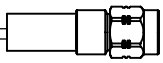
commercial SMA

INTRODUCTION



The RADIALL commercial SMA connectors have been specially designed for applications where low installed costs are of the utmost importance. They are easy, fast to assemble and reliable and offer the perfect solution for high volume applications requiring high level performance like civil telecommunications, datacommunications or test and measurement.

- **Full compatibility :**

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

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

- **Wide range :**

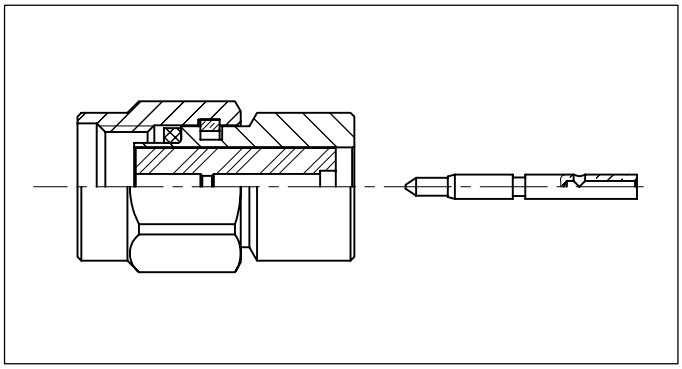
The commercial SMA range features models which are adapted to offer a solution for every standard coaxial flexible or semi-rigid cable as well as PCB models with traditional through-hole pins or solder pads for SMT applications.

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

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

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

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



- **Space-saving size :**

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

- **Convenient 3-piece design :**

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

- **Fast and reliable cable attachment :**

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

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

- **Industry adapted packaging :**

Standard packaging is 100 pieces bulk-pack. Unit packaging is available upon request. The PCB models can also be delivered in tube or tape & reel packaging.

- **Competitive pricing :**

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

- **Center contact captivation :**

Our connectors have a captive center contact.

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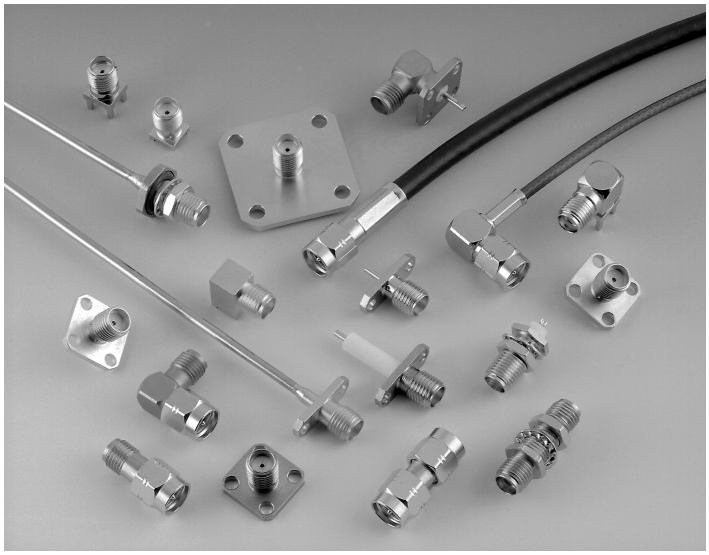
INTRODUCTION



50 Ω	DC - 18 GHz

GENERAL

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

APPLICABLE STANDARDS

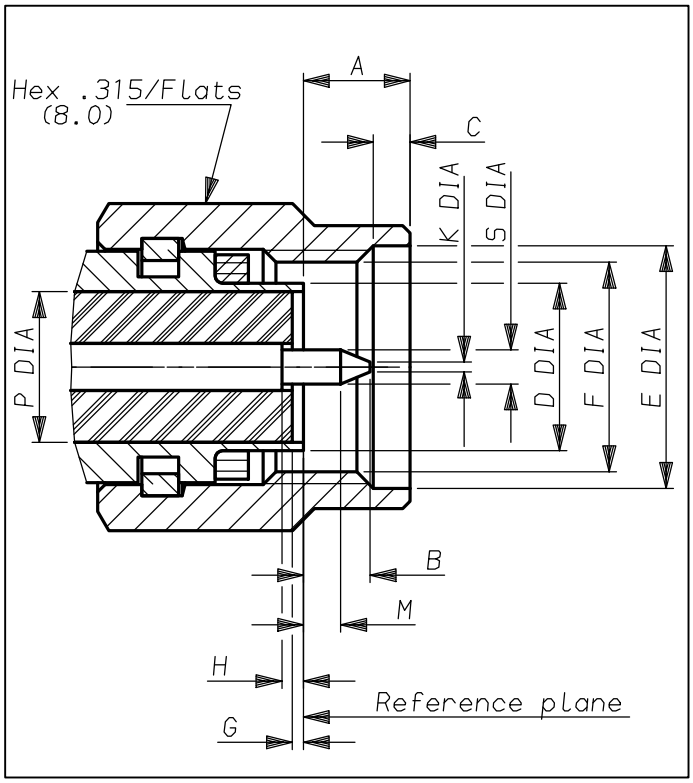
- MIL- C - 39012
- IEC 169-1
- CECC 22110
- CECC 22111 - 801 to 808
- BS 9210 N006

APPLICATIONS

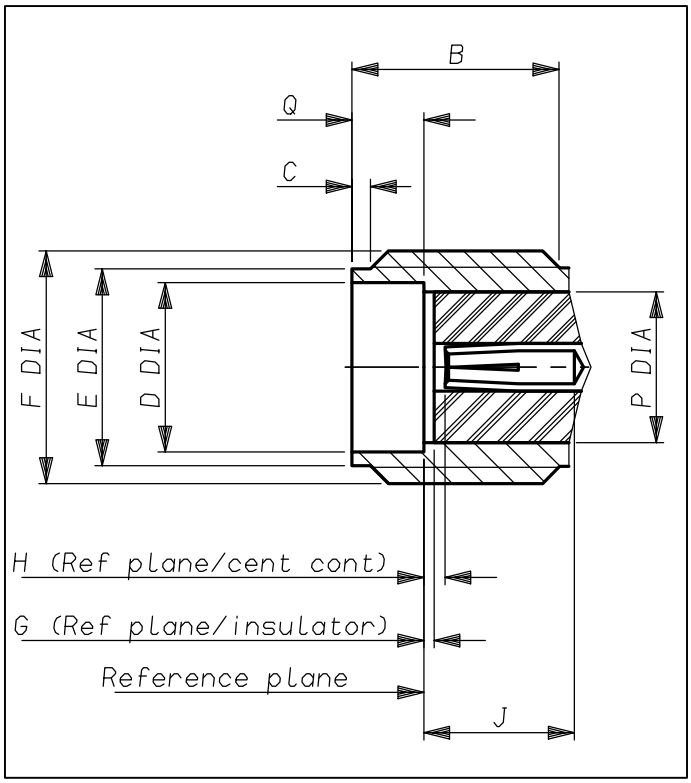
- Telecommunication / Datacommunication
  - cellular networks (GMS, DCS, PCN, ...)
  - cordless systems (DECT, CT2, ...)
  - wireless equipment (WLL, ...)
  - positioning systems (GPS, ...)
  - Internet equipment
  - ...
- Aeronautics
- Measurement and test systems
- General electronics

INTERFACE

PLUG



JACK



PLUG

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

JACK

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

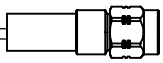
*NOTA : - means behind ref plane

* statistics quotation : .0539 ± .0055 (.0594 max)/(1.37 ± 0.14)(1.51 max)
1) Coupling nut against on datum 1
2) Coupling nut against on datum 2

All dimensions are given in mm.

commercial SMA

CHARACTERISTICS



MIL-C-39012 paragraph	VALUES / REMARKS

GENERAL

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

ELECTRICAL

Insulation resistance	**3-11**	5 000 MΩ mini.			
Contact resistance *Outer conductor* *Inner conductor*	**3-16**	Initial 3 mΩ 2 mΩ		After test 4 mΩ 3 mΩ	
V.S.W.R. max up to : **18 GHz for semi-rigid cable - 12.4 GHz for right angle connector (SR) - 12.4 GHz for flexible cable** *Straight Connector* *Right angle connector*	**3-14**	**.085"** 1.07 + .01F 1.10 + .01F	**.141"** 1.05 + .01F 1.10 + .01F	**2.6 / 50 / S** 1.15 + .02F 1.15 + .03F	**5 / 50 / D** 1.15 + .01F 1.15 + .02F
Dielectric withstanding voltage in VRMS	**3-17**	750	1000	750	1000
Working voltage in VRMS (sea level)		335	500	250	335
Working voltage in VRMS (70 000 ft)		85	125	65	85
RF testing voltage at 5MHz in VRMS	**3-23**	500	670	500	670

MECHANICAL

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

ENVIRONMENTAL

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

MATERIALS

Body	Brass
Center contacts female male	Beryllium copper Brass
Insulators	PTFE teflon
Gaskets	Silicone rubber

FINISH

Bodies	BBR or Gold plated
Center contacts	Gold plated

STANDARD PACKAGING : 100 pieces **- UNIT** : add W after the P/N.

RADIALL®