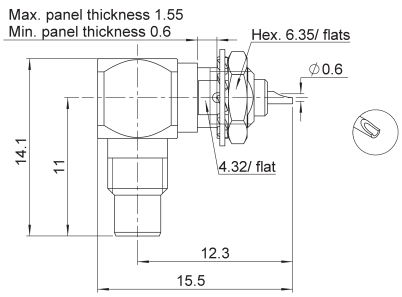


Fig. 3

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

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.

PCB RECEPTACLES





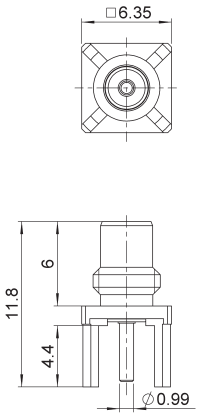


Fig. 1

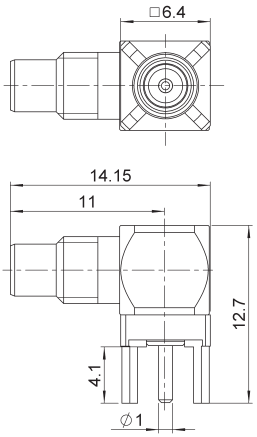


Fig. 2

Part number	Fig	Panel drilling	Note
R112 426 000	1	P03	Solder legs
R112 665 000	2		

IN SERIES ADAPTERS

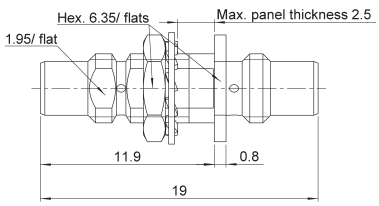


Fig. 1

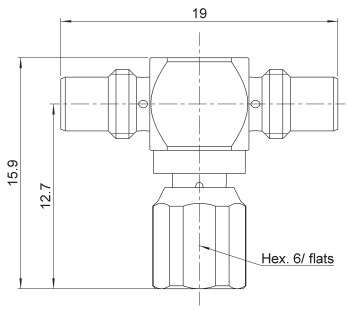
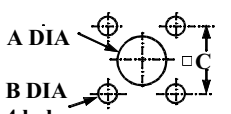


Fig. 2

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

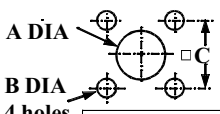
PANEL DRILLING

P01



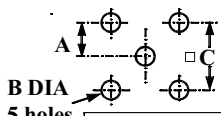
	mm	
	Maxi	mini
A	4.9	4.8
B	2.3	2.2
C	6.95	7.05

P02



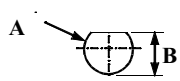
	mm	
	Maxi	mini
A	3.22	3.20
B	2.3	2.2
C	6.95	7.05

P03



	mm	
	Maxi	mini
A	2.59	2.49
B	1.4	1.3
C	5.00	5.16

P04



	mm	
	Maxi	mini
A	5	4.9
B	4.6	4.45

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