

MMBX / MCX / BMR-SPRING

R223 / R113 / R213 / R328

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Introduction



50Ω	DC - 12.4 GHz
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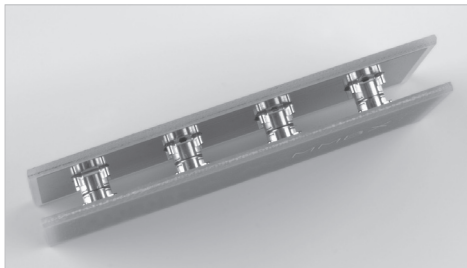
GENERAL

- Snap-on mating
- Microminiature coaxial connectors
- Robust
- Surface mount receptacles
- Fully compatible with automated pick and place machines

APPLICATIONS

- Board to board applications
- Base station
- High density packaging

The MMBX™ connector series is particularly suitable for board to board connection in new generation telecommunication systems. MMBX™ connectors allow a quick connection in a minimum space requirement. Frequency range is DC to 12.4 GHz. SMT connectors are totally compatible with pick and place machines.

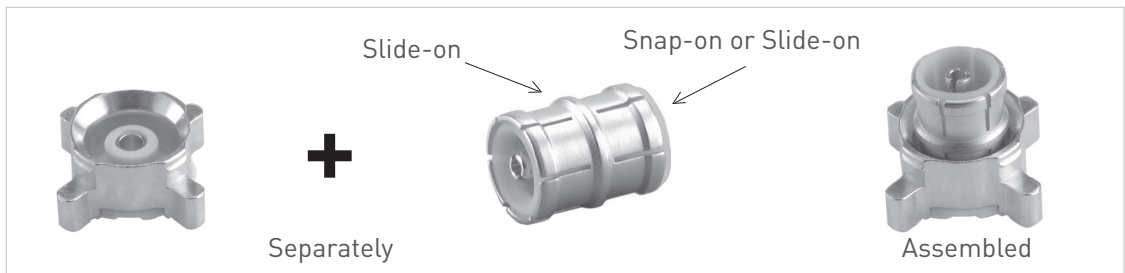


• **Space saving**

Its small space requirement is a main advantage for applications such as board to board connections as the height is only 7 mm.

• **Series Range**

Receptacles and in-series adapters can be either sold separately or with the in-series adapter already inserted in the receptacle. In this case, assembly time will be reduced and you will be sure that the in-series adapter is properly inserted, as it has to be assembled perpendicularly to the receptacle.



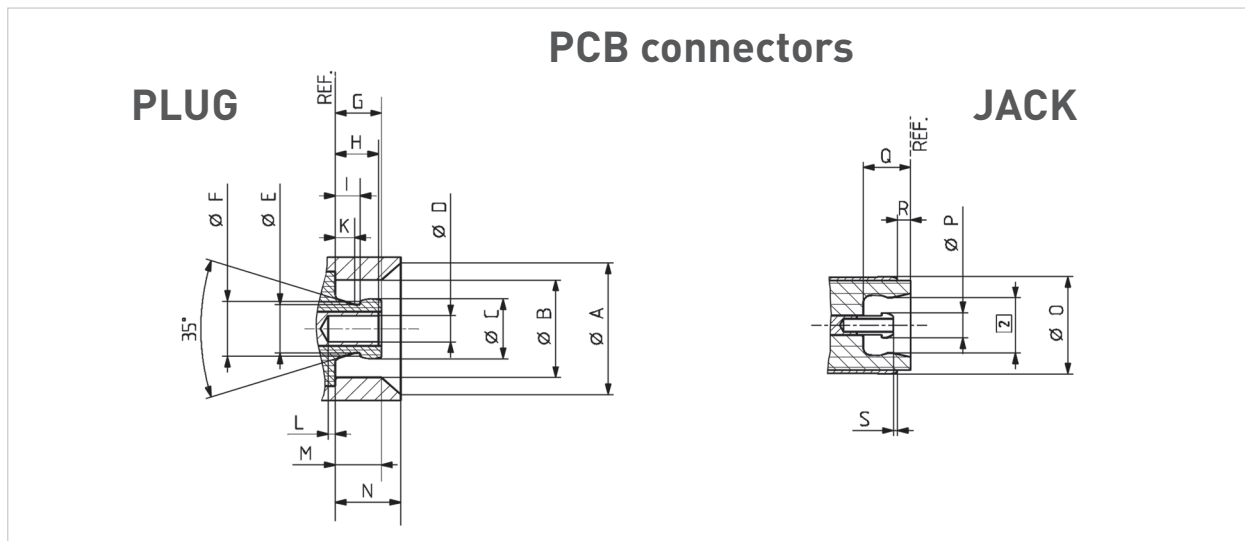
Retention between receptacle and in-series adapter is ensured by the design of the adapter.

- Slide-on/Snap-on: for board to board application, all in-series adapters remain on the same side during disconnection.
- Slide-on/Slide-on

In addition of PCB connectors and in-series adapters, Radiall offers you a wide range of products like straight plugs, right angle plugs and between-series adapters.

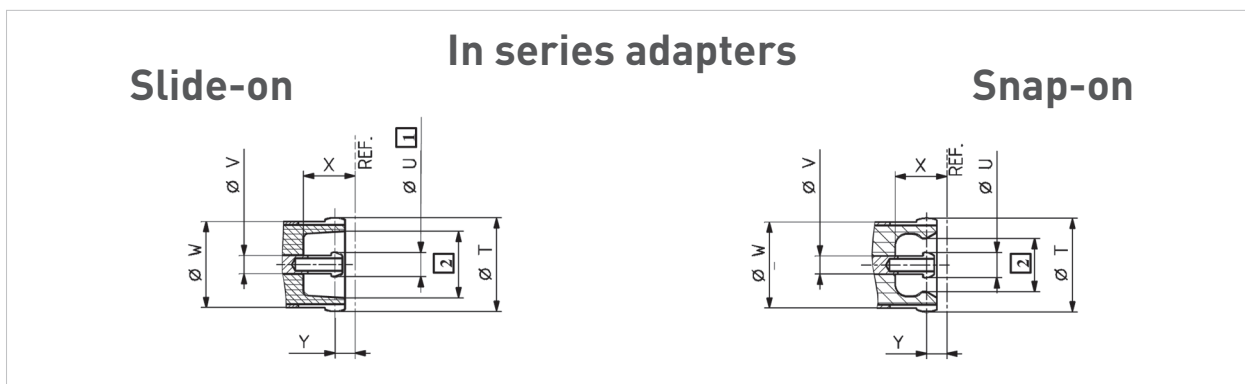
Interface

MMBX



Letter	mm		inch	
	min.	max.	min.	max.
A	5.00 nom.	5.00 nom.	.197 nom.	.197 nom.
B	3.68	3.71	.145	.146
C	2.25	2.30	.088	.090
D	0.98	1.01	.038	.040
E	1.85 nom.	1.85 nom.	.073 nom.	.073 nom.
F	2.10 nom.	2.10 nom.	.083 nom.	.083 nom.
G		1.80		.071
H	1.55	1.75	.061	.069
I	0.90		.035	

Letter	mm		inch	
	min.	max.	min.	max.
K	0.75 nom.	0.75 nom.	.029 nom.	.029 nom.
L	0		0	
M	1.45		.057	
N	2.50 nom.	2.50 nom.	.098 nom.	.098 nom.
O	3.70 nom.	3.70 nom.	.146 nom.	.146 nom.
P	0.95 nom.	0.95 nom.	.037 nom.	.037 nom.
Q	1.85 nom.	1.85 nom.	.073 nom.	.073 nom.
R	0.50 nom.	0.50 nom.	.020 nom.	.020 nom.
S	0.10 nom.	0.10 nom.	.004 nom.	.004 nom.



Letter	mm	inch
T	3.70 nom.	.146 nom.
U	0.95 nom.	.037 nom.
V	0.70 nom.	.027 nom.

Letter	mm	inch
W	3.65 nom.	.144 nom.
X	2.05 nom.	.080 nom.
Z	0.80 nom.	.031 nom.

- 1 Slotted and flared to meet electrical and mechanical requirements
- 2 Dimension to meet electrical and mechanical requirements

Characteristics

Test/characteristics	CECC 22000	Values/remarks
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ELECTRICAL CHARACTERISTICS

Impedance		50Ω
Frequency range		DC - 12.4 GHz
Typical V.S.W.R. straight connectors: 2/50/S 2.6/50/S 2.6/50/D right angle connectors: 2/50/S 2.6/50/S 2.6/50/D	DC - 1 GHz 1.05 1.05 1.05 1.05 1.05 1.05 1.05	1 - 2.5 GHz 1.06 1.06 1.06 1.13 1.06 1.06
Insulation resistance		> 1 GΩ
Dielectric withstanding voltage (sea level) 2.50 2.6/50	4.4.5	500 Vrms. 50 Hz 750 Vrms. 50 Hz
Contact resistance center contact outer contact	4.4.2 4.4.3	≤ 5 mΩ ≤ 1 mΩ

MECHANICAL CHARACTERISTICS

Mechanical endurance	4.7.1	100 matings
Engagement and separation force Engagement Separation	4.5.4	30 N max 8-30 N
Contact captivation	4.5.2	≥ 10 N
Cable retention force 2/50 2.6/50		58 N 110 N
Vibration	4.6.3 - IEC 68-2-6 Fc	MIL-STD-202, Method 204 D, condition A

ENVIRONMENTAL CHARACTERISTICS

Temperature range		-55°C + 155°C
Thermal shock	4.6.7 - IEC 68-2-14 Na	MIL STD 202, method 107G, condition B1
Moisture resistance	4.6.6 - IEC 68-2-3 Ca	MIL STD 202, method 106F
Corrosion	4.6.10 - IEC 68-2-11 Ka	MIL STD 202, method 101, condition B
Vibration	4.6.3 - IEC 68-2-6 Fc	MIL STD 202, method 204D, condition A

MATERIALS

Center & outer contacts		Beryllium copper
Bodies		Brass
Ferrules		Copper
Insulators		PTFE

PLATING

Center & outer contacts		Gold/NPGR
Bodies		NPGR
Ferrules		NPGR

All dimensions are given in mm.
Standard packaging = 100 pieces.

Plugs and PCB receptacles

STRAIGHT PLUGS (male center contact)

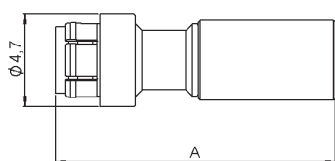
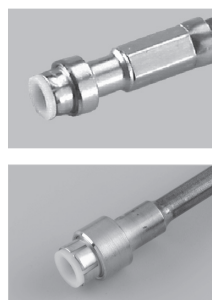


Fig. 1

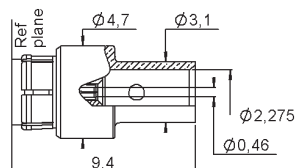


Fig. 2

Cable group	Cable group dia.	Part number	Fig.	A	Captive center contact	Note
RG178/RG196	2/50/S	R223 081 000	1	14.3	yes	Crimp type for flexible cables
RG174/RG316	2.6/50/S	R223 082 000	1	14.5		
RG316	2.6/50/D	R223 083 000	1			
RG405	.085"	R223 062 000	2			Solder type for semi-rigid cables

RIGHT ANGLE PLUGS (male center contact)

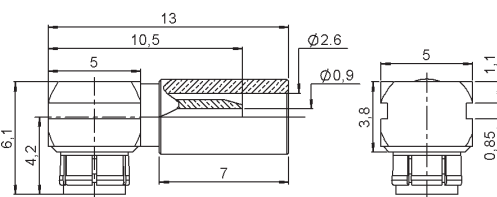
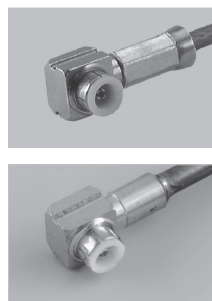


Fig. 1

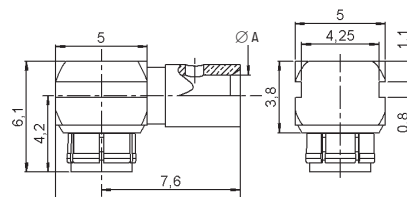


Fig. 2

Cable group	Cable group dia.	Part number	Fig.	A	Captive center contact	Note
RG178/RG196	2/50/S	R223 181 000	1	2.275	yes	Crimp type for flexible cables
RG174/RG316	2.6/50/S	R223 182 000	1			
RG316	2.6/50/D	R223 183 000	1			
RG405	.085"	R223 162 000	2			Solder type for semi-rigid cables

STRAIGHT PCB RECEPTACLES (male center contact)

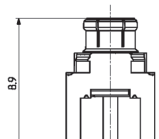
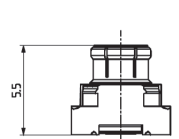
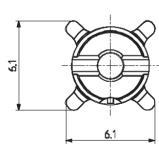
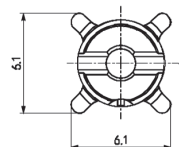


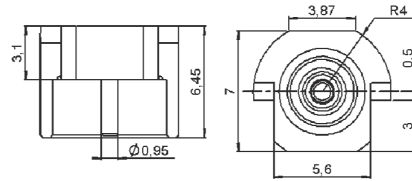
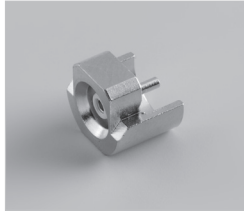
Fig. 1

Fig. 2

Part number	Fig.	Captive center contact	PCB	Assembly instructions	Packaging	Note
R223 434 000	1	yes		M01	bulk 100 pieces	SMT
R223 434 800	1				tape & reel 750 pieces	
R223 435 000	2			P01	bulk 100 pieces	

PCB receptacles

EDGE CARD PCB RECEPTACLES (female center contact)



Part number	Captive center contact	Packaging	Note
R223 423 010	yes	bulk 100 pieces	SMT edge card

STRAIGHT PCB RECEPTACLES (female center contact)

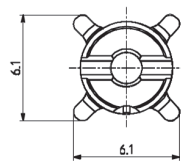
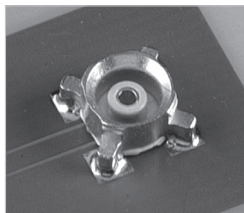


Fig. 1

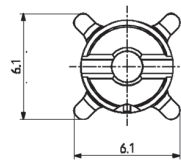


Fig. 2

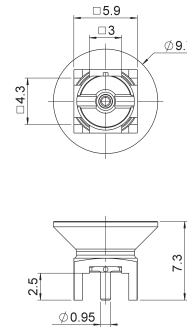


Fig. 3

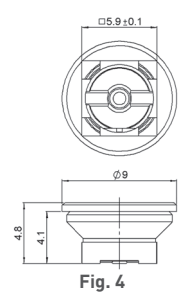
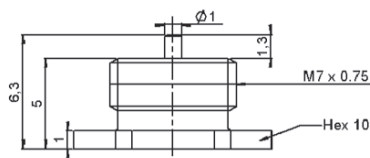
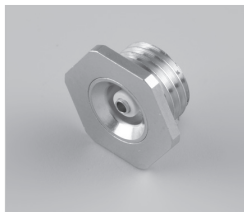


Fig. 4

Part number	Fig.	Captive center contact	PCB	Assembly instructions	Packaging	Note
R223 424 000	1	yes	P01	M01	Bulk 100 pieces	SMT
R223 424 800	1				Tape & reel 750 pieces	
R223 424 870	4			M02	Reel of 750	
R223 425 000	2			Bulk 100 pieces		
R223 425 810	3			Tape & reel 500 pieces		

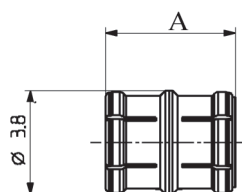
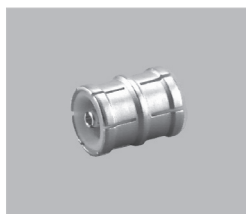
SCREW-ON RECEPTACLE (female center contact)



Part number	Captive center contact	Panel drilling
R223 555 000	yes	P03

Adapters

IN SERIES ADAPTERS (male-male center contact)



Part number	Length A (mm)	Type	Nominal board to board distance
R223 703 000	4.8	Snap-slide	6.7
R223 703 020	9.7	Slide-slide	11.7
R223 703 040	12	Snap-slide	14
R223 703 080	7	Snap-slide	9
R223 720 020	13.6	Slide-slide Bulkhead	-

Other length can be designed upon request: minimum board to board height is 6.7 mm

BETWEEN-SERIES ADAPTERS

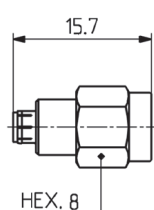


Fig. 1

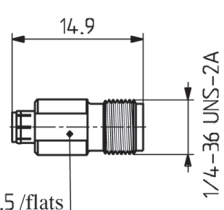


Fig. 2

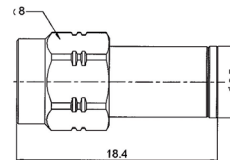


Fig. 3

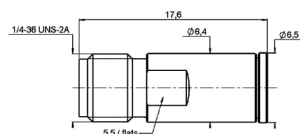


Fig. 4

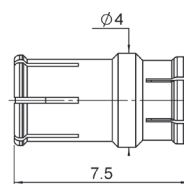
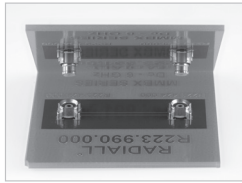


Fig. 5

Part number	Fig.	Series	Packaging
R191 389 100	1	MMBX male/SMA male	Unit
R191 389 200	2	MMBX male/SMA female	
R191 389 300	3	MMBX female/SMA male	
R191 389 400	4	MMBX female/SMA female	
R191 560 000	5	SMP MAX female/MMBX male snap	Bulk 100 pieces

MMBX

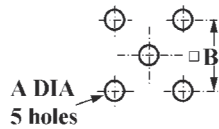
Demo boards



Part number	Note
R223 990 000	2 SMT receptacles
R223 991 000	2 SMT receptacles with adapters

Panel drilling

P01



	mm		inch	
	maxi	mini	maxi	mini
A	1.4	1.2	.055	.047
B	5.16	5	.203	.197

P02



	mm		inch	
	maxi	mini	maxi	mini
A	7.27	7.13	.283	.281

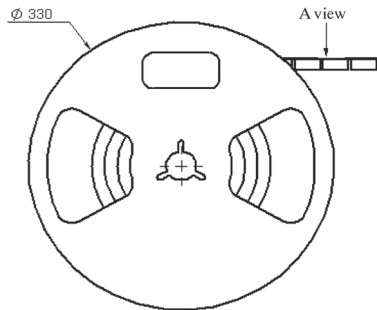
P03



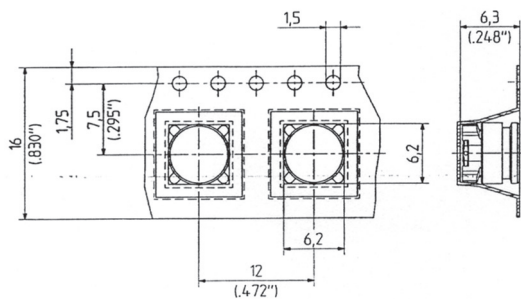
Threading	
ØA	M7 x 0.75

Receptacle packaging

The tape is delivered on reels of 330 mm diameter



A VIEW

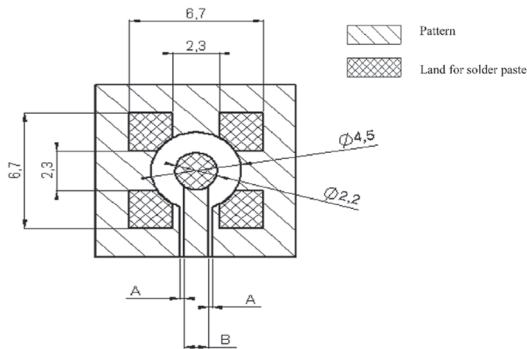


Part number	Note
R223 424 800	including 750 receptacles
R223 434 800	

Assembly instructions

M01

Part number			
R223 424 000	R223 424 800	R223 434 000	R223 434 800



COPLANAR LINE

Pattern and signal are on the same side.

The material of PCB is epoxy resin (FR4) (Er = 4.6).

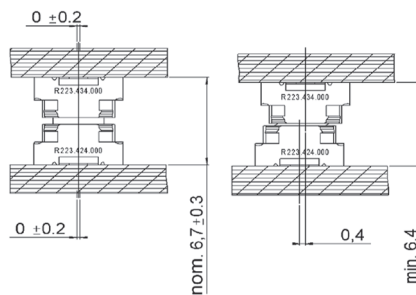
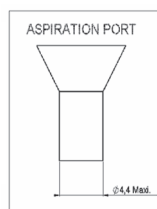
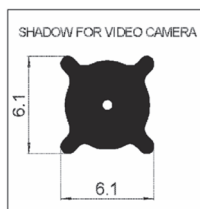
The solder resist should be printed except for the land pattern on the PCB.

**APPLICATION 75Ω
WITH B = 0.55 mm**

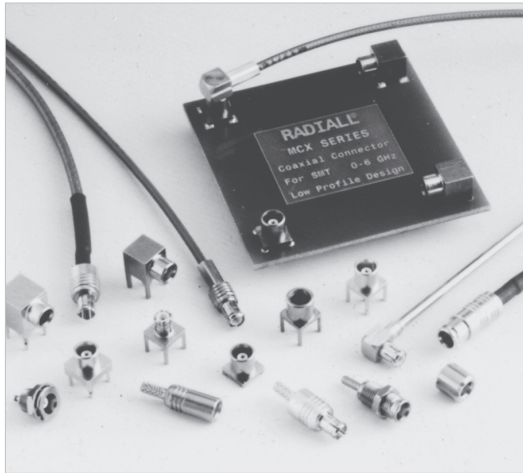
PCB thickness (mm)	Coplanar line A (mm)
0.8	0.350
1.0	0.360
1.2	0.365
1.6	0.375

**APPLICATION 50Ω
WITH B = 1.2 mm**

PCB thickness (mm)	Coplanar line A (mm)
0.8	0.190
1.0	0.200
1.2	0.205
1.6	0.210



Introduction



50Ω - 75Ω

DC - 6 GHz

GENERAL

- Subminiature coaxial connectors
- "Push-pull" snap-on mating
- Complies with specification CECC 22220
- CEI standard 1169-36

APPLICATIONS

50Ω models

- Wireless communications
- Civil and military radio-telecommunication equipment

75Ω models

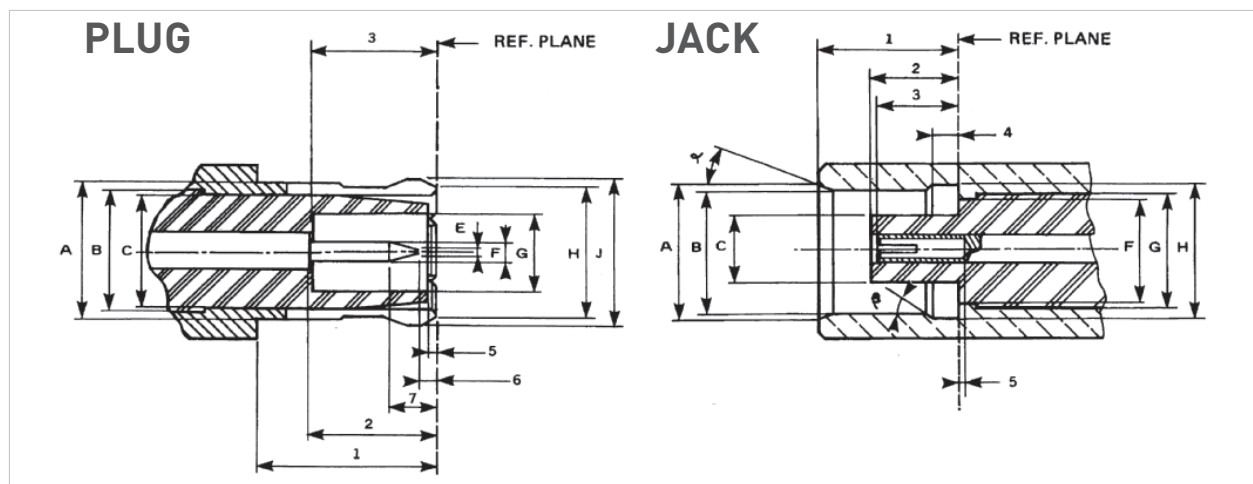
- Videocommunication
- Television broadcasting

The MCX series utilizes the SMB series electrical line and features a particularly simple, compact and robust interface.

The MCX series is 30 % smaller than the SMB.

The MCX series helps to **miniaturize equipment**. It lowers wiring connection costs through its full crimp and solder crimp versions as the centre contact of the straight models can be either crimped or soldered. It optimizes PCB layouts with its range of models for PCBs including surface mount and press-fit receptacles.

Interface



ITEM	mm		inch	
	min.	max.	min.	max.
1	4.15	-	.163	
2	2.80	3.20	.110	.126
3	2.80		.110	
5	0	0.30	0	.012
6	0.15		.006	
7		1.20		.047
A		3.40		.134
B	3.05 nom.		.120 nom.	
C		3.00		.118
E		0.25		.010
F	0.48	0.53	.019	.021
G	2.00		.079	
H		3.60		.142
J		3.80		.150

ITEM	mm		inch	
	min.	max.	min.	max.
1	4.00	4.12	.157	.162
2	2.60	2.80	.102	.110
3	2.30	2.80	.090	.110
4	0.75	0.85	.029	.033
5	0		0	
a	18°	22°	18°	22°
β	43°	47°	43°	47°
A	3.80		.150	
B	3.42	3.48	.135	.137
C		1.98		.078
F		3.00		.118
G	3.05 nom.		3.05 nom.	
H	3.60	3.75	.142	.148

Characteristics

Test/characteristics	Values/remarks
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ELECTRICAL CHARACTERISTICS

Impedance	50Ω and 75Ω		
Frequency range	DC - 6 GHz		
Typical V.S.W.R. straight styles: .085 2.6/50/S right angle styles: .085 2.6/50/S	1 GHz 1.04 1.06 1.03 1.04	2.5 GHz 1.08 1.09 1.06 1.07	6 GHz 1.13 1.12 1.10 1.10
Insulation resistance	1 000 MΩ		
Contact resistance (mΩ) center contact outer contact	Initial ≤ 5 ≤ 2.5	After environment ≤ 15 ≤ 7.5	
Voltage rating (V.R.M.R.) • Cable RG 196/U - RG 188A/U - .047" • ∅ 2.6 double screen • RG 405/U - .085	At sea level 170 V rms max 335 V rms max 250 V rms max	At 70.000 Ft 45 V rms max 85 V rms max 65 V rms max	
Dielectric withstanding voltage • Cable RG 196/U - RG 188A/U - .047" • ∅ 2.6 double screen • RG 405/U - .085	At sea level 500 V rms max 750 V rms max 750 V rms max	At 70.000 Ft 100 V rms max 100 V rms max 100 V rms max	
Power	P = 120W at 1.8 GHz, T = 40°C at sea level, VSWR = 1.1 for a straight plug MCX for [2.6/50/D cable		

MECHANICAL CHARACTERISTICS

Mechanical endurance	500 matings		
Engagement Separation force	≤ 14.2 lbs - 63 N max ≥ 1.8 Lbs - 8N ≤ 4.5 lbs 20 N		
Cable retention force RG 196A/U RG 188A/U ∅ 2.6/50 Ω double screen .047" RG 405/U-.085	≥ 7.2 lbs - 32 N ≥ 11.9 lbs - 53 N ≥ 24.1 lbs - 107 N ≥ 9.7 lbs - 43 N ≥ 34.9 lbs - 155 N		
Contact captivation	Axial force 2.25 Lbs 10 N		

ENVIRONMENTAL CHARACTERISTICS

Operating temperature	-55°C +155°C
Temperature cycling	CECC 22220 paragraph 4-6-5
Thermal shock	CECC 22220 paragraph 4-6-7
High temperature test	CECC 22220 paragraph 4-7-2
Corrosion (salt spray)	CECC 22220 paragraph 4-6-10
Vibration	CECC 22220 paragraph 4-6-3

MATERIALS AND PLATING

	Materials	Platings
Bodies and male contacts	Brass	Gold/BBR (bodies)
Female center contacts	Beryllium copper	Gold
Ferrules	Brass	
Insulators	PTFE	

All dimensions are given in mm
Standard packaging = 100 pieces

Characteristics

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

ELECTRICAL CHARACTERISTICS

Impedance	50Ω
Frequency range	DC - 6 GHz
Typical V.S.W.R. straight connectors right angle connectors	1.3 1.35
Mating cycles	100
Temperature range	-40°C to +85°C

MATERIALS

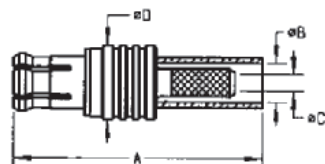
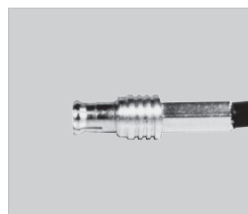
Connector body	Brass
Insulator	PTFE
Female center contact	Bronze/Beryllium copper
Male center contact	Brass
Outer contact	Brass

PLATING AND PACKAGING

Body	Gold
Center contact	Gold
Outer contact	Gold
Female	Nickel
Packaging	100 pieces bulk
	500 pieces reel
	Unit packaging

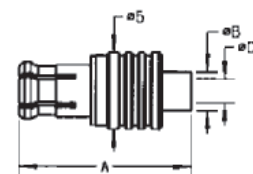
Plugs

STRAIGHT PLUGS, FULL CRIMP TYPE, FOR FLEXIBLE CABLES



Cable group	Cable group dia.	Part number	Imp. (Ω)	Dimensions (mm)				Captive center contact	Finish
				A	B	C	D		
RG178/RG196	2/50/S	R113 081 000	50	16.1	2.55	1.1	5	no	Gold
RG174/RG316	2.6/50/S	R113 082 000		16.1	2.95	1.65		Gold	
		R113A 082 000		18.7	-	1.55		Gold ECO version	
RD316	2.6/50/D	R113 083 000	16.2	3.25	1.65	5.8	yes	Gold	
		R113A 083 000	18.7	-	1.55			Gold ECO version	
RG179	2.6/75/S	R213 082 007	75	18.2	2.95	1.7	5.8	BBR	
RD179	2.6/75/D	R213 083 007		18.3	3.25				

STRAIGHT PLUGS, SOLDER TYPE, FOR SEMI-RIGID CABLES



Cable group	Cable group dia.	Part number	Imp. (Ω)	Dimensions (mm)			Captive center contact	Finish
				A	B	C		
RG405	.085"	R113 053 000	50	11.3	3	2.25	no	Gold

RIGHT ANGLE PLUGS, CRIMP TYPE, FOR FLEXIBLE CABLES (captive center contact)

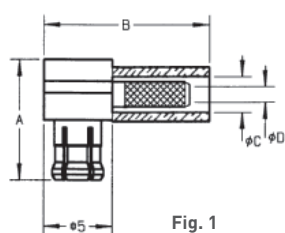


Fig. 1

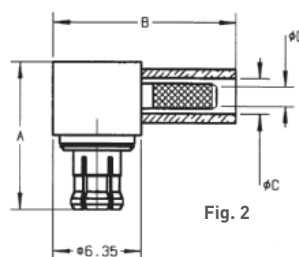
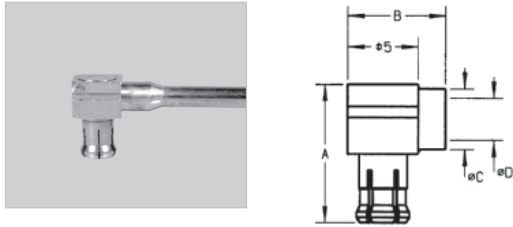


Fig. 2

Cable group	Cable group dia.	Part number	Fig.	Imp. (Ω)	Dimensions (mm)				Finish
					A	B	C	D	
RG178/RG196	2/50/S	R113 181 000	1	50	8.6	11.9	2.55	1.1	Gold
RG174/RG316	2.6/50/S	R113 182 000				11.9	2.95	1.65	Gold ECO version
		R113A 182 000				14.1	-	1.55	
RD316	2.6/50/D	R113 183 000	8.6	11.9	3.25	1.65	Gold		
RG179	2.6/75/S	R213 182 007	2	75	10.6	13.3	2.95	1.7	BBR
RD179	2.6/75/D	R213 183 007					3.25		

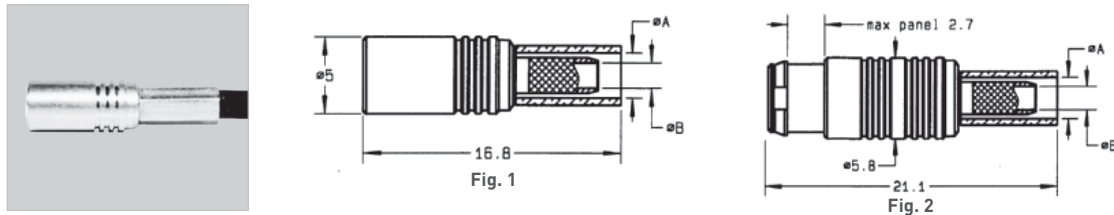
Plugs and jacks

RIGHT ANGLE PLUGS, SOLDER TYPE (captive center contact)



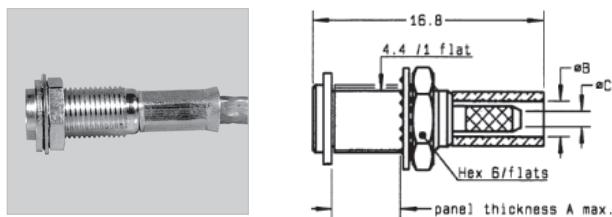
Cable group	Cable group dia.	Part number	Imp. (Ω)	Dimensions (mm)				Finish
				A	B	C	D	
.047" semi-rigid	.047"	R113 151 000	50	8.6	7	2.1	1.25	Gold
RG405	.085"	R113 153 000				3.1	2.25	
RG178/RG174/RG405	2/50/S - 2.6/50/S - .085"	R113 161 000		8	8	3.0	2.35	

STRAIGHT JACKS, FULL CRIMP TYPE, FOR FLEXIBLE CABLES



Cable group	Cable group dia.	Part number	Fig.	Imp. (Ω)	Dimensions (mm)		Captive center contact	Panel drilling	Finish
					A	B			
RG174/RG316	2.6/50/S	R113 240 000	1	50	2.95	1.65	yes	P01	Gold
RG179	2.6/75/S	R213 238 007	2	75	2.95	1.7			BBR (Snap mount Panel thickness 2.5 _{-0.1})

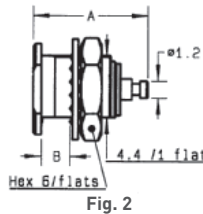
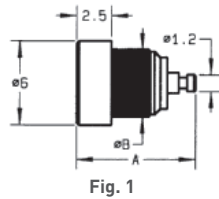
STRAIGHT BULKHEAD JACKS, FULL CRIMP TYPE, FOR FLEXIBLE CABLES



Cable group	Cable group dia.	Part number	Imp. (Ω)	Dimensions (mm)			Captive center contact	Panel drilling	Finish
				A	B	C			
RG174/RG316	2.6/50/S	R113 310 000	50	5	2.95	1.65	yes	P02	Gold

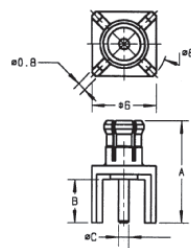
Receptacles

STRAIGHT FEMALE PANEL RECEPTACLES (captive center contact)



Part number	Fig.	Imp. (Ω)	Dimensions (mm)		Panel drilling	Finish	Note
			A	B			
R113 402 220	1	50	8.7	4.8	P03	BBR	Press-in mount
R113 553 000	2		8.65	2.5	P02	Gold	Recessed front mount

STRAIGHT MALE PCB RECEPTACLES (captive center contact)



Part number	Imp. (Ω)	Dimensions (mm)			Panel drilling	Finish
		A	B	C		
R113 425 000	50	9.65	4.1	0.98	P05	Gold

STRAIGHT FEMALE PCB RECEPTACLES (captive center contact)

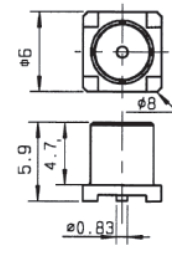
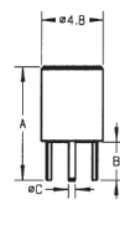
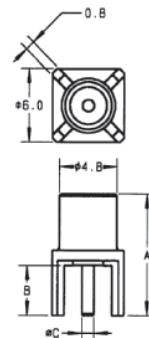
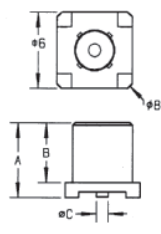
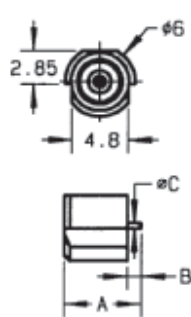


Fig. 1

Fig. 2

Fig. 3

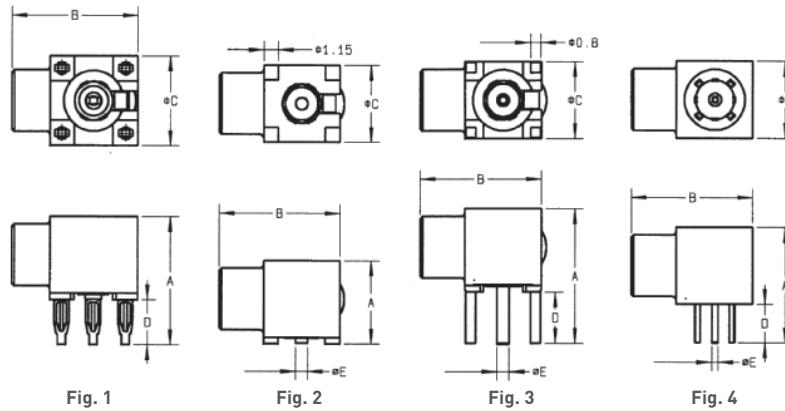
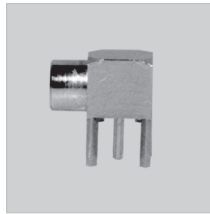
Fig. 4

Fig. 5

Part number	Fig.	Imp. (Ω)	Dimensions (mm)			Assembly instructions	Panel drilling	Finish	Note									
			A	B	C													
R113 423 000	1	50	6.9	1.4	0.5	M01	P05	Gold	SMT/Edge-card									
R113 424 000	2		5.9	4.7	0.96				P05	Gold	SMT							
R113 424 010											SMT/reel 100 pieces							
R113 424 020											SMT/reel 500 pieces							
R113A 424 020											SMT/reel 500 pieces ECO version							
R113 426 000	3		10	4.1	0.98				P05	BBR	Gold	100 pieces ECO version						
R113A 426 000																		
R113 426 020	4		9	3	0.5				P06	Gold	Gold	Space saving on PCB						
R113 427 000												5	10	4.1	0.71	P05	Gold	SMT/reel 100 pieces
R213 424 800																		
R213 426 000	3	75	10	4.1	0.71	P05	Gold											

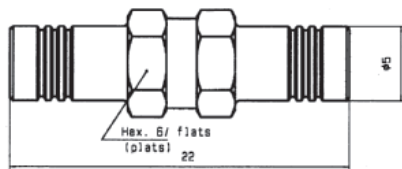
Receptacles and in series adapters

RIGHT ANGLE FEMALE PCB RECEPTACLES (captive center contact)



Part number	Fig.	Imp. (Ω)	Dimensions (mm)					Assembly instructions	Panel drilling	Finish	Note
			A	B	C	D	E				
R113 661 000	1	50	10	10	7	3.5		P04	Gold	Press-fit PCB mount	
R113 664 000	2		6.5	9.5	6	0.96	M01			SMT	
R113A 664 120										SMT/reel 500 pieces	
R113 665 000	3		10.5		4			P05	BBR		
R113 665 020											
R113 666 000	4			9	9.4		3	0.5	P06	Gold	Space saving pattern
R213 664 800	2	75	6.5	9.5	6		0.83	M01	SMT/reel 100 pieces		
R213 665 000	3		10.5				4	0.83	P05		

IN SERIES ADAPTERS (female - female)



Part number	Imp. (Ω)	Finish
R113 704 000	50	Gold

Panel drilling

P01



A	MM		INCH	
	maxi	mini	maxi	mini
5	4.97	0.197	0.196	

P02



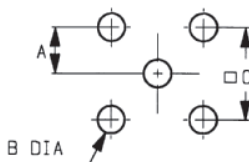
A	B	MM		INCH	
		maxi	mini	maxi	mini
5	4.58	4.9	4.46	0.197	0.176

P03



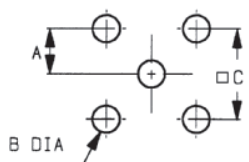
A	MM		INCH	
	maxi	mini	maxi	mini
4.77	4.74	0.188	0.187	

P04



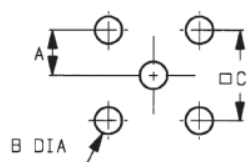
A	B	C	MM		INCH	
			maxi	mini	maxi	mini
2.565	1.09	5.105	2.515	0.94	5.055	0.101
						0.1
						0.043
						0.037
						0.201
						0.199

P05



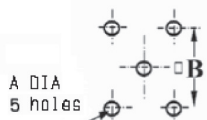
A	B	C	MM		INCH	
			maxi	mini	maxi	mini
2.56	1.4	5.13	2.52	1.3	5.03	0.101
						0.099
						0.055
						0.051
						0.202
						0.198

P06



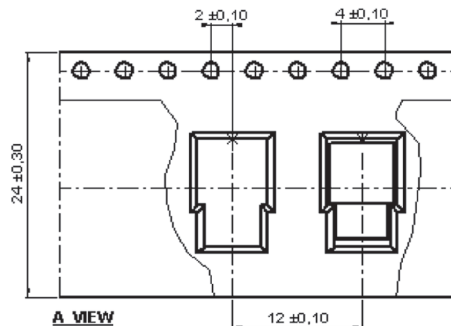
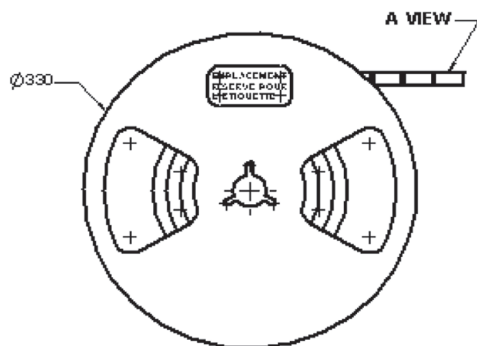
A	B	C	MM		INCH	
			maxi	mini	maxi	mini
1.30	0.89	2.59	1.24	0.79	2.49	.051
						.049
						.035
						.031
						.102
						.098

P07



A	B	MM		INCH	
		maxi	mini	maxi	mini
1.4	5.13	1.3	5.03	0.055	0.051

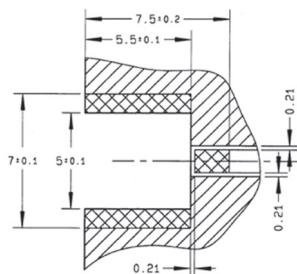
packaging



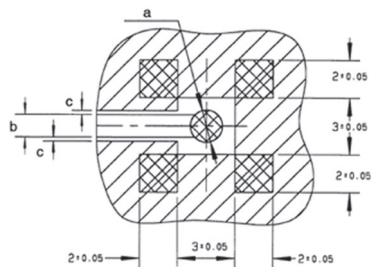
Assembly instructions

M01

Part number
R113 423 000



Part number	a	b	c	
R113 424 000 R113 424 010 R113 424 020	R113A 424 020 R113 664 000	$\varnothing 1.7 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	1.2	0.21
R113A 664 120		$\varnothing 1.05$	1.2	0.21
R213 424 800		$\varnothing 1.57 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	1	0.63



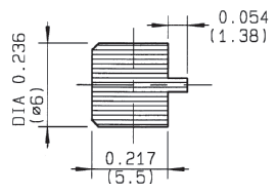
- Pattern
- Land for solder paste

COPLANAR LINE

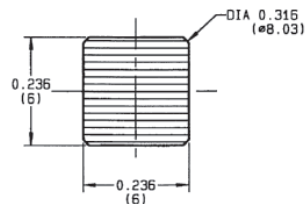
Pattern and signal are on the same side.
 Thickness of PCB: .063 (1.6 mm).
 The material of PCB is the epoxy resin of glass fabrics bacs (Er = 4.8).
 The solder resist should be printed

VIDEO SHADOW

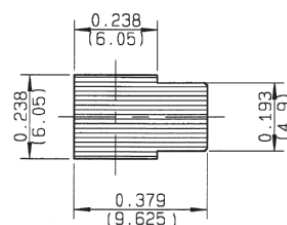
Part number
R113 423 000



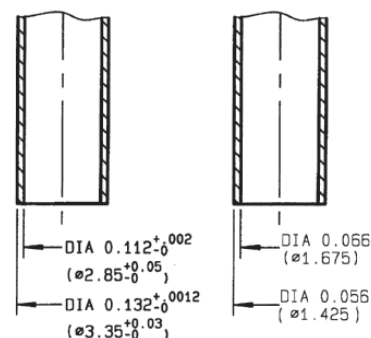
Part number	
R113 424 000 R113 424 010	R113 424 020 R113A 424 020 R213 424 800



Part number
R113 664 000 R213 664 800
R113A 664 120



Vacuum nozzle dimensions



Introduction

50Ω

DC - 8 GHz

GENERAL

- Robust
- 50 Ω
- DC – 8 GHz
- High power up to 350W at 2.7 GHz
- Board to board distance misalignment at least 0.078" (2 mm), custom misalignment of 3 mm+
- Tilt misalignment 6° max

Board to board connectors are becoming more and more popular for the use in RF equipment, which makes the system extra compact, reliable and cost effective compared to the traditional cable assembly solutions. Even in very high power and high frequency applications, connecting boards, modules or panels by rigid connectors are growing in popularity.

The high-performance and robust BMR-Spring can handle a minimum board to board (or rack and panel) distance tolerance of 0.078" (2 mm) with custom misalignment of 3 mm or more. It also features a 6° tilt (radial travel). It has an operating frequency range of DC-8 GHz, a 1.1 max VSWR guaranteed up to 3 GHz, and it can handle up to 350 watts of power at 2.7 GHz.

BMR-Spring also features a unique non-slotted spherical interface for improved electrical performance, high vibration and shock resistance, and an 80dB of shielding up to 3 GHz. A self-alignment mechanism makes the BMR-Spring particularly ruggedized for blind-mate applications. The spring-loaded adapters are symmetrical to avoid any assembly issues.

A typical BMR-Spring board to board system is made of three parts: slide-on receptacle, symmetrical adapter, and snap-on receptacle.

Custom configurations are available for board to board, module to module or rack and panel applications.

APPLICATIONS

- Broadcast
- RF components
- Wireless communications
- Military equipment



Slide-on receptacle



Symmetrical adapter



Snap-on receptacle

BMR-SPRING

Characteristics

CHARACTERISTICS

Impedance	50Ω
Frequency	DC – 8 GHz
Typical VSWR (board-to-board connection)	1.1 at 3 GHz
Insertion loss	0.1Vf dB
Power handling	350W at 2.7 GHz
RF leakage	-80dB to 3GHz, radially misalignment 0 mm
Mating cycles	100 cycles
Minimum distance between PCB	30 mm
Radial misalignment tolerance	6° max
Axial misalignment tolerance	At least 0.078" (2 mm), custom misalignment of 3 mm+
Temperature range	-40°C +120°C

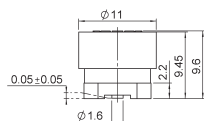
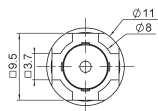
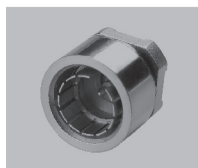
MATERIAL AND PLATINGS

Parts	Materials	Platings
Body	Brass/Bronze	NPGR/BBR
Male center contact	Brass	NPGR
Female center contact	Beryllium copper	NPGR
Gasket	Silicon rubber	
Insulator	PTFE/PEEK	

NPGR: Nickel Phosphorous Gold Radial
BBR: Bright Bronze Radial

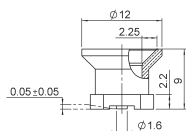
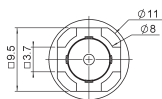
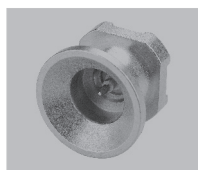
Receptacle and adapter

STRAIGHT SNAP-ON MALE RECEPTACLE



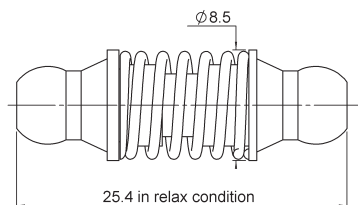
Part Number	Captive Center Contact	Packaging	Note
R328 424 002	Yes	Tape and reel 250 pcs	SMT
R328 424 012	Yes	Bulk 100 pcs	SMT

STRAIGHT SLIDE-ON FEMALE RECEPTACLE



Part Number	Captive Center Contact	Packaging	Note
R328 424 500	Yes	Tape and reel 250 pcs	SMT
R328 424 510	Yes	Bulk 100 pcs	SMT

IN-SERIES ADAPTER



Part Number	Series	Packaging
R328 705 000	BMR-Spring Female / BMR-Spring Female	Bulk 100 pcs

Adapter and sample kit

BETWEEN-SERIES ADAPTERS

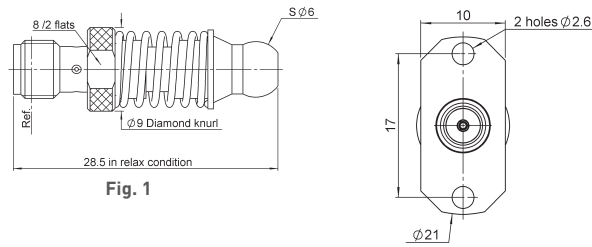
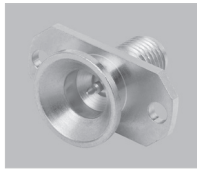


Fig. 1

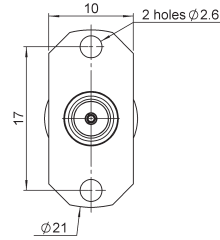


Fig. 2

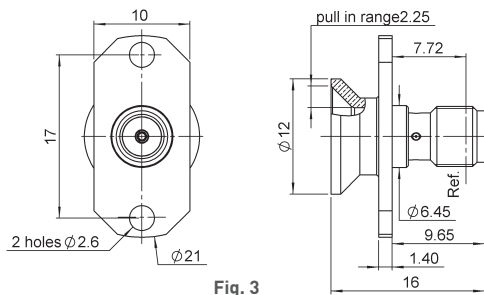
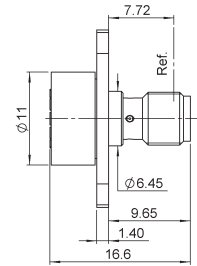


Fig. 3

Part Number	Series	Packaging
R191 569 000	BMR-Spring Female/SMA Female	Unit
R191 971 100	BMR-Spring snap-on Male/SMA Female	Unit
R191 972 100	BMR-Spring slide-on Male/SMA Female	Unit

SAMPLE KIT

Part Number	Packaging
R328 895 000	Unit