

# SMP Series

## Description

The SMP interface is a subminiature interface in the same scale as MMCX connectors but offers a frequency range of DC to 40 GHz. It is commonly used in miniaturized high frequency coaxial modules and is offered in both push-on and snap-on mating styles.

## Applications

- Aerospace
- Board to Board Interconnect
- Broadband
- Instrumentation
- Mil/Aero
- Optical Nodes and Routers
- Telecommunications

## Features

- Designed to accommodate both radial and axial misalignment.
- Cable connector designs for both flexible and semi-rigid cables.
- Interface according to MIL-STD-348A/326



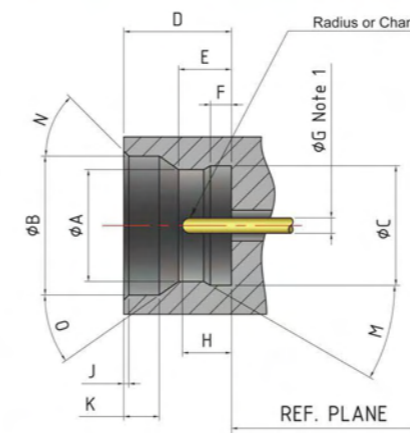
## Specification

### SMP 50 ohm 0-40 GHZ

SMP bullet connectors at high frequencies up to DC to 40 GHz. The SMP bullet connector was developed to meet the need for a smaller high frequency compact design that incorporates ease of use and functionality. The SMP bullet connector is the heart of this unique design. The bullet is designed to allow the joining of two RF Modules by captivating the bullet between the two shrouds. This mounting method allows for higher density of connectors and by design the SMP bullet connector allows for misalignment to compensate for tolerance stack up. With significant withdrawal forces on the full detent shroud the SMP connector has become a standard for quick and effective interconnects using both semi-rigid and flexible cables. The "Push-on" design allows the install to mate connectors without the need for threads or wrenches. Today's industry requires both innovation and flexibility, and the SMP bullet connector meets that challenge.

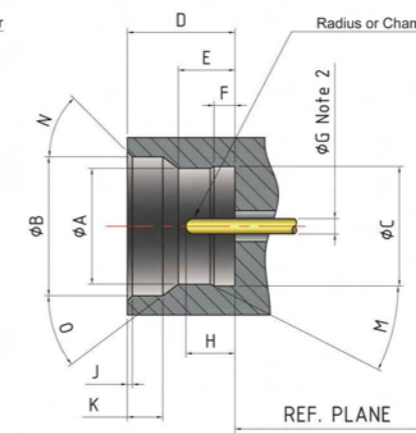
## Interface Mating Dimensions

SMP Plug (Full Detent Type)



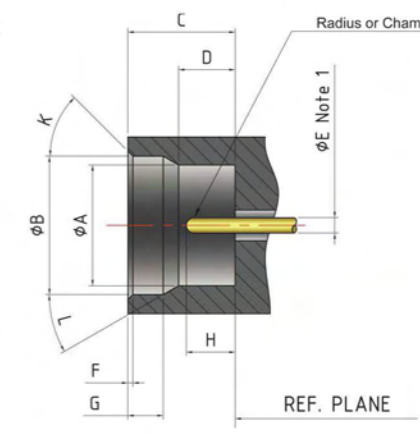
Note :  
1.Pin may not be supplied with shroud, refer to the applicable specification.

SMP Plug (Limited Detent Type)



Note :  
1.Metric equivalents are given for general information only.  
2.Pin may not be supplied with shroud, refer to the applicable specification.

SMP Plug (Smooth Bore Type)



Note :  
1.Pin may not be supplied with shroud, refer to the applicable specification.

### PLUG(FULL DETENT TYPE)

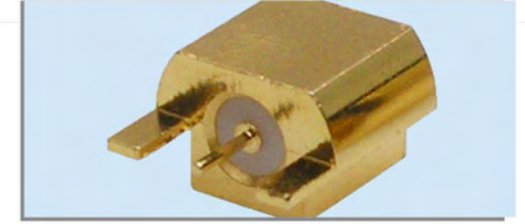
Letter	Milimeters (inches)	
	Minimum	Maximum
A	2.90(.114)	2.95(.116)
B	3.53(.139)	3.68(.145)
C	3.15(.124)	3.20(.126)
D	2.74(.108)	2.84(.112)
E	1.30(.051)	1.45(.057)
F	0.52(.0205)	0.59(.0235)
G	0.36(.014)	0.40(.016)
H	1.14(.045)	1.40(.055)
J	0.08(.003)	0.20(.008)
K	0.84(.033)	0.94(.037)
M	30° REF	
N	40°	50°
O	35° REF	

### PLUG(LIMITED DETENT TYPE)

Letter	Milimeters (inches)	
	Minimum	Maximum
A	3.00(.118)	3.10(.122)
B	3.53(.139)	3.68(.145)
C	3.15(.124)	3.20(.126)
D	2.74(.108)	2.84(.112)
E	1.37(.054)	1.52(.060)
F	0.52(.0205)	0.59(.0235)
G	0.36(.014)	0.40(.016)
H	1.14(.045)	1.40(.055)
J	0.08(.003)	0.20(.008)
K	0.84(.033)	0.94(.037)
M	30° REF	
N	40°	50°
O	35° REF	

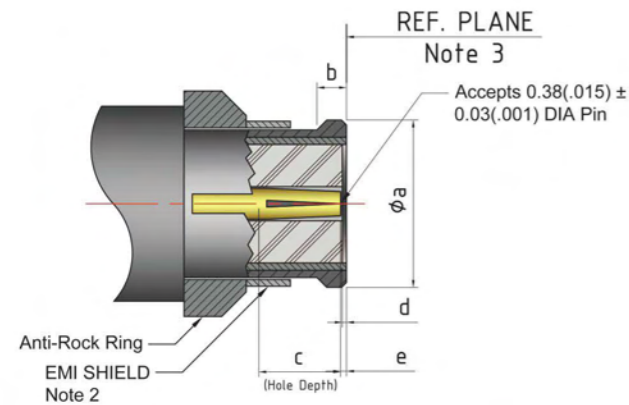
### PLUG(SMOOTH BORE TYPE)

Letter	Milimeters (inches)	
	Minimum	Maximum
A	3.12(.123)	3.23(.127)
B	3.53(.139)	3.68(.145)
C	2.74(.108)	2.84(.112)
D	1.37(.054)	1.52(.060)
E	0.36(.014)	0.40(.016)
F	0.08(.003)	0.20(.008)
G	0.84(.033)	0.94(.037)
H	1.14(.045)	1.40(.055)
K	40°	50°
L	35° REF	



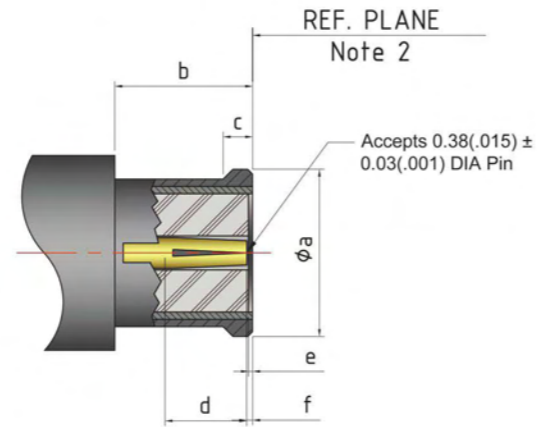
## Interface Mating Dimensions

SMP Jack (CABLE)



- Note :
- 1.Pin may not be supplied with shroud, refer to the applicable specification.

SMP Jack (Uncable)



- Note :
- 1.Interface shall meet the force to engage and disengage requirements in accordance with DSCC drawing 94007.
  - 2.From and dimension of outer conductor to meet electrical and mechanical requirements.

### JACK(CABLE)

Letter	Milimeters (inches)	
	Minimum	Maximum
a	—	3.43(.135)
b	0.46(.018)	0.64(.025)
c	1.78(.070)	—
d	0.00 Dielectric Projection	
e	Center Contact Flush to 0.20(.008)Recession	

### JACK(UNCABLE)

Letter	Milimeters (inches)	
	Minimum	Maximum
a	—	3.43(.135)
b	2.84(.112)	—
c	0.46(.018)	0.64(.025)
d	1.78(.070)	—
e	0.00 Dielectric Projection	
f	Center Contact Flush to 0.20(.008)Recession	

### Electrical

Impedance	50 ohm
Frequency Range	0 to 40 GHz
VSWR	DC to 26.5 GHz → 1.15 max. 26.5 to 40 GHz → 1.35 max.
Voltage Rating	170 volts rms max.
Dielectric Withstanding Voltage	500 volts rms at sea level
Contact Resistance	Center Contact: 6.0 milliohms max. Outer Contact: 2.0 milliohms max.
RF Leakage	-80dB min. at 3GHz -65dB min. form 3 to 26.5GHz min.
Insetion Loss	.4 dB max (straight) .6 dB max (right angle)
Insulator Resistance	5,000 Megohms min

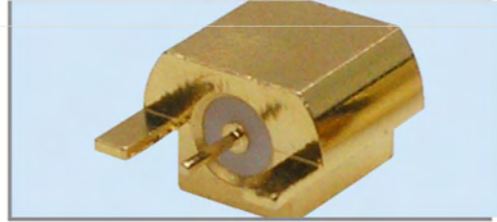
### Mechanical & Environmental

Durability	100 matings min.(Full Detent) 500 matings min. (Limit ed Detent) 1000 matings min. (Smooth Bore)
Engagement force	15 lbs Max (Full Detent) 10 lbs Max (Limited Detent) 2 lbs Max (Smooth Bore)
Disengagement force	5 lbs Min(Full Detent) 2 lbs Min(Limited Detent) 5 lbs Min (Smooth Bore)
Vibration	MIL-STD-202, Method 204, Condition D
Salt Spray	MIL-STD-202, Method 101, Condition B
Shock	MIL-STD-202, Method 213, Condition D
Temperature Range	-65° C to +165° C
Thermal Shock	MIL-STD-202, Method 107, Condition B
Moisture Resistance	MIL-STD-202, Method 106

### Material



Parts Name	Material	Plating
Body	Shield: Stainless steel Male:Beryllium-Copper or Brass Female:Beryllium-Copper or Brass	Passivated Gold Gold
Center Contact	Beryllium-Copper	Gold
Insulator	PTFE	None

Note: Other Material/Finish is Available on Request.


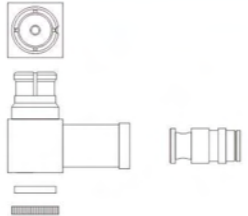


## Crimp Termination for Flexible Cable

### SMP Straight Single Crimp Plug


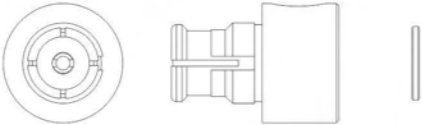
		Hand Tool	See Appendix B
		Cable	RG178, 168A, 196
		Cable Assembly Instruction	See Appendix A

### SMP R/A Jack


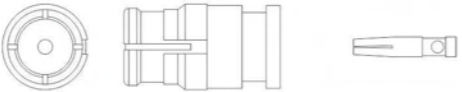
		Hand Tool	See Appendix B
		Cable	RG178/U
		Cable Assembly Instruction	See Appendix A

## Direct Solder for Semi-Rigid Cable

### SMP R/A Jack


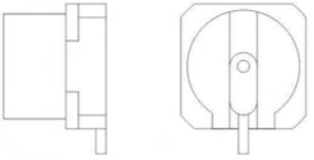
		Hand Tool	Nil
		Cable	RG405/U
		Cable Assembly Instruction	See Appendix A

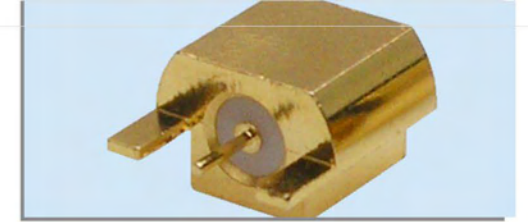
### SMP Straight Jack

		Hand Tool	Nil
		Cable	RG405/U
		Cable Assembly Instruction	See Appendix A Code M


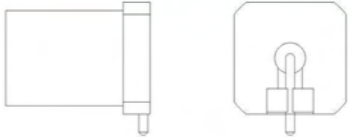
## Printed Circuit Board, Straight or R/A Terminal

### SMP Plug, SMT Type

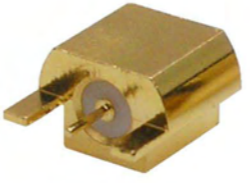

		Hand Tool	Nil
		Cable	Nil
		PCB Soldering Pattern	Refer to S-CONN's Drawing




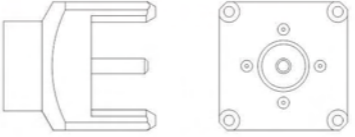
### SMP Plug, SMT Type

		Hand Tool	Nil
		Cable	Nil
		PCB Soldering Pattern	Refer to S-CONN's Drawing

### SMP Plug, Edgecard Mount

		Hand Tool	Nil
		Cable	Nil
		PCB Soldering Pattern	Refer to S-CONN's Drawing

### SMP Jack, PCB Type

		Hand Tool	Nil
		Cable	Nil
		PCB Soldering Pattern	Refer to S-CONN's Drawing