

Amphenol  
**SV MICROWAVE**<sup>®</sup>  
RF Connectors & Components

SMP Coaxial  
Connectors



SMP Coaxial Connectors

# SMP Connectors

## Interface

SV Microwave offers a complete line of SMP connectors that conform to DSCC 94007, 94008 and MIL-STD-348. The SMP connector was developed to meet an industry need for a smaller high frequency compact design that incorporated ease of use and functionality. The SMP bullet is the heart of this unique design.

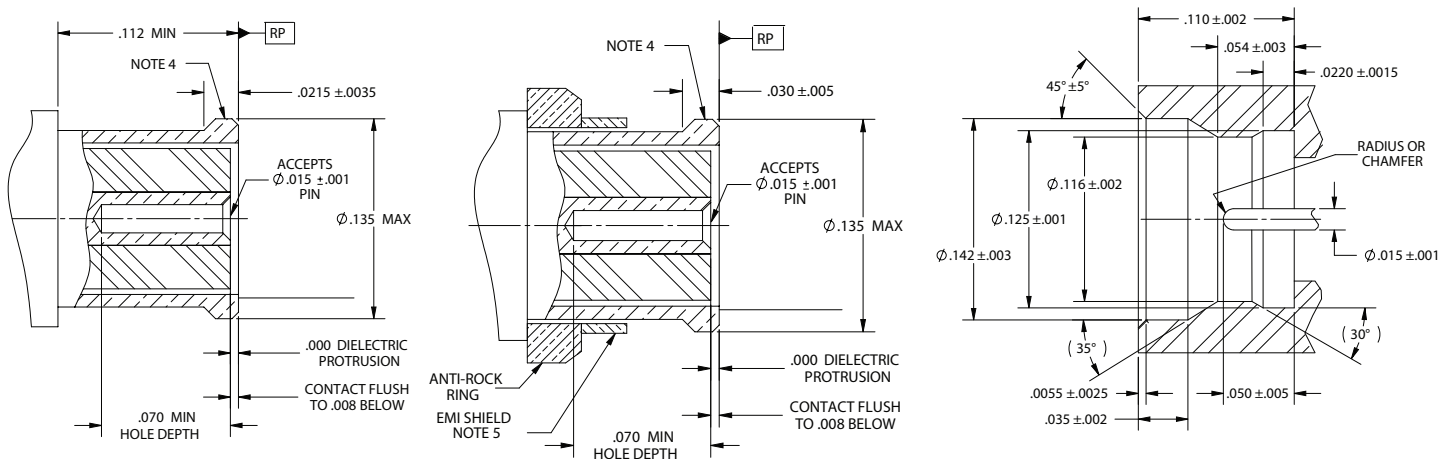
The bullet is designed to allow joining of two R.F. Modules by captivating the bullet between the two shrouds. This mounting method allows for higher density of connectors and by design the SMP bullet allows for misalignment to compensate for tolerance stack up. With significant withdraw forces on the full detent shroud, the SMP has become a standard for quick and effective interconnects using both semi-rigid and flexible cables. The "Push-on" design allows the installer to mate connectors without the need for threads or wrenches. Today's industry requires both innovation and flexibility and the SMP connector meets that challenge.

## Interface Mating Dimensions

### Socket (Adapter)

### Socket (Cable)

### Shroud (Full Detent)



1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Interface shall meet the force to engage and disengage requirements in accordance with the appropriate DSCC drawing.
4. Form and dimension of outer conductor to meet electrical and mechanical requirements.
5. EMI shield configuration optional: Shall not prevent proper engagement of detent required. To meet mechanical and electrical requirements of DSCC drawing 94008.

# SMP Connectors - Specifications

## Material and Finish

Bullet Adapter Body	Beryllium Copper per ASTM B196, Copper Alloy UNS C17300, Temper TD04 Gold per ASTM B488, Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1
Shroud (Hermetically Sealed with Corning® 7070 Glass)	Kovar® per ASTM-F15, Stainless Steel per AMS 5640, Alloy UNS S30300 Free Machining Type 303, Condition A, Passivated per AMS-QQ-P-35, Type II Gold per ASTM B488, Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1
Shroud Non-Hermetic	Stainless per AMS 5640, Alloy UNS S30300 Free Machining Type 303, Condition A, Passivated per AMS-QQ-P-35, Type II Gold per ASTM B488, Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1
Center Contact (Socket)	Beryllium Copper per ASTM B196, Copper Alloy UNS C17300, Temper TD04 Gold per ASTM B488, Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1
Insulator	Teflon per ASTM D1710

## Electrical

Frequency	DC to 40 GHz
Nominal Impedance	50 Ohms
VSWR	<b>Bullets</b> 1.10:1 max.: DC to 23 GHz 1.15:1 max.: 23 to 26.5 GHz 1.30:1 max.: 26.5 to 40 GHz
	<b>Cable Connectors</b> 1.20:1 max.: DC to 18 GHz 1.35:1 max.: 18 to 26.5 GHz 1.40:1 max.: 26.5 to 40 GHz
Insertion Loss (Adapters)	.10 dB x $\sqrt{f}$ (where f = GHz) dB
Insertion Loss (Cable Connectors)	.12 dB x $\sqrt{f}$ (where f = GHz) dB
Voltage Rating	335 VRMS max. at sea level
RF Leakage (Fully mated)	-80 dB min. DC to 3 GHz -65 dB min. from 3 to 26.5 GHz
Temperature Rating	-65°C to +165°C
Dielectric Withstanding Voltage	500 VRMS min. at sea level
Insulation Resistance	5,000 megohms min.
Center Contact (Socket) Resistance	6.0 milliohms max.
Outer Contact Resistance	2.0 milliohms max.

## Mechanical

Captivation – Center Contacts (Adapters and Right Angle Connectors Only)	
Axial Force	1.5 lbs. min.
Mating Forces	
Force to Engage	Full detent 15.0 lbs. max.; limited detent 10.0 lbs. max.; smooth bore 2.0 lbs. max.
Force to Disengage	Full detent 5.0 lbs. max.; limited detent 2.0 lbs. max.; smooth bore 0.5 lbs. max.
Durability (Mating Cycles)	
Adapters	Full detent 100 max.; limited detent 500 max.; smooth bore 1,000 max.
Cable Connectors	100 cycles
Axial Displacement	.000/.010 inch (.00/.254 mm)
Radial Misalignment	± .010 inch (.254 mm); ± .020 inch (.508 mm) DSCC 94007ZSP-6SC only

## Environmental

Shock	MIL-STD-202, Method 213, Condition I (100 Gs)
Vibration	MIL-STD-202, Method 204, Condition D (20 Gs)
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C (70,000 ft.) (190 VRMS)
Thermal Shock	MIL-STD-202, Method 107, Condition B (High Temperature +165°C)

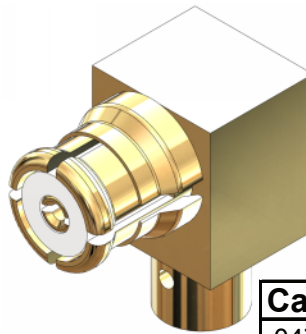
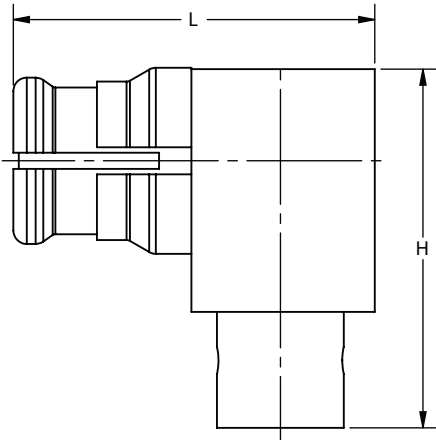
# SMP Cable Connectors

## Straight Female



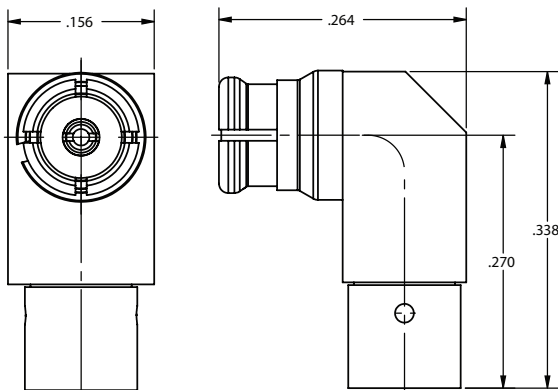
Cable	DSCC P/N	P/N	OAL
.047	94008ZCG-2	1203-4000	.265
.085	94008ZCG-1	1204-4000	.265
RG-178	--	1221-4004	.250
RG-316	--	1221-4005	.300

## Right Angle Female



Cable	DSCC P/N	P/N	L	H
.047	94008ZCG-4	1213-4007	.265	.220
.085	94008ZCG-3	1214-4001	.270	.240
RG-178	--	1222-4006	.268	.266
RG-316	--	1221-4006	.268	.338

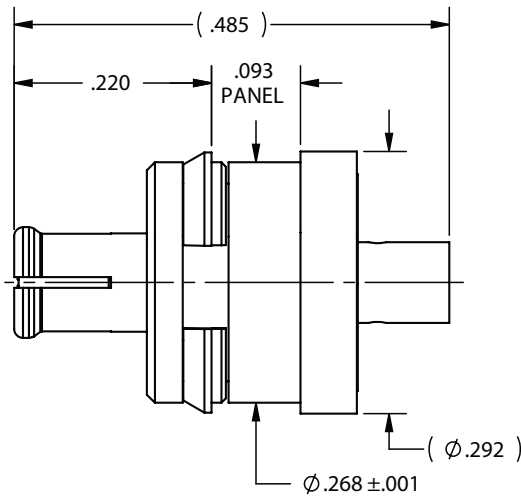
## Swept Right Angle Female



Cable	P/N
.047	1222-4004
.085	1222-4005

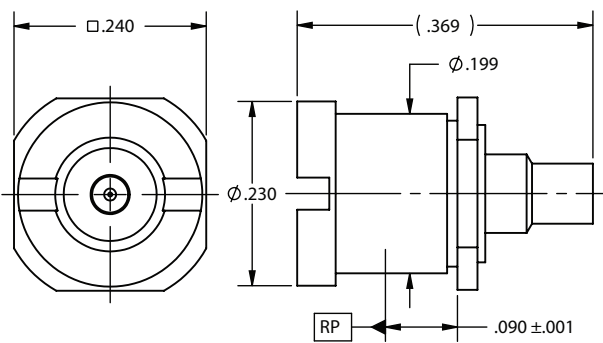
# SMP Cable Connectors

## Straight Female, Snap in Panel, Float Mount



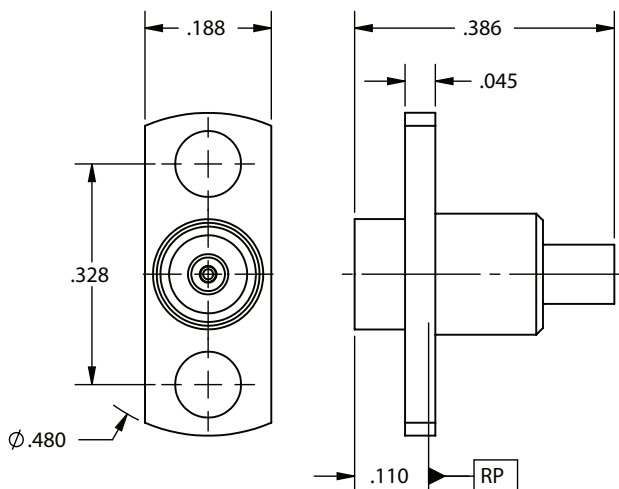
Cable	P/N
.047	1221-6001
.085	1204-6000

## Straight Male, Bulkhead Mount



Cable	.047	.085
Detent	P/N	P/N
CM	SF1211-6060	SF1211-6063
LD	SF1211-6059	SF1211-6062
FD	SF1211-6058	SF1211-6061

## Straight Male, Two Hole Flange Mount



Cable	.047	.085
Detent	P/N	P/N
SB	SF1211-6022	SF1211-6023
LD	SF1211-6021	SF1211-6024
FD	SF1233-6000	SF1211-6025

# SMP Connectors

## Male Shroud, Two Hole Flange Mount, No Contact



P/N	DSCC P/N	Detent	DIM A	DIM B	DIM C	DIM D
SF1254-6000	94007ZSP-3	FD	.328	.187	.098	.480
SF1254-6001	94007ZSP-3L	LD	.328	.187	.098	.480
SF1254-6002	--	SB	.328	.187	.098	.480
SF1254-6003	94007ZSP-4	FD	.481	.223	.102	.625
SF1254-6004	94007ZSP-4L	LD	.481	.223	.102	.625
SF1254-6005	--	SB	.481	.223	.102	.625
SF1254-6006	94007ZSP-5	FD	.282	.165	.073	.400
SF1254-6007	94007ZSP-5L	LD	.282	.165	.073	.400
SF1254-6008	--	SB	.282	.165	.073	.400

## Straight Male Two Hole Flange Mount, Field Replaceable, Accepts .012" Pin



P/N	Detent	DIM A	DIM B	DIM C	DIM D	DIM E
SF1211-66069	FD	.116	.165	.625	.400	.102
SF1211-66070	LD	.120	.165	.625	.400	.102
SF1211-66071	SB	.125	.165	.625	.400	.102
SF1211-66072	FD	.116	.190	.625	.400	.102
SF1211-66073	LD	.120	.190	.625	.400	.102
SF1211-66074	SB	.125	.190	.625	.400	.102
SF1211-66075	FD	.116	.190	.485	.350	.102
SF1211-66076	LD	.120	.190	.485	.350	.102
SF1211-66077	SB	.125	.190	.485	.350	.102

## Straight Male Thread-In, .018" Contact



Detent	P/N
SB	SF1211-66114
LD	SF1211-66113
FD	SF1279-6001

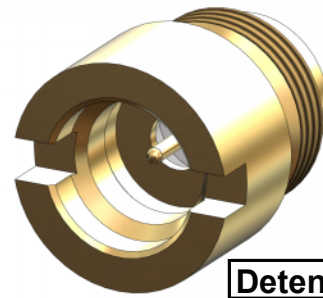
# SMP Connectors

## Straight Male Thread-In Terminal, .018" Contact



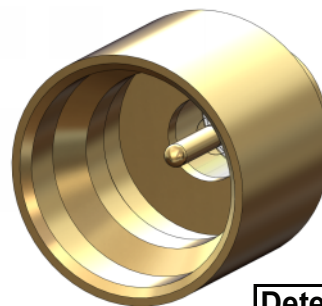
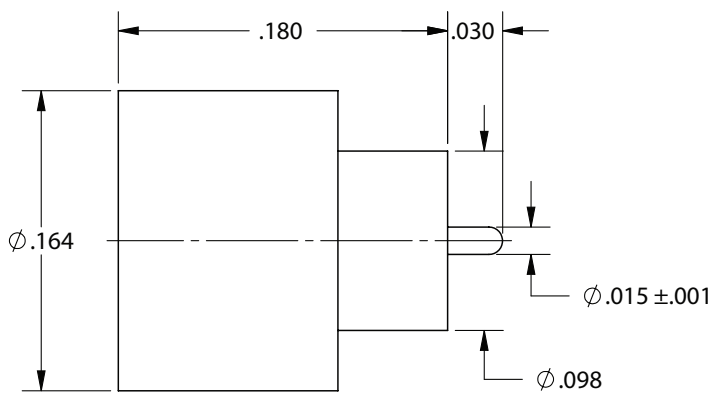
Detent	P/N
SB	SF1211-6037
LD	SF1211-6036
FD	SF1211-6035

## Straight Male Thread-In Hermetic, .015" Contact



Detent	P/N
SB	1211-40008
LD	1279-4002
FD	1279-4001

## Male Solder In Hermetic, .015" Contact



Detent	P/N
SB	1211-6043
LD	1211-6042
FD	1211-6041

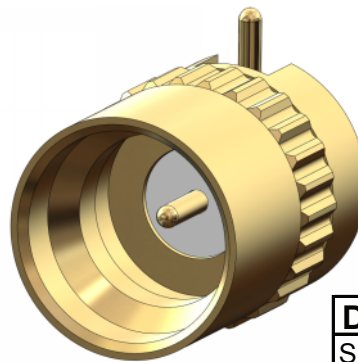
# SMP Connectors

## Male Press In Shroud, No Contact



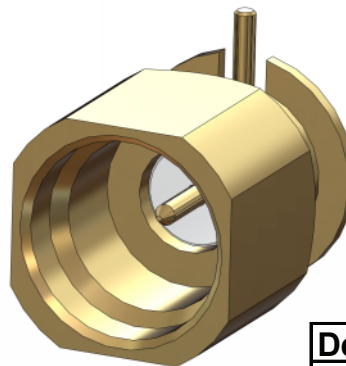
Detent	P/N
SB	SF1211-66102
LD	SF1211-66101
FD	SF1211-66100

## Male Press In, R/A Contact



Detent	P/N
SB	1211-66127
LD	1211-66126
FD	1211-4000

## Male Surface Mount, R/A Contact

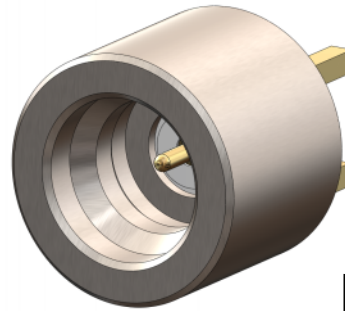
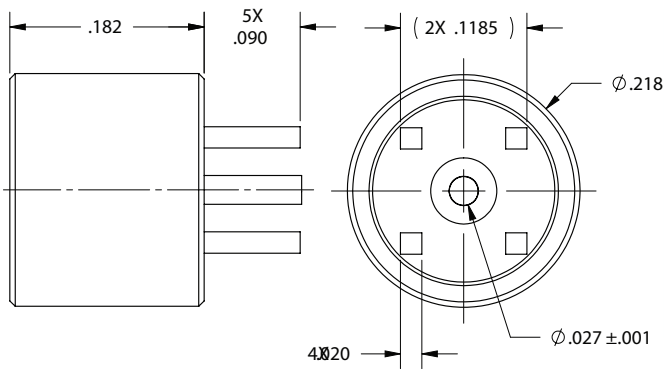


Detent	P/N
SB	1211-40001
LD	1211-40004
FD	1211-40003



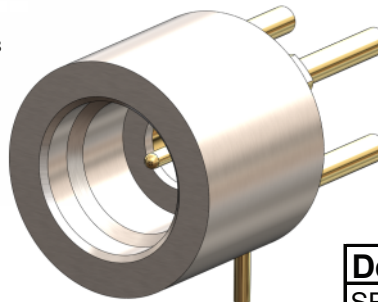
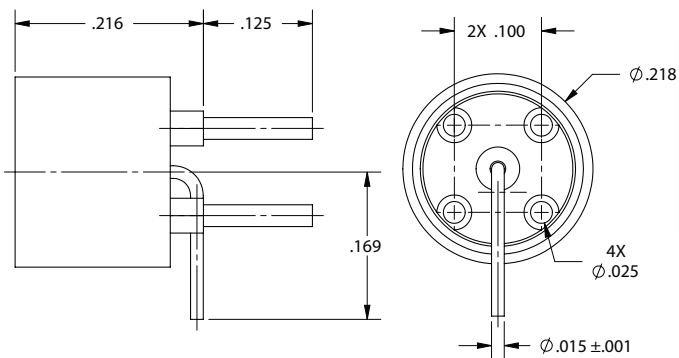
# SMP Connectors

## Male PCB Mount, 4 Leg, Straight Contact



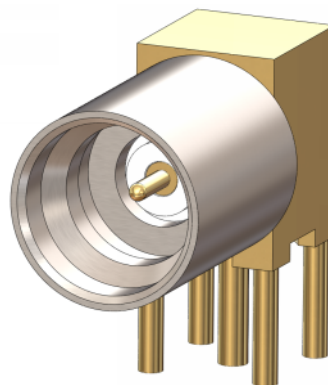
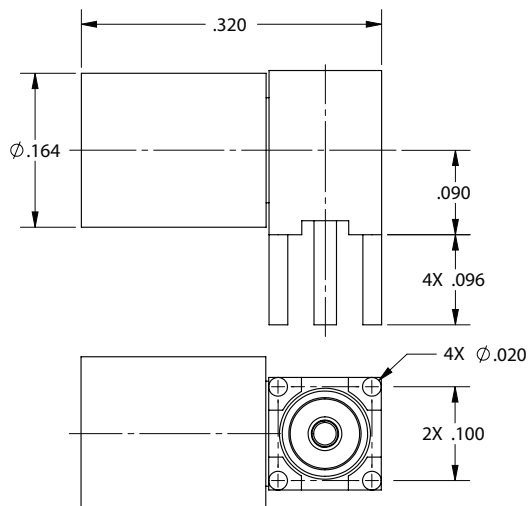
Detent	P/N
SB	SF1211-6045
LD	SF1211-6044
FD	SF1287-6001

## Male PCB Mount, 4 Leg, Right Angle Contact



Detent	P/N
SB	SF1211-40002
LD	SF1211-40006
FD	SF1211-40007

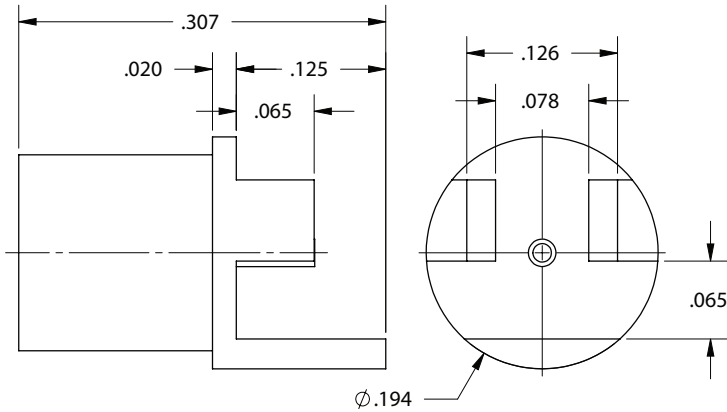
## Male Right Angle Body, PCB Mount, 4 Leg, Straight



Detent	P/N
SB	SF1212-6002
LD	SF1212-6001
FD	SF1212-6000

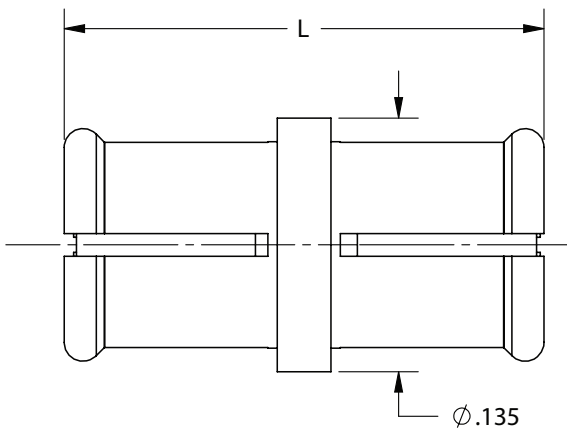
# SMP Connectors

## Straight Male PCB Edge Mount, .015" Contact



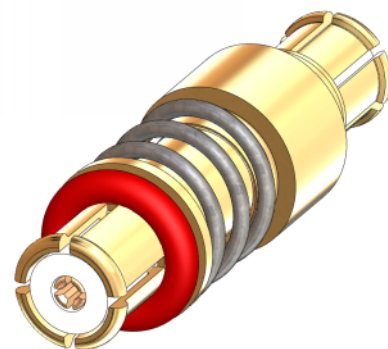
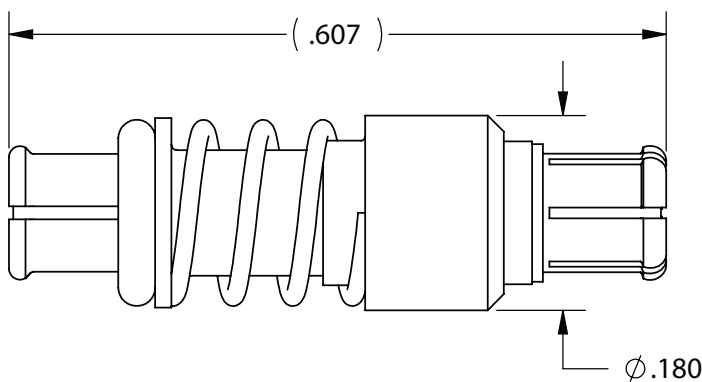
Detent	P/N
SB	1285-6004
LD	1285-6003
FD	1285-6002

## Female to Female Bullet



OAL	P/N	DSCC P/N
.254	1290-4008	94007ZCG-1
.395	1290-4009	94007ZCG-2
.769	1290-4007	--

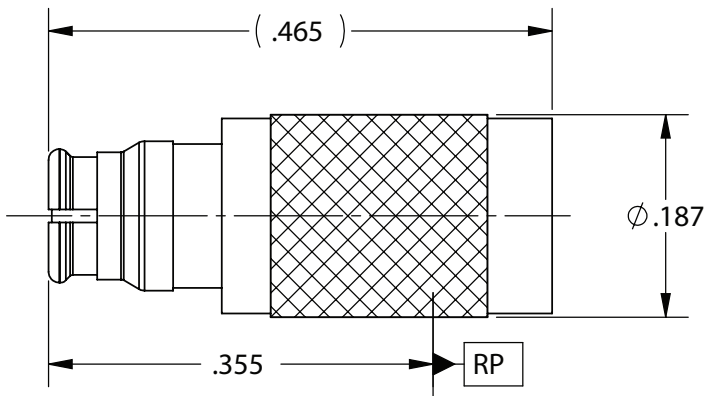
## Female to Female Bullet, Spring Loaded



OAL	P/N
.604	1112-4019

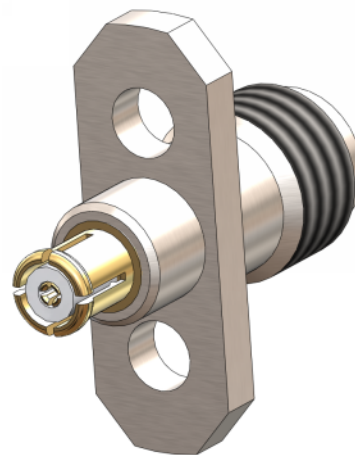
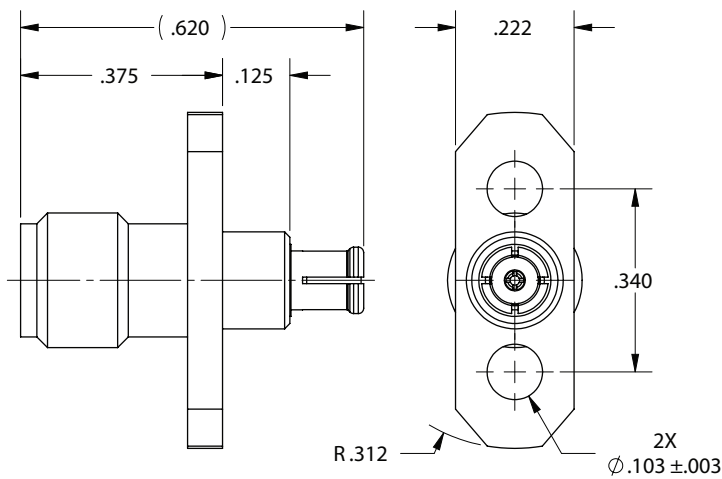
# SMP Adapters

## Male to Female Adapter



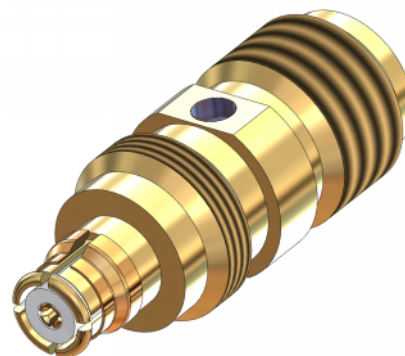
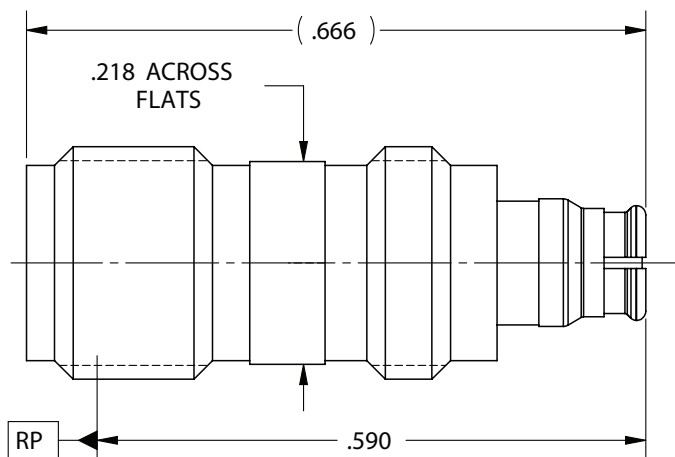
Detent	P/N
FD	1112-4009
LD	1112-4011
SB	1112-4012

## SMP Female to SMA Female, 2 Hole Flange



P/N
SF1112-6011

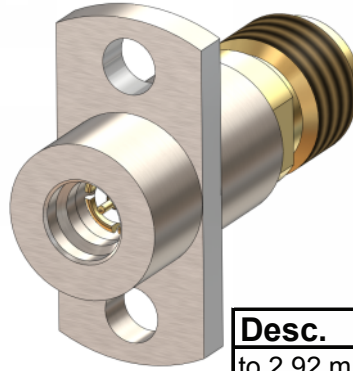
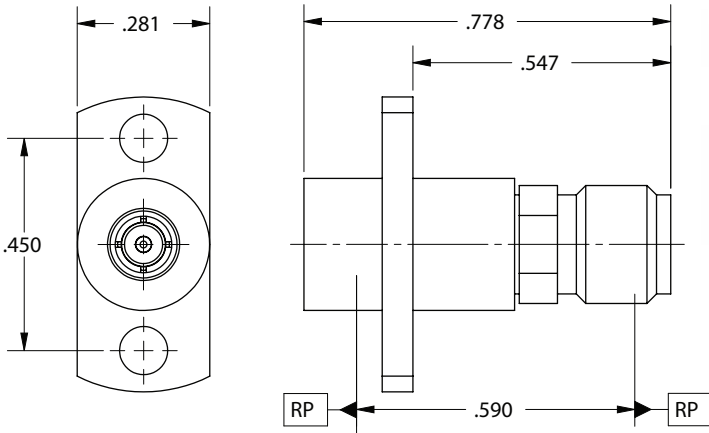
## SMP Female to SMA Female, Thread-In



P/N
1112-4018

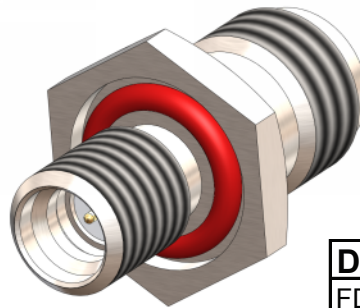
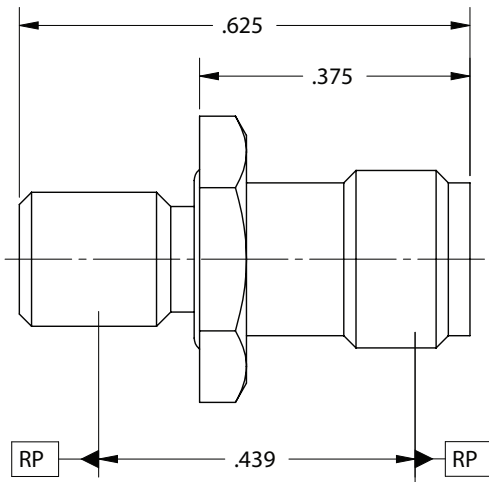
# SMP Adapters

## SMP Male LD Adapter, 2 Hole Flange Mount



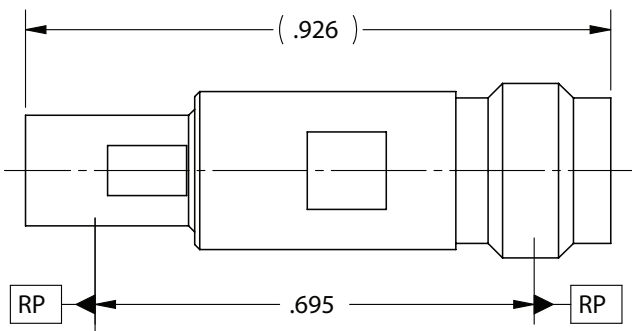
Desc.	P/N
to 2.92 mm Female	SF1112-6027
to SMA Female	SF1112-6028
to 3.5 mm Female	SF1112-6029

## SMP Male to SMA Female, Thread-In Panel Mount



Detent	P/N
FD	SF1112-6036
LD	SF1112-6034
SB	SF1112-6035

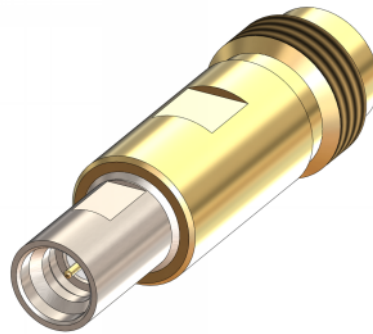
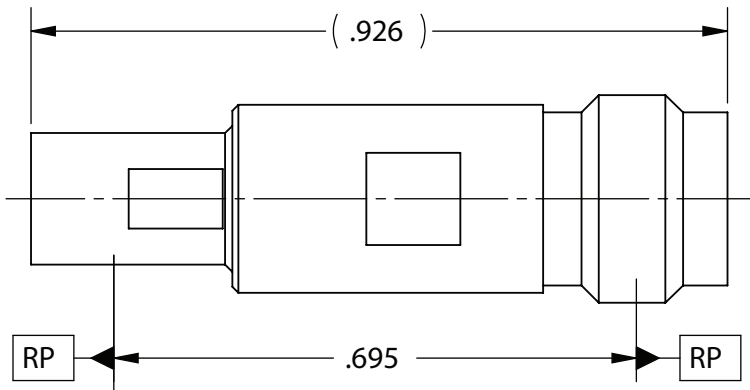
## SMP to 2.4mm Female, Adapter



Desc.	P/N
SMP Male FD	1116-6014
SMP Female	1116-6012

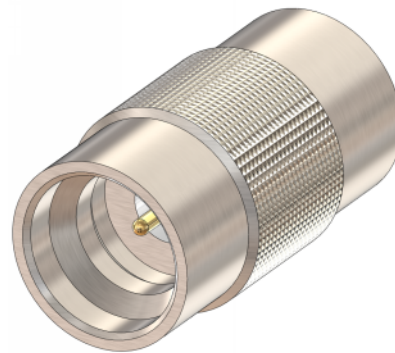
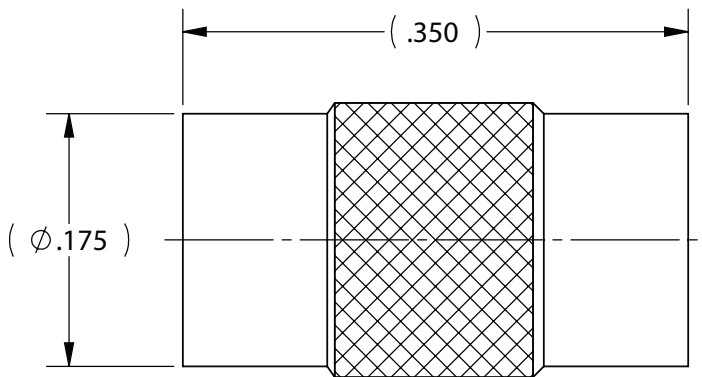
# SMP Adapters

## SMP Male to 2.92mm Female



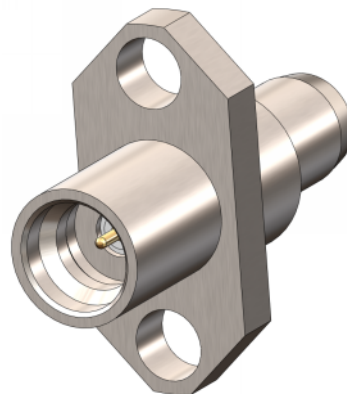
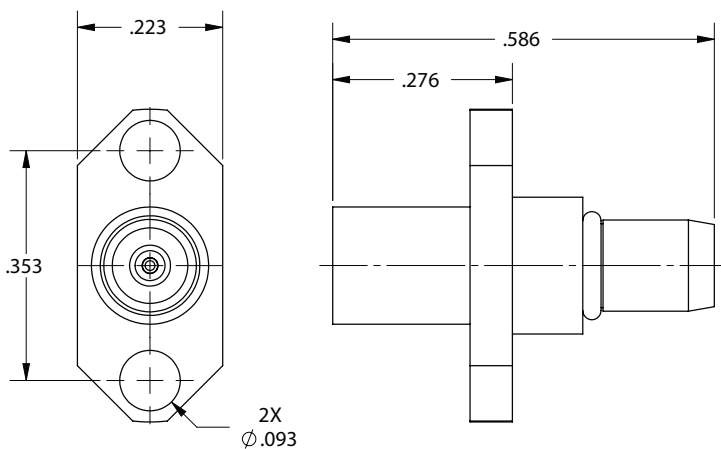
<b>Detent</b>	<b>SV P/N</b>
SB	SF1112-6031

## SMP Male FD to SMPM Male FD



<b>P/N</b>
SF1132-6029

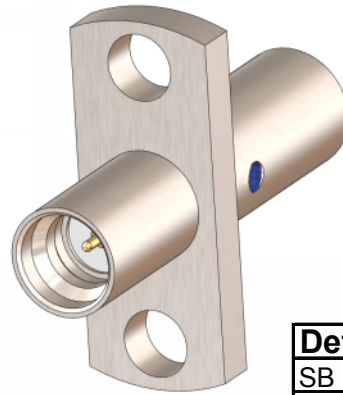
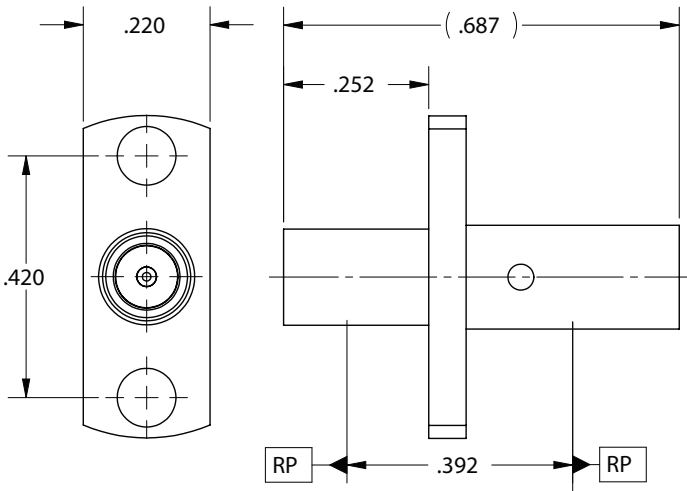
## SMP Male FD to BMMA Male, 2 Hole Flange Mount



<b>P/N</b>
SF1114-6013

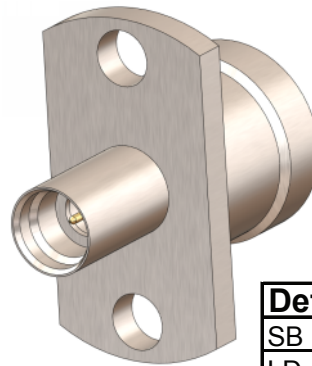
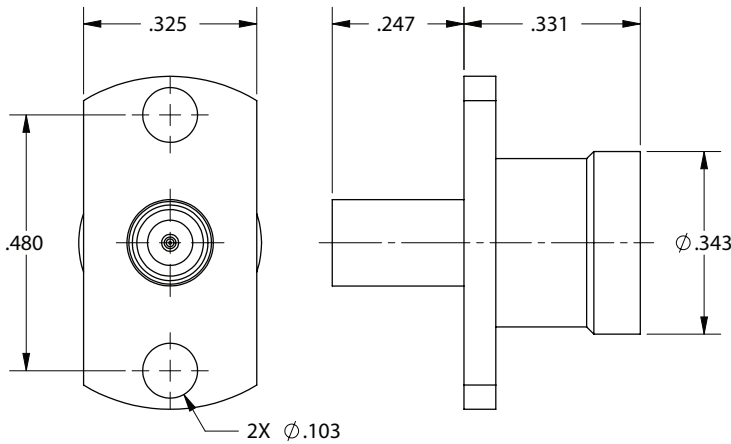
# SMP Adapters

## SMP Male to BMZ Female, Two Hole Flange



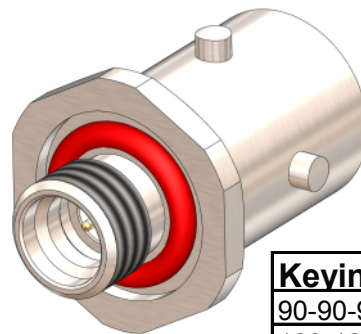
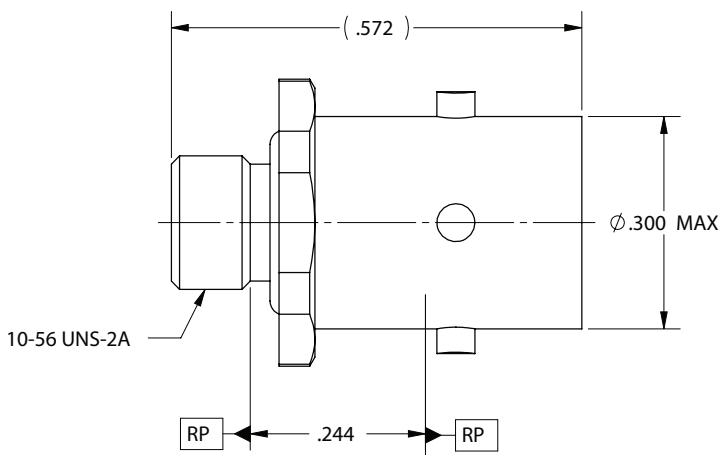
Detent	P/N
SB	SF1112-6010
LD	SF1112-6058
FD	SF1112-6008

## SMP Male to SVMS Male SB, Two Hole Flange Mount



Detent	P/N
SB	SF1112-6033
LD	SF1112-6059
FD	SF1112-6060

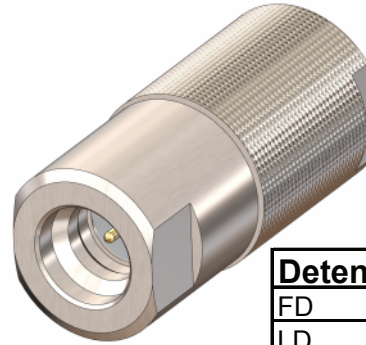
## SMP Male LD to ZMA Female, Thread-In



Keying	P/N
90-90-90-90	SF1112-6037
120-120-120	SF1112-6038
110-110-140	SF1112-6039
130-130-100	SF1112-6040

# SMP Components

## SMP Male Terminations



Detent	P/N
FD	SF8012-6009
LD	SF8012-6101
SB	SF8012-6102
CM	SF8012-6103

## SMP Female Terminations and Short



Desc.	P/N
2 watt	8012-4003
1/2 watt	8012-4006
Short	8012-4008

## SMP Attenuators



Desc.	P/N
Male to Male, FD	SF0912-6305
Male FD to Female	SF0912-6308
QPL, Male to Male, FD	M3933/27-XX