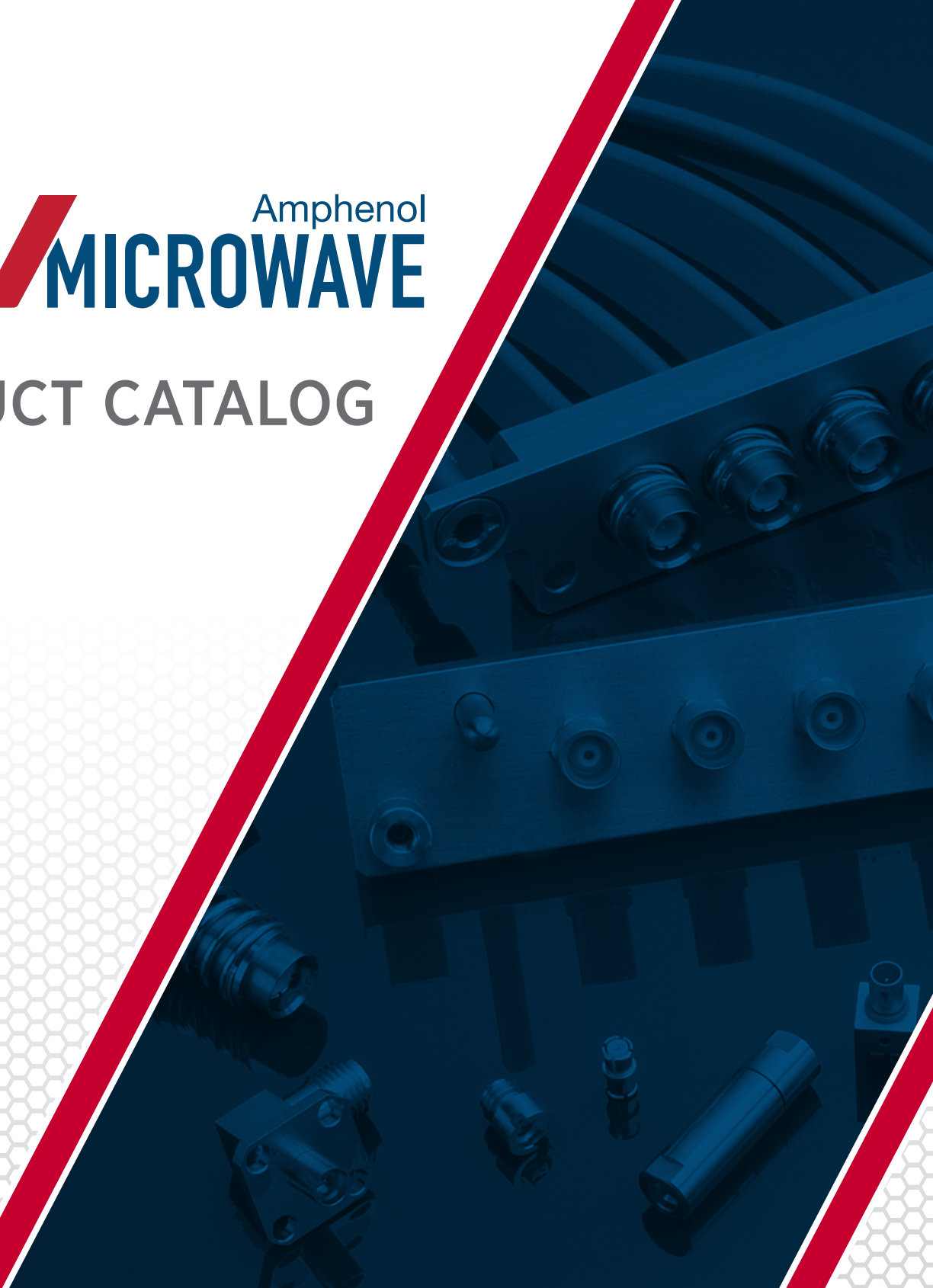




# PRODUCT CATALOG





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## SV Microwave - About Us

SV Microwave is a world leader in the RF/Microwave industry with over 40 years of proven performance. We design and manufacture RF/Microwave coaxial connectors, cable assemblies and passive components for military, satellite, aerospace, commercial and telecommunications applications.

We specialize in customized application specific solutions, but also offer a wide range of Commercial Off The Shelf (COTS) products shown in this catalog. When it comes to the design and manufacture of precision products, SV Microwave has set the standard.

SV Microwave is committed to helping our customers meet their RF/Microwave performance goals with our highly talented engineering team, outstanding customer service and precision manufacturing capabilities.

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Rev. 1 (01/15)

# BMA SERIES

## BMA Interface at a Glance

Government designation BMA (Blindmate A) was developed in the 1980's. The originally designated OSP™ connector by M/A-Com has excellent electrical performance up to 22 GHz in a compact size. SV Microwave offers extended frequencies on most BMA connector designs up to 26.5 GHz. With a slide-on interface and a connector durability of 5000 cycles, the BMA blindmate is suitable for high performance microwave applications.

### Electrical Specifications

Impedance	50Ω
Frequency	22 GHz
VSWR	1.02 + .008 f
Insertion Loss	.03 √ f
Shielding Effectiveness	≥ -90 - f dB
Dielectric Withstanding Voltage	1000 VRMS

### Mechanical Specifications

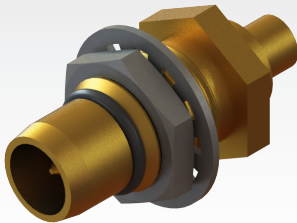
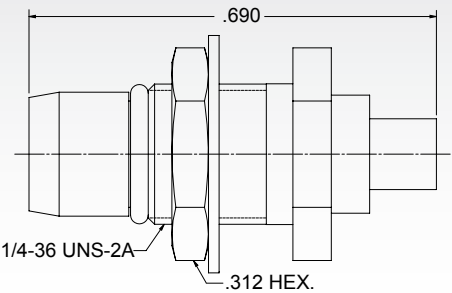
Mating Cycles	5000
Insertion Force	3.0 lbs
Withdrawal Force	1.5 lbs
Axial Float (Spring Loaded)	.060"
Radial Float (Spring Loaded)	.020"

### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +125°C
Moisture Resistance	MIL-STD-202, Method 106, Less Step 7B
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

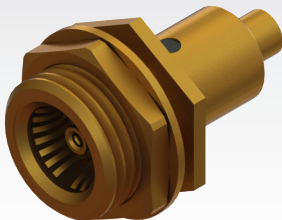
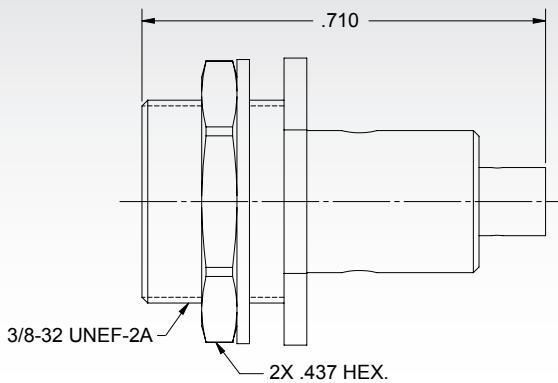
Note: Specifications, dimensions and images are typical for the series and may vary by part number

Male Bulkhead Cable Connector



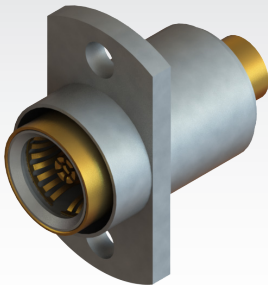
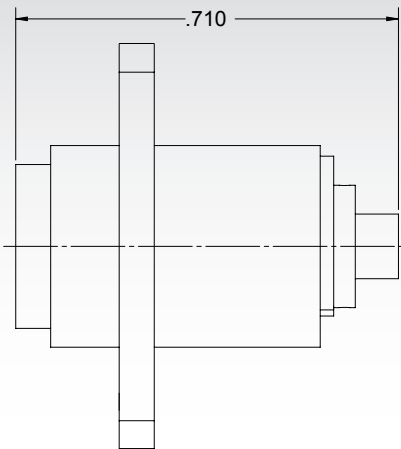
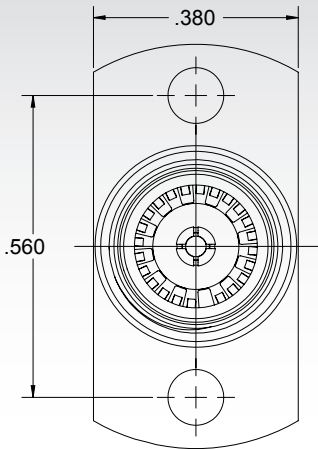
Cable	P/N
.085	1708-0001
.141	1709-6002

Female Bulkhead Cable Connector



Cable	P/N
.085	1733-6008
.141	1732-6012

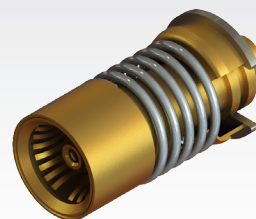
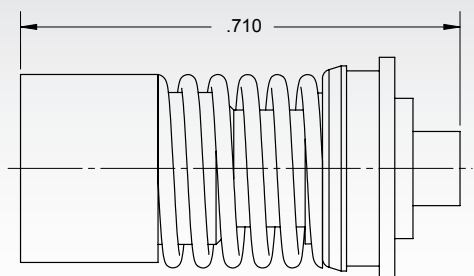
Female Flange Mount Cable Connector, 2 Hole



Cable	P/N
.085	SF1733-6006
.141	SF1732-6004

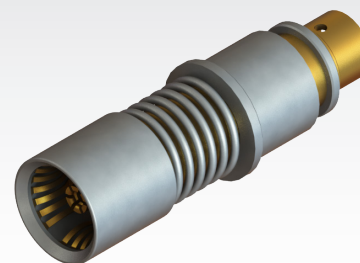
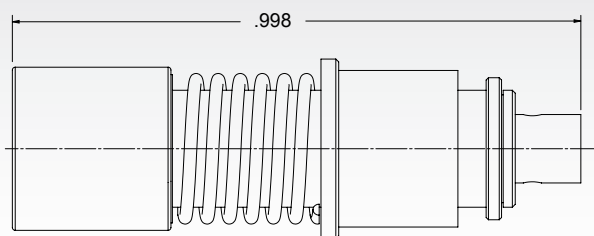
# BMA SERIES

## Female Snap-In Float Mount Cable Connector



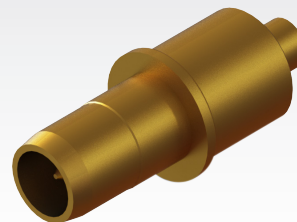
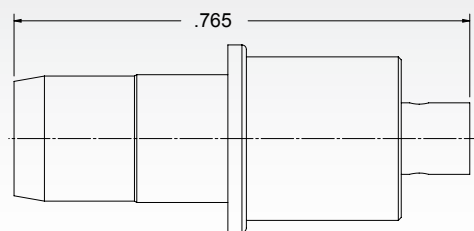
Cable	P/N
.085	1740-6001
.141	1742-6002

## Socket D38999 Cable Contact (Size 8)



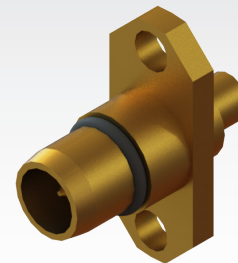
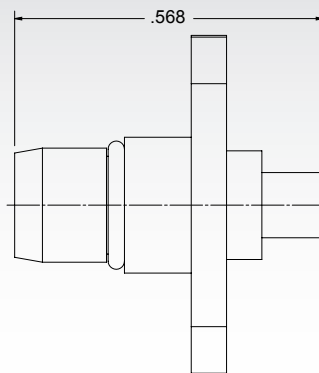
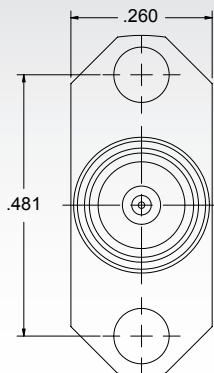
Cable	P/N
.085	SF9411-6000
.141	SF9411-6001

## Pin D38999 Cable Contact (Size 8)



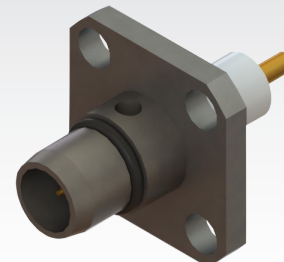
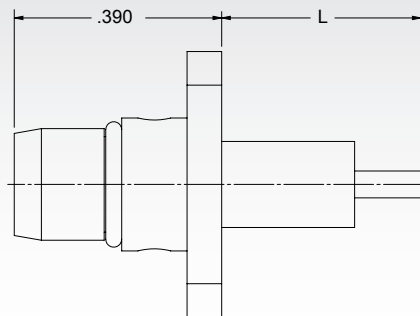
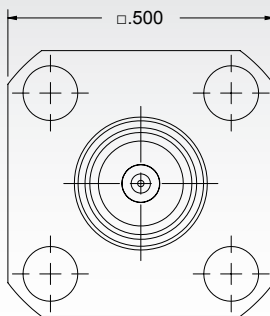
Cable	P/N
.085	SF9421-6000
.141	SF9421-6001

## Male Flange Mount Cable Connector, 2 Hole



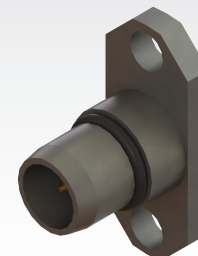
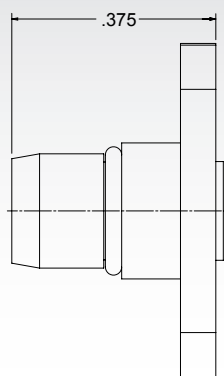
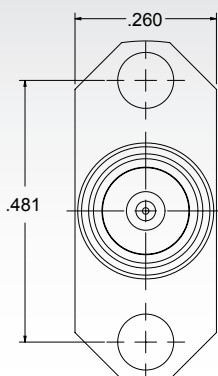
Cable	P/N
.085	1711-60008

## Male Flange Mount Connector, 4 Hole (Candlestick)



P/N	L
SF1755-6104	.488"
SF1755-6105	.375"

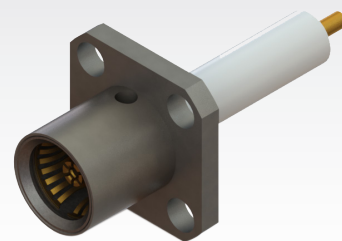
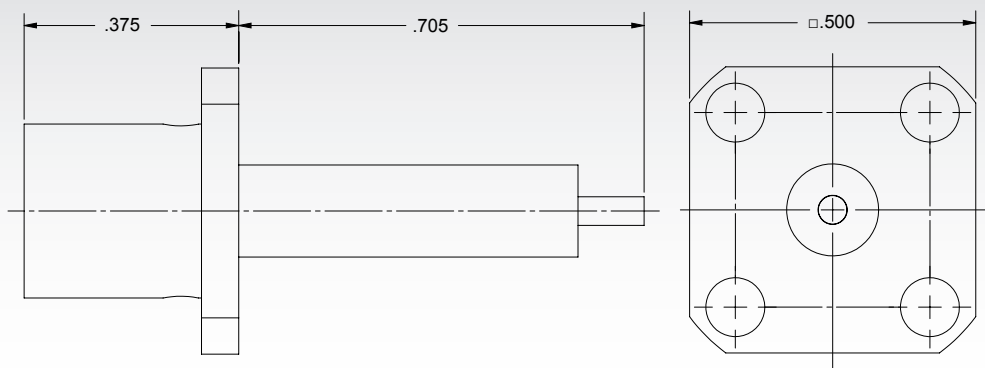
## Male Flange Mount Connector, 2 Hole (Accepts Ø.018" Pin)



P/N
SF1711-60013

# BMA SERIES

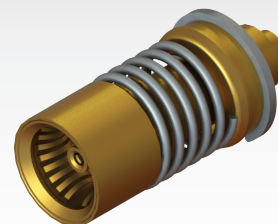
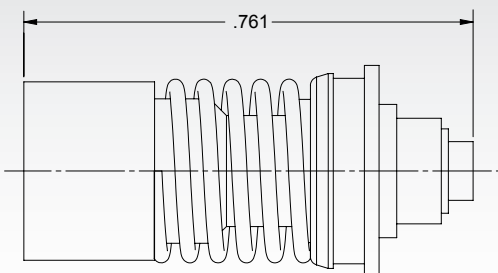
## Female Flange Mount Connector, 4 Hole (Candlestick)



P/N

SF1750-6101

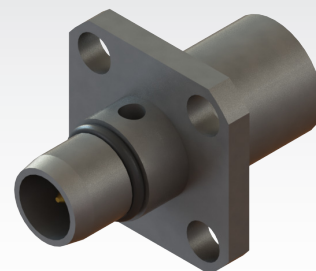
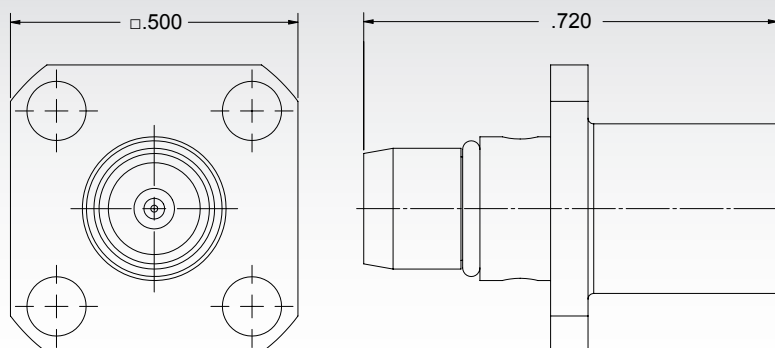
## Female Termination



P/N

8017-6002

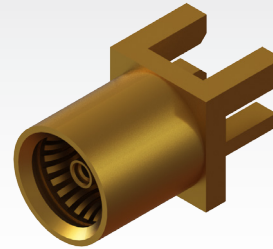
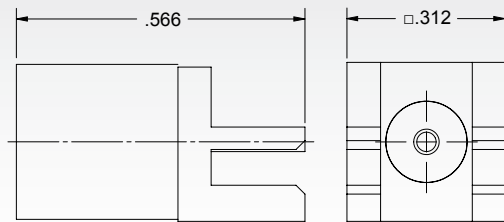
## Male Flange Mount Termination, 4 Hole



P/N

SF8017-6001

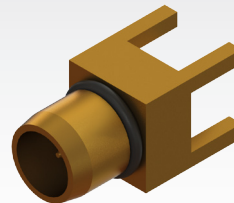
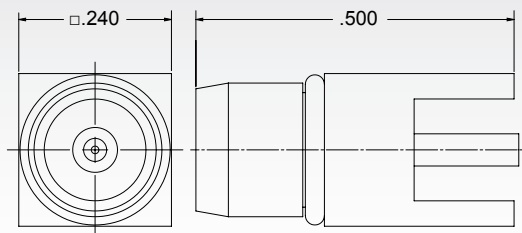
## Female Edge Launch Connector



Contact SV directly to access our database of recommended PCB layouts

P/N
1785-0003

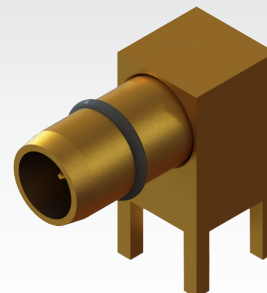
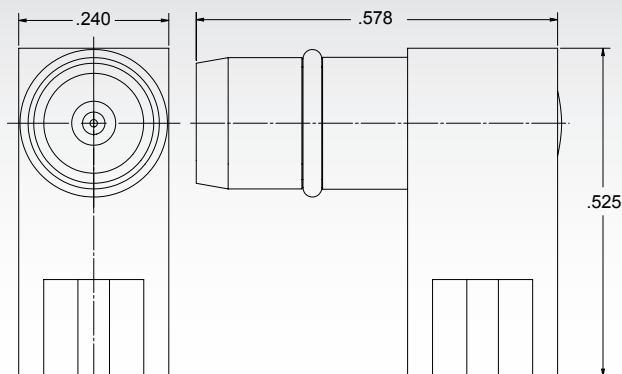
## Male PCB Thru-Hole Connector



Contact SV directly to access our database of recommended PCB layouts

P/N
1785-6001

## Male PCB Thru-Hole Connector, R/A

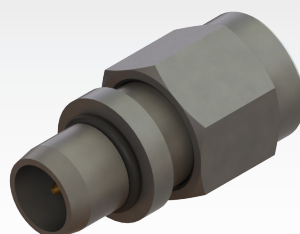
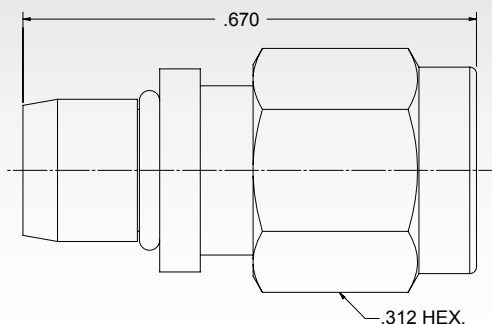


Contact SV directly to access our database of recommended PCB layouts

P/N
1789-6001

# BMA SERIES

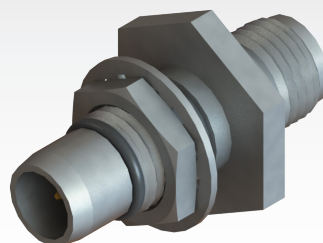
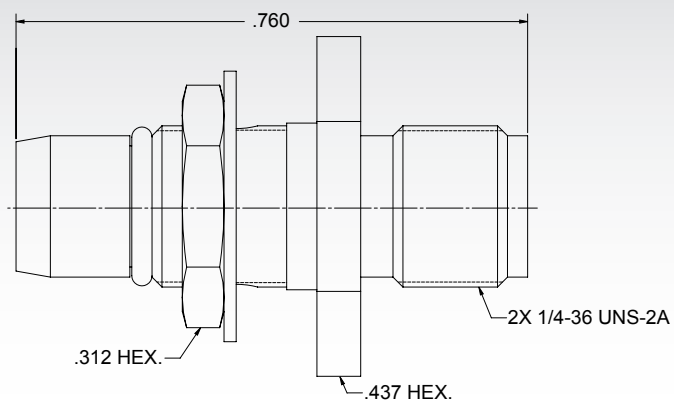
## BMA Male to SMA Male Adapter



P/N

SF1117-6018

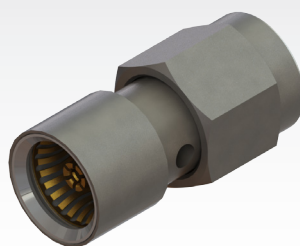
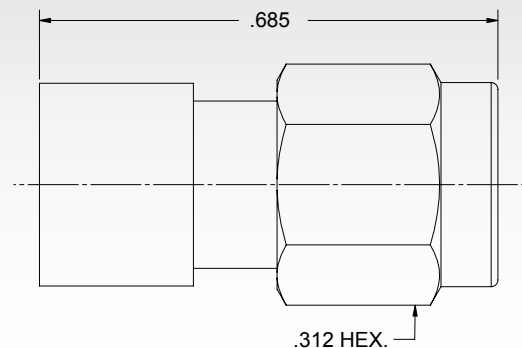
## BMA Male to SMA Female Adapter



P/N

SF1158-6001

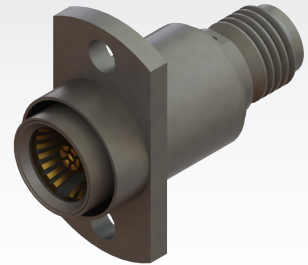
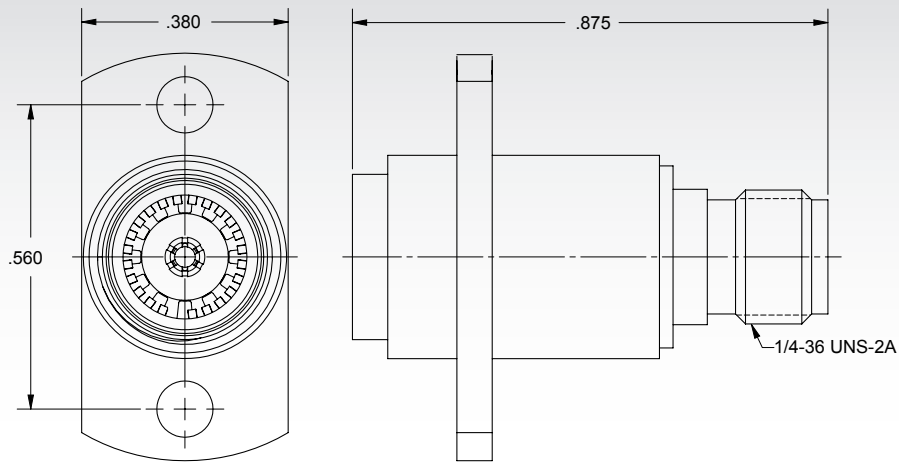
## BMA Female to SMA Male Adapter



P/N

SF1157-6013

## BMA Female to SMA Female Adapter , 2 Hole



P/N
SF1157-6009

# COAXIAL CONTACTS

## Coaxial Contacts Interface at a Glance

System design and platform needs have required smaller packaging with RF, D/C signal and power all in close proximity. Our proven designs and blindmate technology have enabled the integration of multiport RF signals into single housings for gang mating capability. Various existing form factors such as D38999, ARINC, Micro-D and D-Sub have provided standard components and familiar shell sizes. Hybrid technology fuses RF and D/C contacts into a single connector simplifying design and installation while eliminating discrete wiring.

### Electrical Specifications

Impedance	50Ω
Frequency	3 GHz
VSWR	1.20 + .04 f
Insertion Loss	.11 √ f
Shielding Effectiveness	≥ -80 dB
Dielectric Withstanding Voltage	250 - 1000 VRMS

### Mechanical Specifications

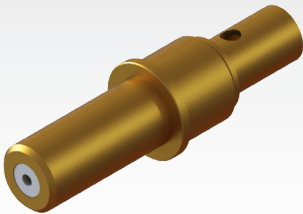
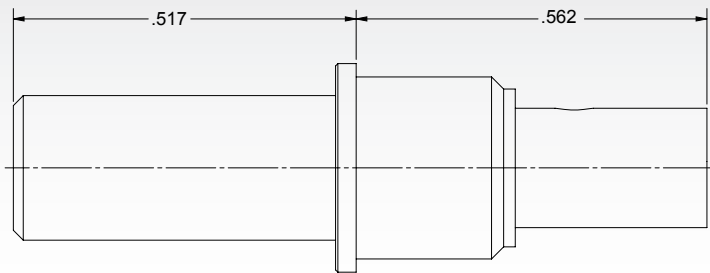
Mating Cycles	500
Insertion Force	30 oz
Withdrawal Force	2 oz

### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +125°C
Moisture Resistance	MIL-STD-202, Method 106, Less Step 7B
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

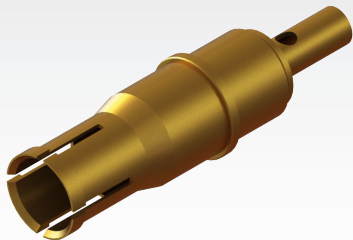
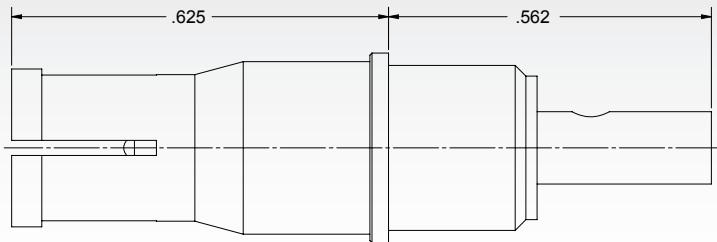
Note: Specifications, dimensions and images are typical for the series and may vary by part number

Pin D38999 Cable Contact (Size 8)



Cable	P/N
.085	8001-4107
.141	8001-4101

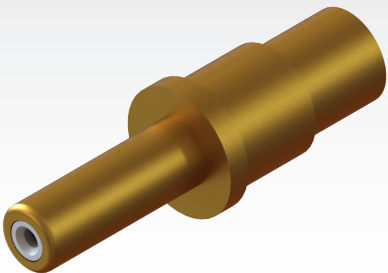
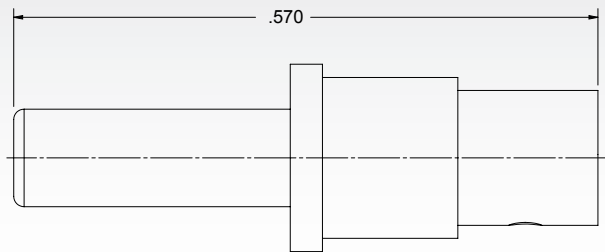
Socket D38999 Cable Contact (Size 8)



Cable	P/N
.085	8001-4108
.141	8001-4103

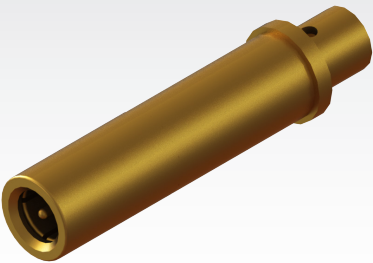
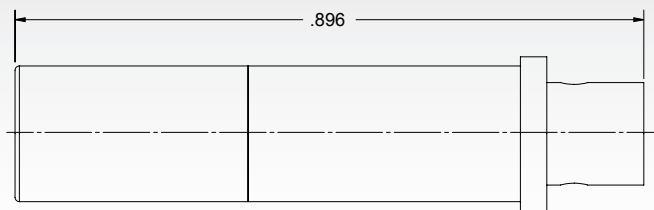
# COAXIAL CONTACTS

## Pin D38999 Cable Contact (Size 12)



Cable	P/N
.085	8001-4102

## Socket D38999 Cable Contact (Size 12)



Cable	P/N
.085	8001-4104



# SMA SERIES

## SMA Interface at a Glance

SMA is an acronym for SubMiniature version A and was developed in the 1960's. Using a threaded interface, 50 Ohm SMA connectors are precision subminiature units that provide excellent electrical performance from DC to 26.5 GHz. These high-performance connectors are compact in size and mechanically have outstanding durability. Built in accordance with MIL-PRF-39012 and CECC 22110/111, SMA connectors can be mated with all connectors that meet these spec mating diameters regardless of manufacturer.

### Electrical Specifications

Impedance	50Ω
Frequency	18 GHz (select models to 26.5 GHz)
VSWR	1.05 + .005 f
Insertion Loss	.03 √ f
Shielding Effectiveness	≥ -90 - f dB
Dielectric Withstanding Voltage	1000 VRMS

### Mechanical Specifications

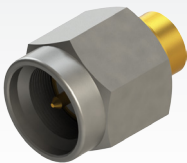
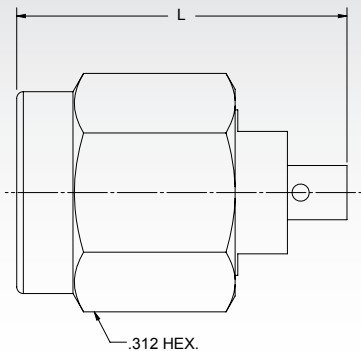
Mating Cycles	500
Mating Torque	7 - 10 in - lbs

### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +125°C
Moisture Resistance	MIL-STD-202, Method 106, Less Step 7B
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

Note: Specifications, dimensions and images are typical for the series and may vary by part number

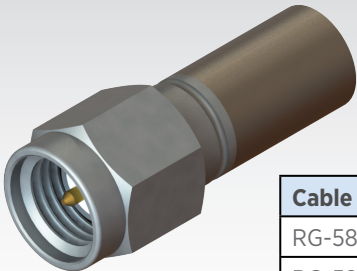
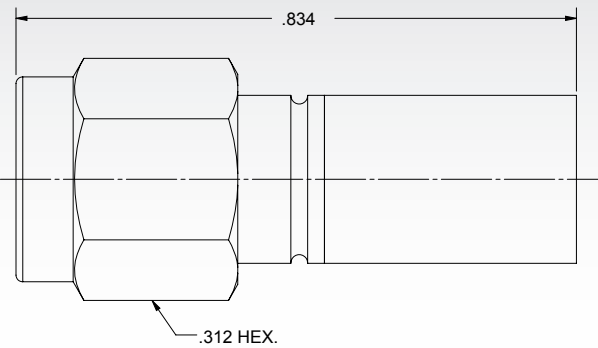
Male Cable Connector



Cable	P/N	L
.047	SF2911-60172	.499"
.085	2906-6002	.442"
.085	SF2906-6002	.442"
.085	M39012/79B3101	.449"
.141	SF2902-6005	.499"
.141	SF2902-6001	.330"

'SF' denotes passivated Stainless Finish

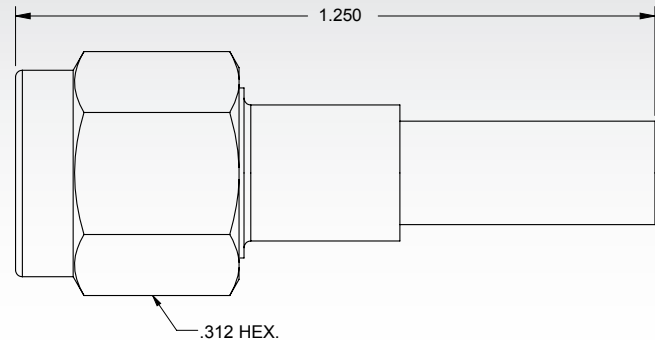
Male Cable Connector



Cable	P/N
RG-58	2900-6001
RG-58	SF2900-6001
RG-58	M39012/55B3115
RG-174	2903-6001
RG-174	M39012/55-3126
RG-174	M39012/55-3128

'SF' denotes passivated Stainless Finish

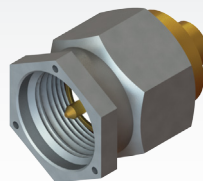
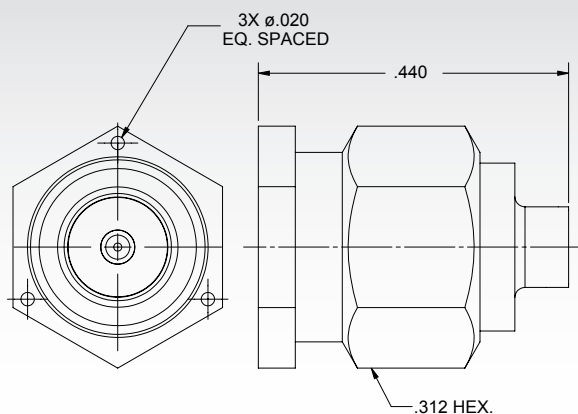
Male Cable Connector



Cable	P/N
RG-174	M39012/55B3112

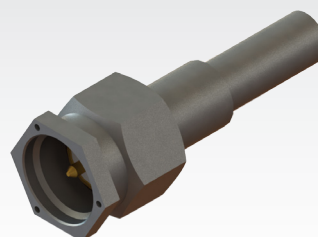
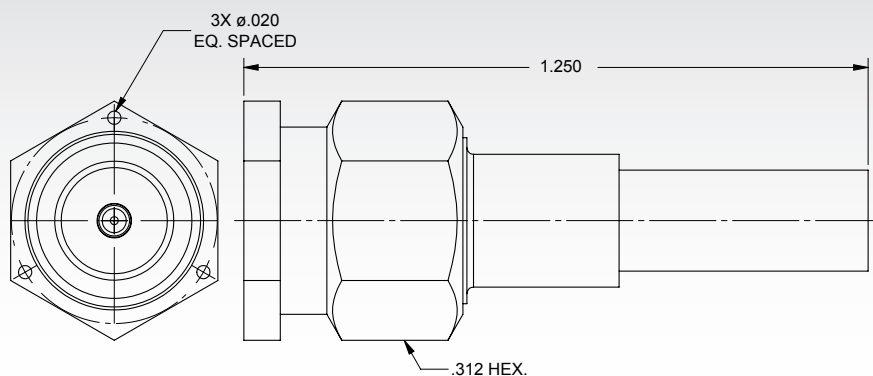
# SMA SERIES

## Male Cable Connector, Lockwire Holes



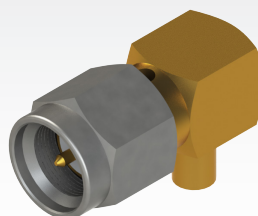
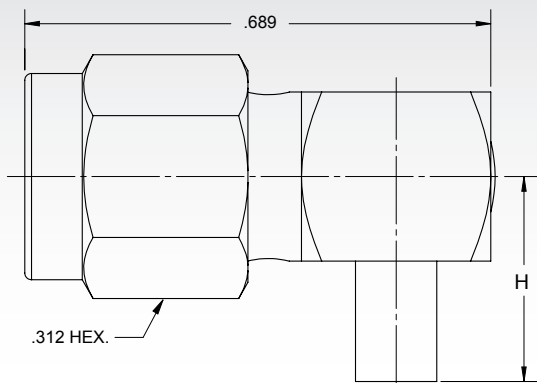
Cable	P/N
.085	M39012/79B3001
.085	M39012/79-3007

## Male Cable Connector, Lockwire Holes



Cable	P/N
RG-58	M39012/55B3015
RG-174	M39012/55B3012
M17-152-00001	M39012/55-3030

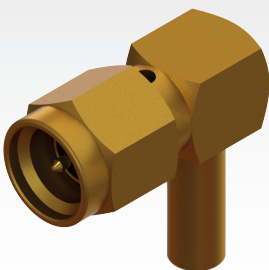
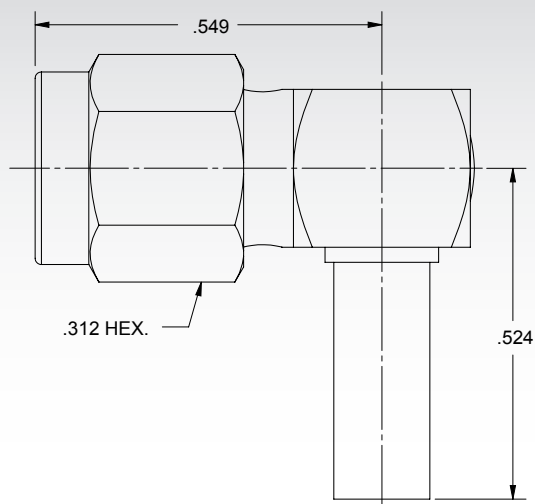
## Male Cable Connector, R/A



Cable	P/N	H
.085	SF2915-6001	.312"
.085	M39012/80B3101	.310"
.085	M39012/80-3107	.625"
.141	2912-6001	.312"
.141	SF2912-6001	.312"
.141	M39012/80-3106	.625"
.141	M39012/80-3108	.625"
RG-58	M39012/56-3109	.524"
RG-174	M39012/56-3107	1.125"
RG-178	M39012/56-3106	.524"

\*SF\* denotes passivated Stainless Finish

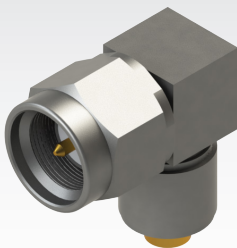
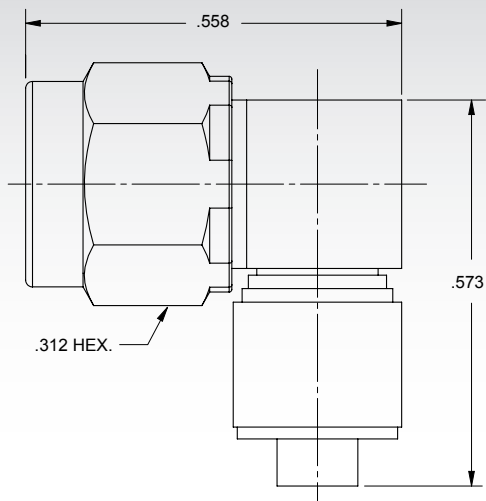
Male Cable Connector, R/A



Cable	P/N
RG-58	2910-6001
RG-58	M39012/56B3114
RG-58	M39012/56B3116
RG-58	M39012/56B3117
RG-58	M39012/56-3128
RG-174	2913-6001
RG-174	SF2913-6001
RG-174	M39012/56B3119
RG-178	M39012/56-3125

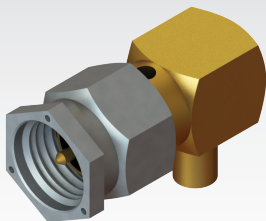
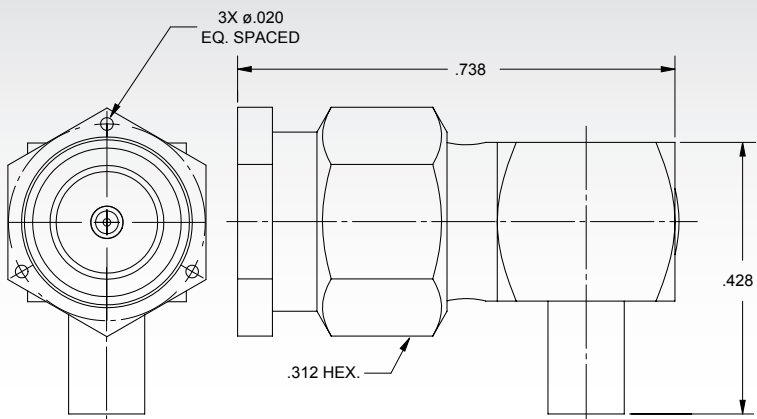
'SF' denotes passivated Stainless Finish

Male Cable Connector, Swept R/A



Cable	P/N
.047	SF2912-60955
.085	SF2915-6605
.141	SF2912-6605

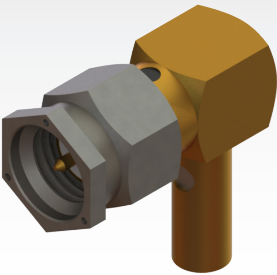
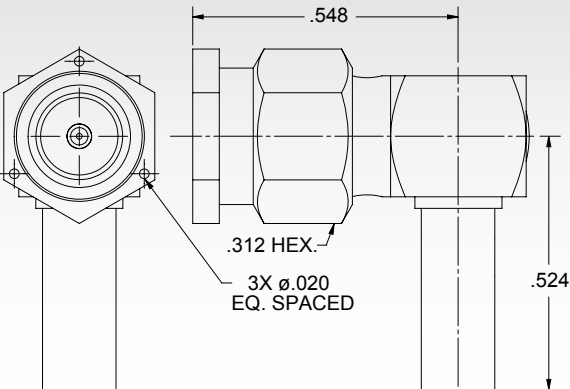
Male Cable Connector, Lockwire Holes, R/A



Cable	P/N
.085	M39012/80-3005
.141	M39012/80-3006
.141	M39012/80-3008
M17/152-00001	M39012/56-3030

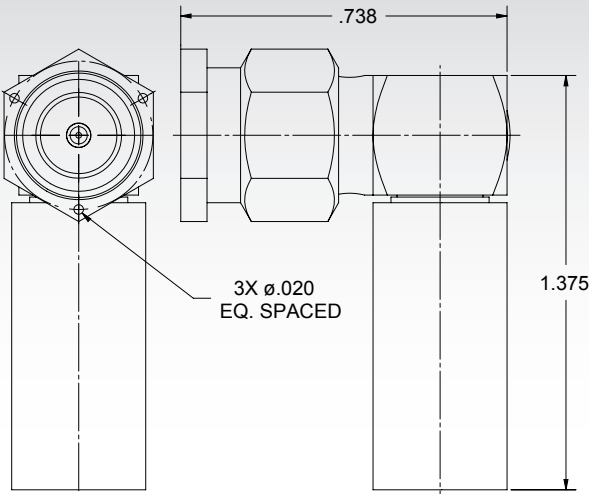
# SMA SERIES

## Male Cable Connector, Lockwire Holes, R/A



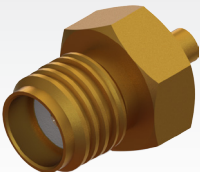
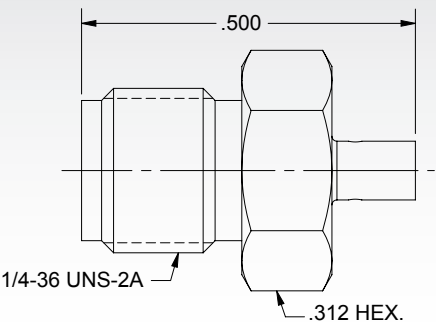
Cable	P/N
RG-174	M39012/56-3007

## Male Cable Connector, Lockwire Holes, R/A



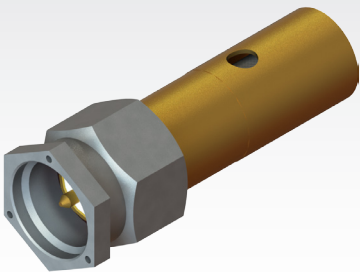
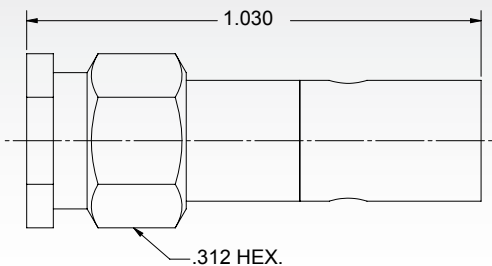
Cable	P/N
RG-58	M39012/56B3014
RG-58	M39012/56B3016
RG-58	M39012/56B3017
RG-58	M39012/56B3022
RG-58	M39012/56-3028
RG-174	M39012/56B3019
RG-174	M39012/56-3026
RG-178	M39012/56-3006
RG-178	M39012/56B3011

## Female Cable Connector



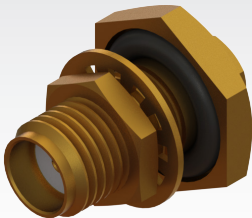
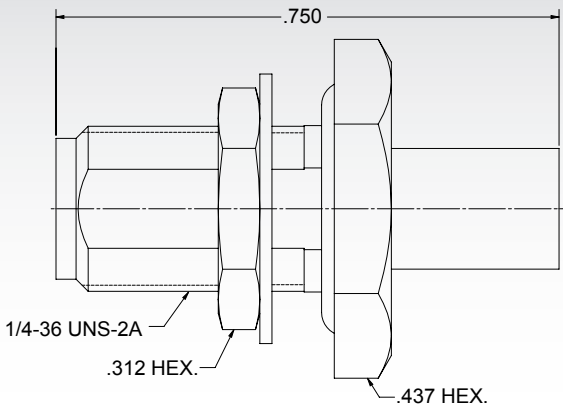
Cable	P/N
.047	2926-6015
.085	2921-6002
.141	2922-6007

Female Cable Connector, Lockwire Holes



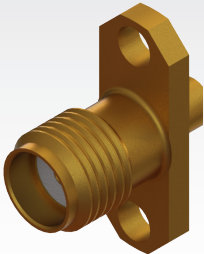
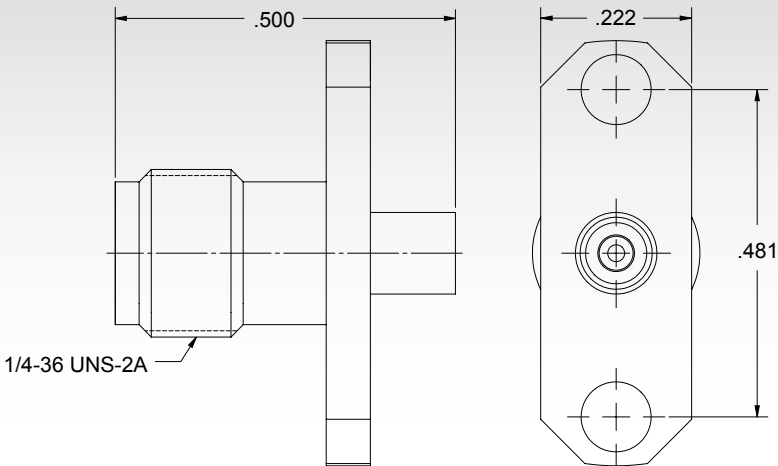
Cable	P/N
RG-58	M39012/55-3009

Female Bulkhead Cable Connector



Cable	P/N
.047	2944-6001
.085	2946-6012
.141	2942-6045

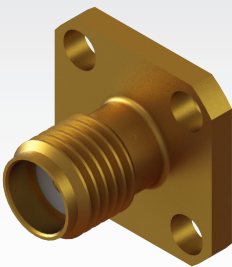
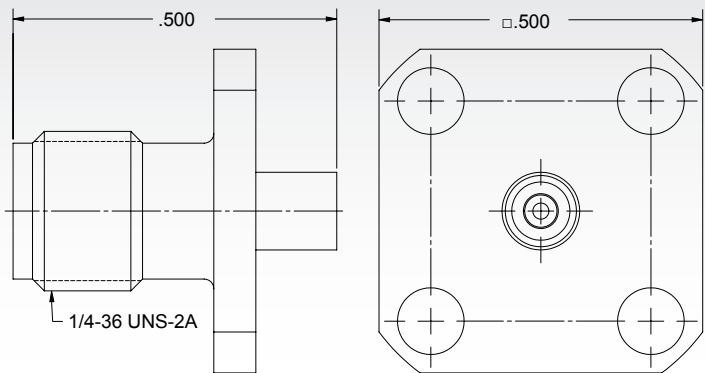
Female Flange Mount Cable Connector, 2 Hole



Cable	P/N
.085	2933-6001

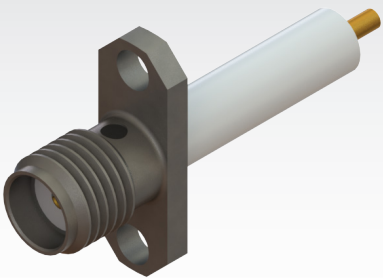
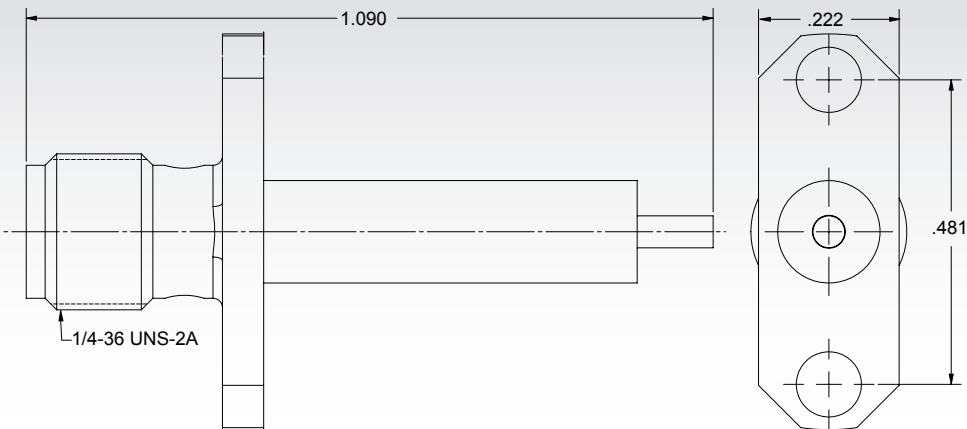
# SMA SERIES

## Female Flange Mount Cable Connector, 4 Hole



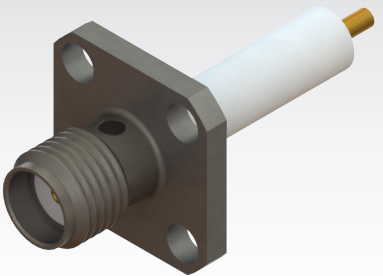
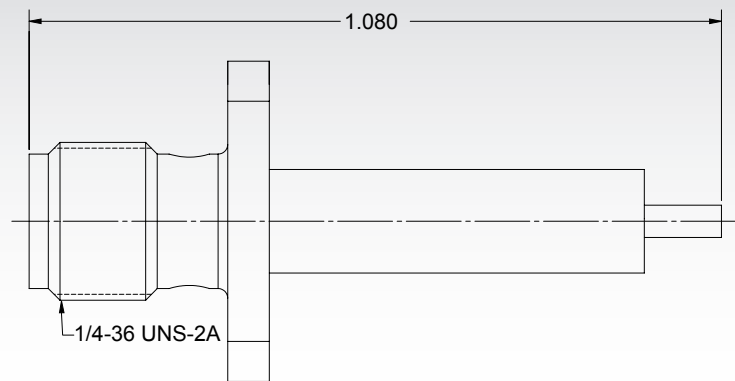
Cable	P/N
.085	2933-6004

## Female Flange Mount Connector, 2 Hole (Candlestick)



P/N
SF2950-6200

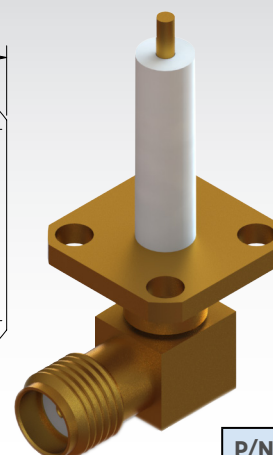
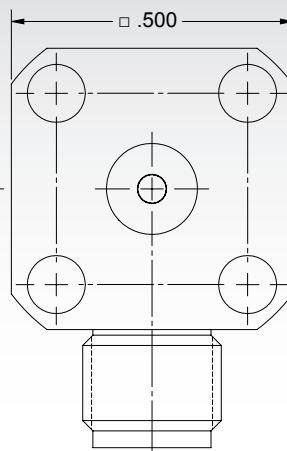
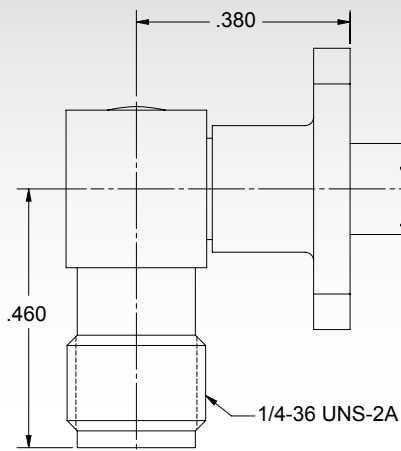
## Female Flange Mount Connector, 4 Hole (Candlestick)



P/N
2950-6061
SF2950-6061

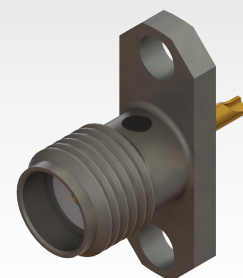
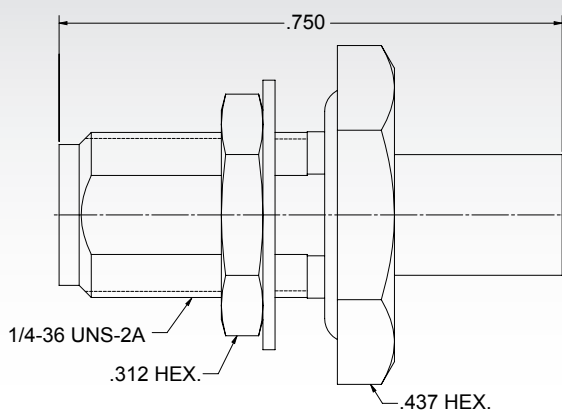
'SF' denotes passivated Stainless Finish

## Female Flange Mount Connector, 4 Hole, R/A (Candlestick)



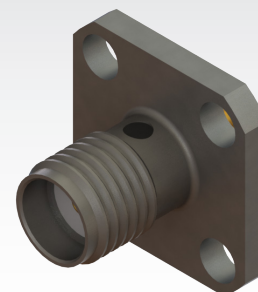
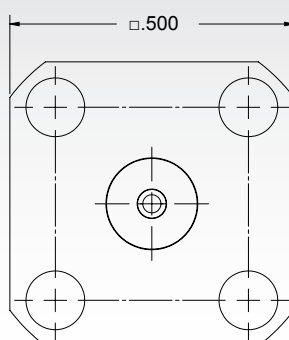
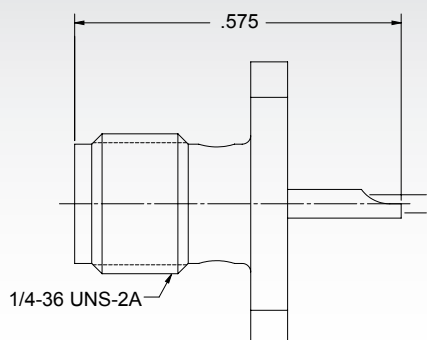
P/N
2960-6025

## Female Flange Mount Connector, 2 Hole (Solder Pot)



P/N
SF2950-6062

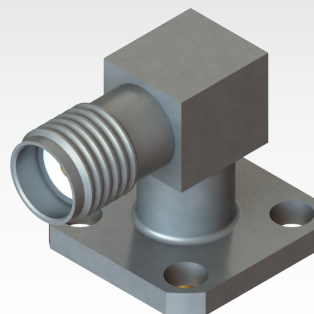
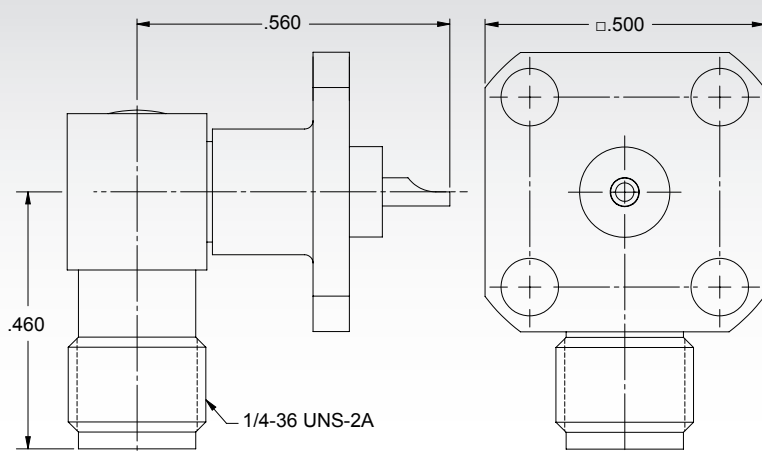
## Female Flange Mount Connector, 4 Hole (Solder Pot)



P/N
SF2950-6081

# SMA SERIES

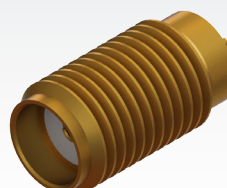
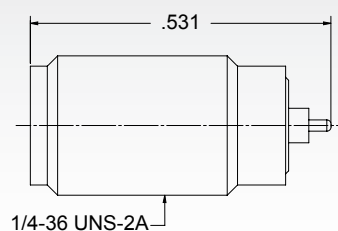
## Female Flange Mount Connector, 4 Hole, R/A (Solder Pot)



P/N

SF2960-6001

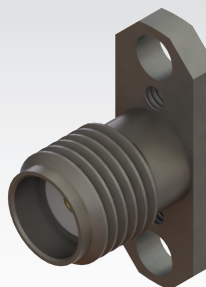
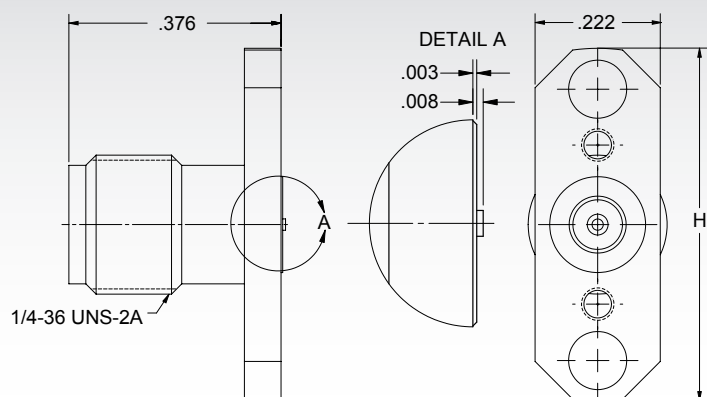
## Female Sparkplug Hermetic Connector



P/N

2975-6200

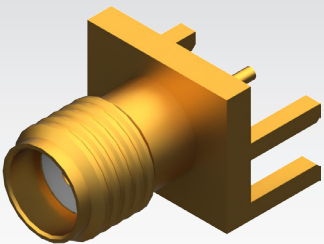
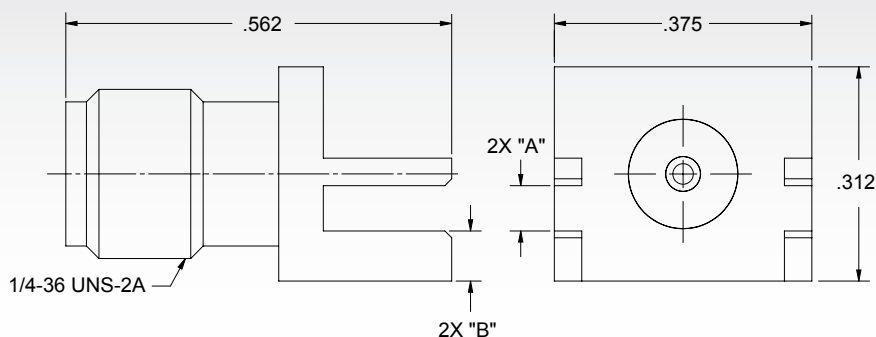
## Female Flange Compression Mount Connector, 2 Hole



P/N	Desc.	H
SF2921-6920	Stripline	.625"
SF2921-61356	Stripline	.400"
SF2921-61345	CPW, Microstrip	.400"

Contact SV directly to access our database of recommended PCB layouts

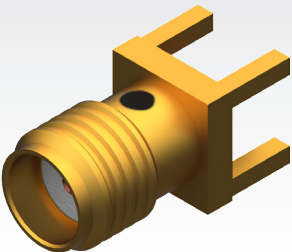
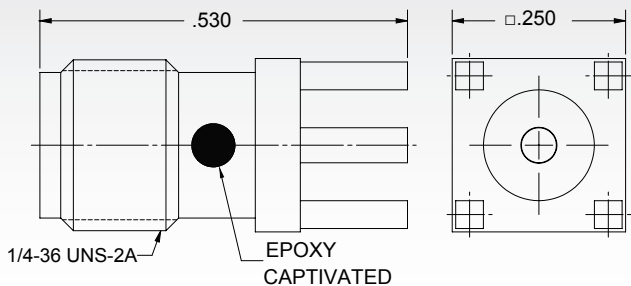
Female Edge Launch Connector



P/N	A	B
2985-6035	.068"	.073"
2985-6036	.048"	.093"
2985-6037	.037"	.104"
2985-6038	.099"	.042"

Contact SV directly to access our database of recommended PCB layouts

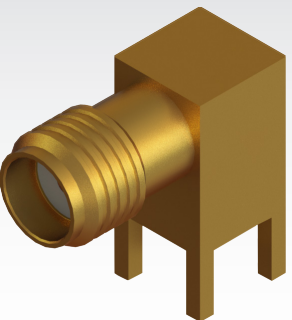
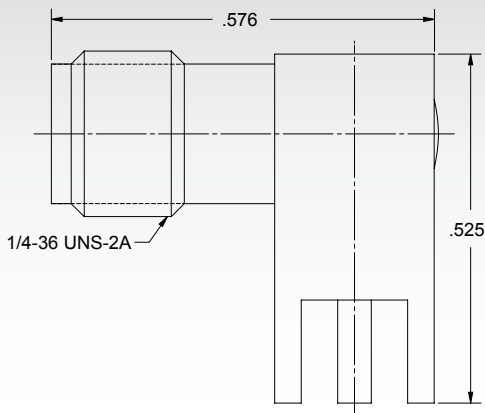
Female PCB Thru-Hole Connector



P/N
2985-6004

Contact SV directly to access our database of recommended PCB layouts

Female PCB Thru-Hole Connector, R/A

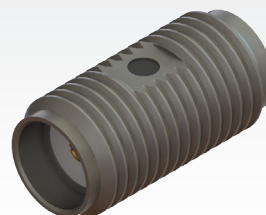
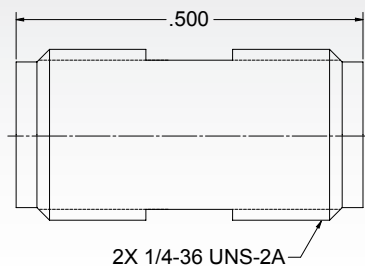


P/N
2986-6001

Contact SV directly to access our database of recommended PCB layouts

# SMA SERIES

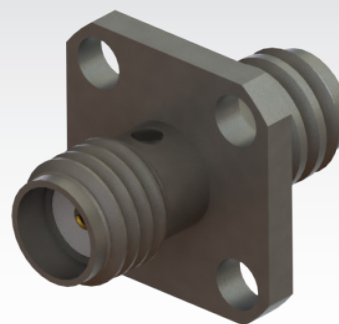
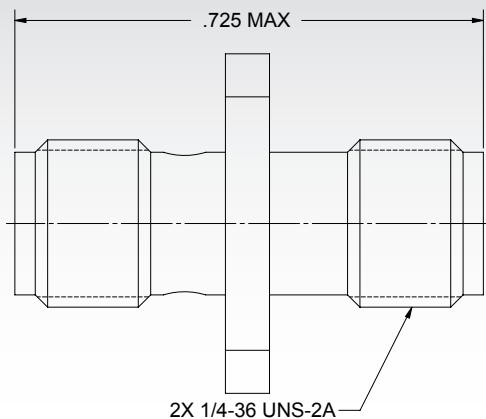
## SMA Female to Female Adapter



P/N

SF2992-6001

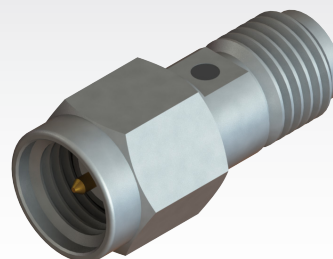
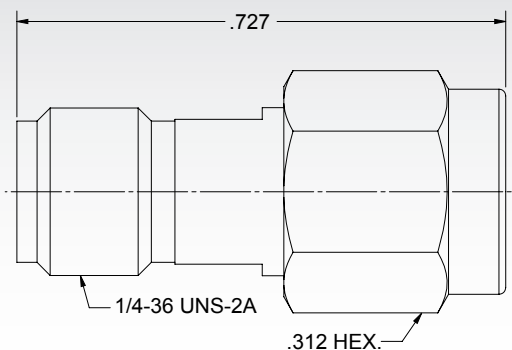
## SMA Female to Female Adapter , 4 Hole



P/N

M55339/28-30002

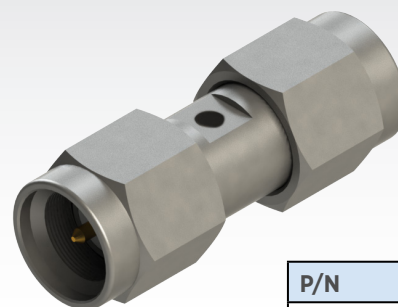
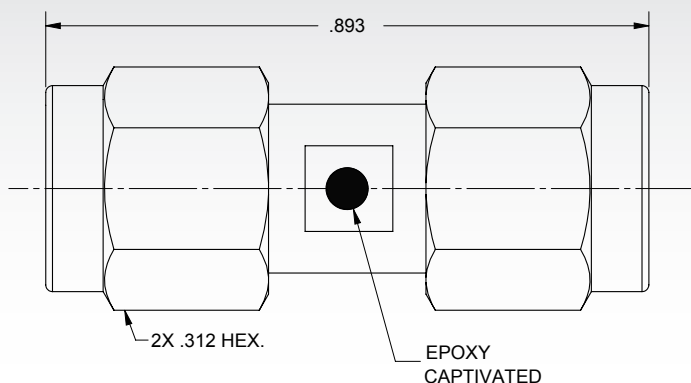
## SMA Female to Male Adapter



P/N

SF299 7-6003

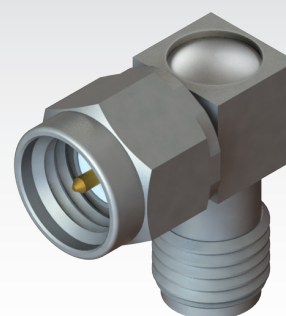
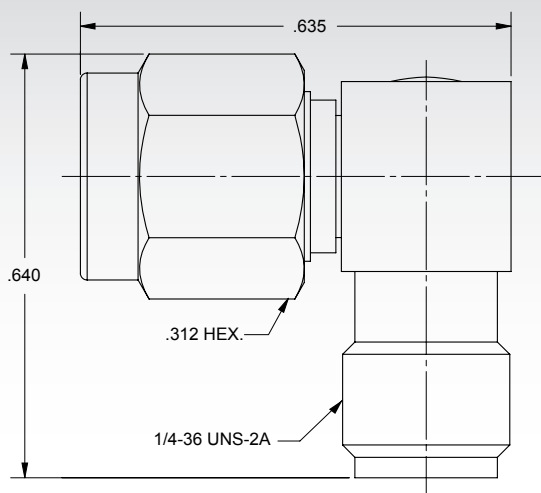
## SMA Male to Male Adapter



P/N
2993-6001
SF2993-6001

'SF' denotes passivated Stainless Finish

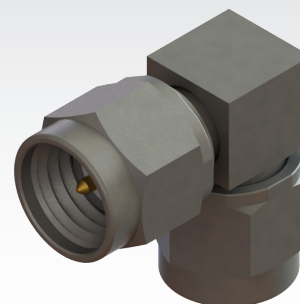
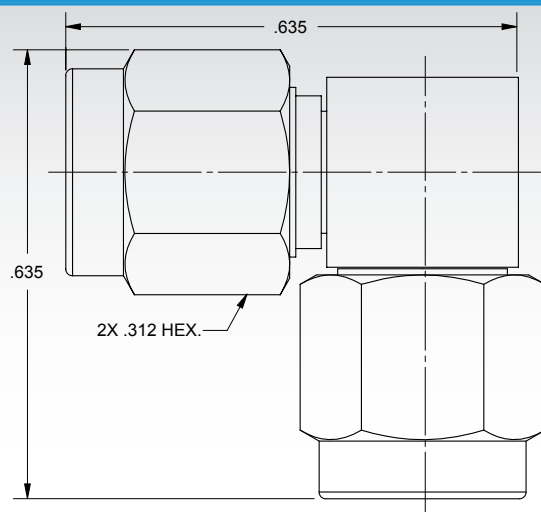
## SMA Female to Male Adapter, R/A



P/N
2994-6001
SF2994-6001
M55339/02-30001

'SF' denotes passivated Stainless Finish

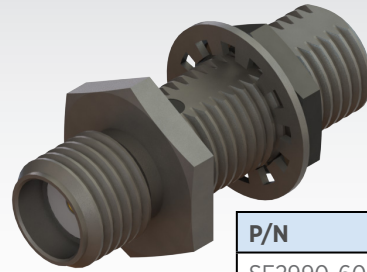
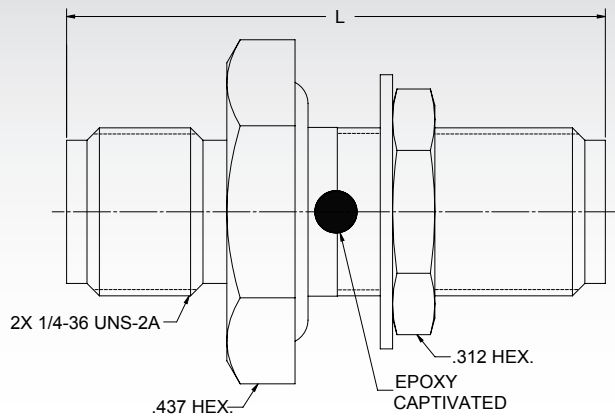
## SMA Male to Male Adapter, R/A



P/N
M55339/53-30001

# SMA SERIES

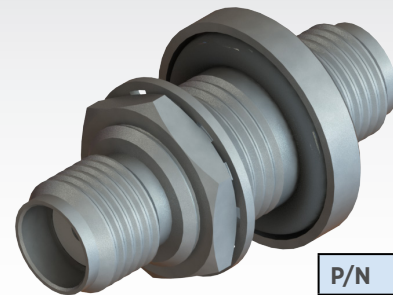
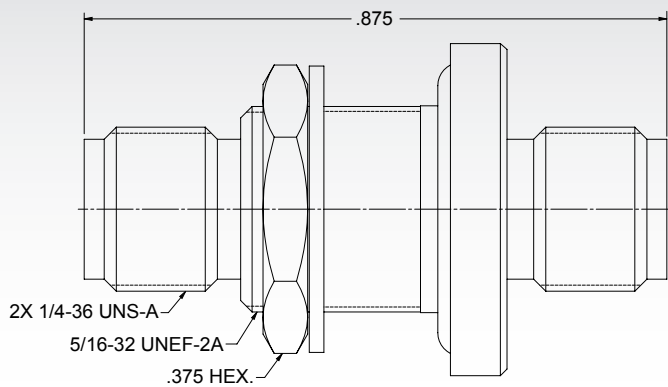
## SMA Female to Female Bulkhead Adapter



P/N	L
SF2990-6002	.790"
2990-6005	.875"
SF2990-6005	.875"
M55339/28-30001	.906"

'SF' denotes passivated Stainless Finish

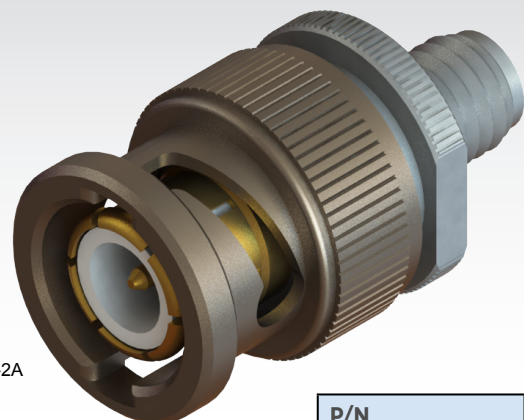
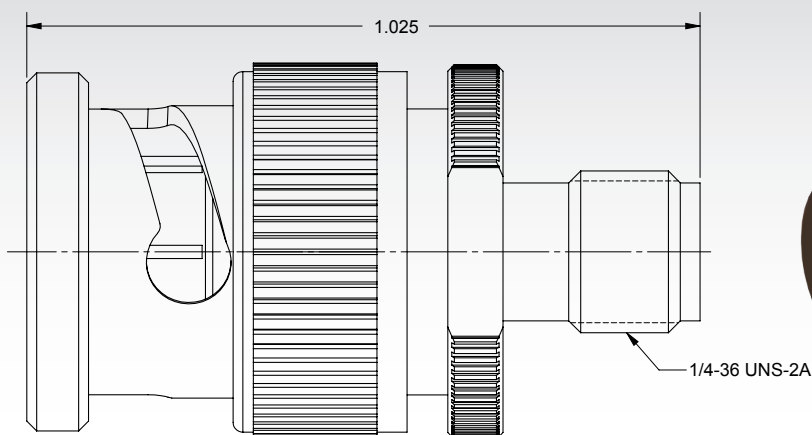
## SMA Female to Female Bulkhead Hermetic Adapter



P/N
2991-6002
SF2991-6002

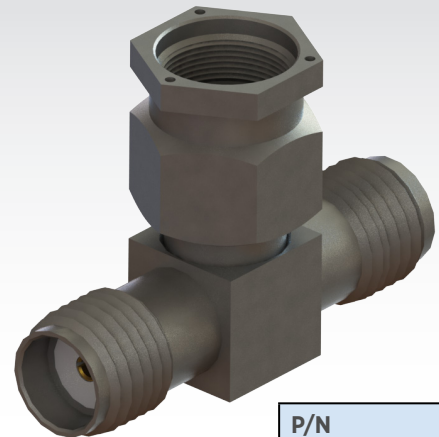
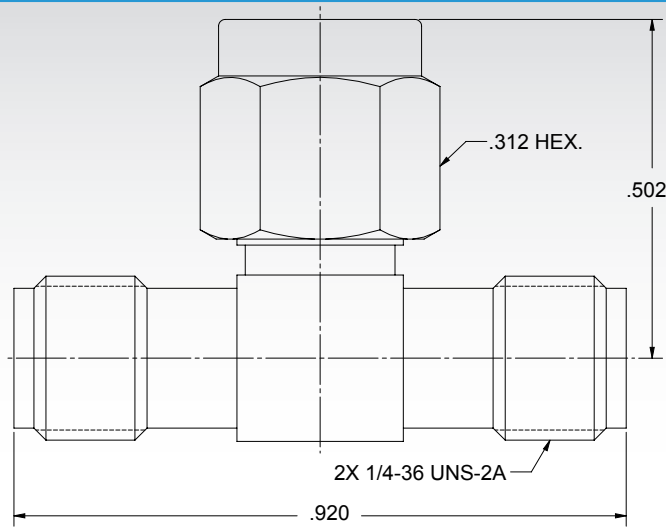
'SF' denotes passivated Stainless Finish

## SMA Female to BNC Male Adapter



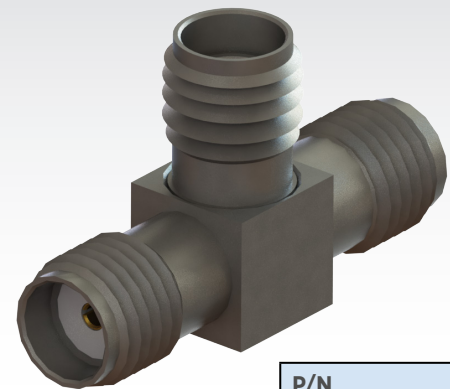
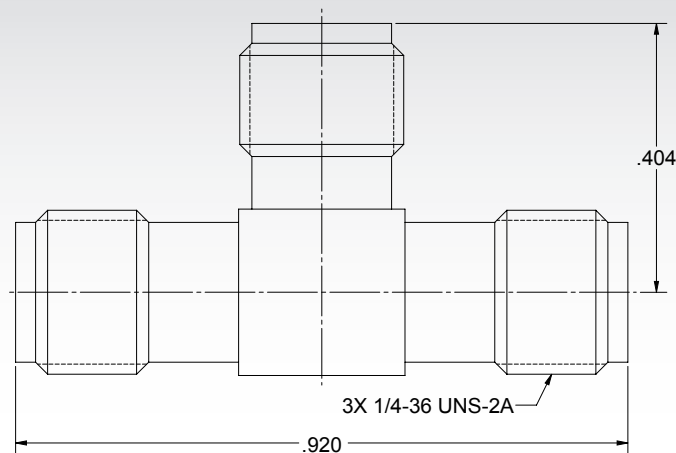
P/N
M55339/44-30001

## SMA Female to Female to Male Adapter



P/N
M55339/30-30101

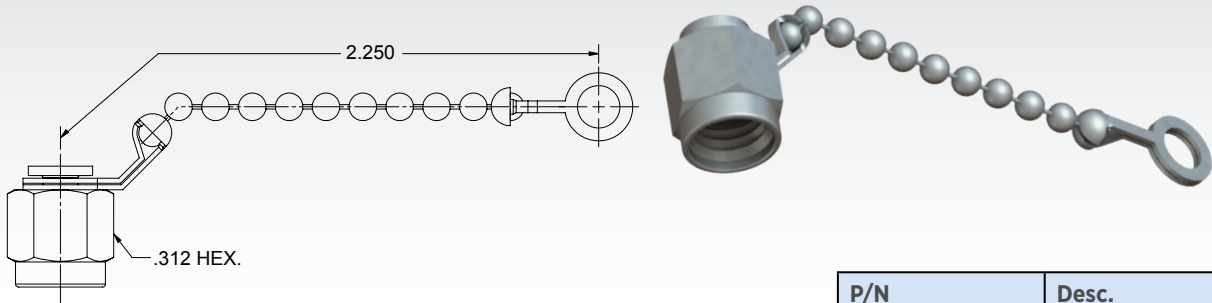
## SMA Female to Female to Female Adapter



P/N
M55339/30-30003

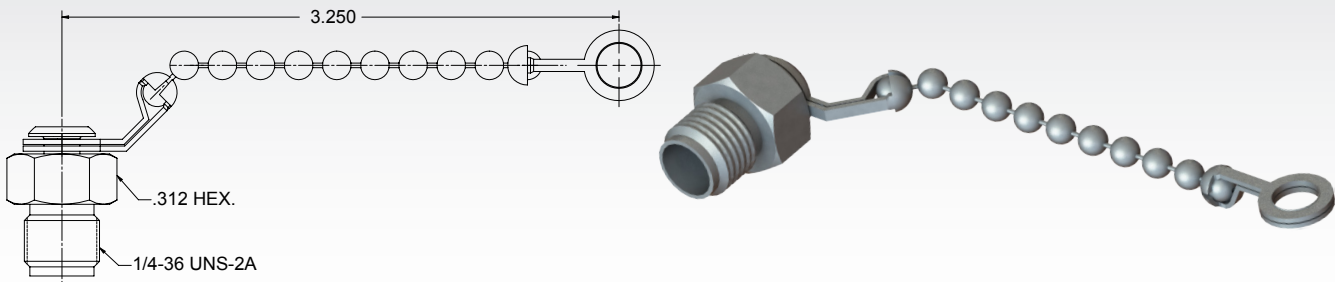
# SMA SERIES

## Male Dust Cap



P/N	Desc.
M39012/25-3024	Bead Chain
M39012/25-3025	Link Chain
M39012/25-3124	Rope Chain

## Female Dust Cap



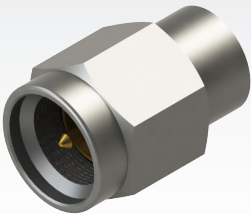
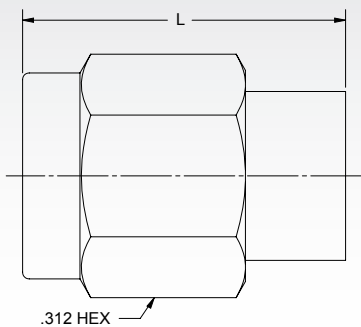
P/N	Desc.
M39012/25-3026	Bead Chain

## Male Short



P/N
SF8018-6007

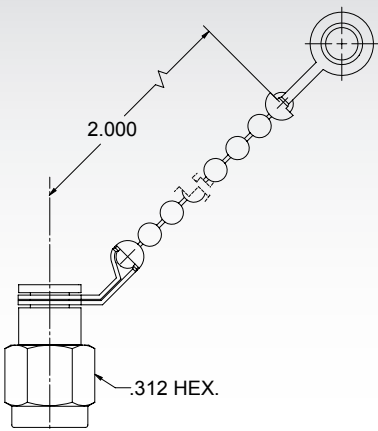
Male Termination



P/N	L
SF8018-6060	.330"
8018-6061	.330"
SF8018-6061	.330"
8018-6172	.500"
8018-6173	.500"
8018-6005	.520"
SF8018-6005	.520"

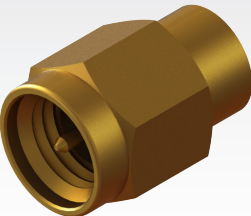
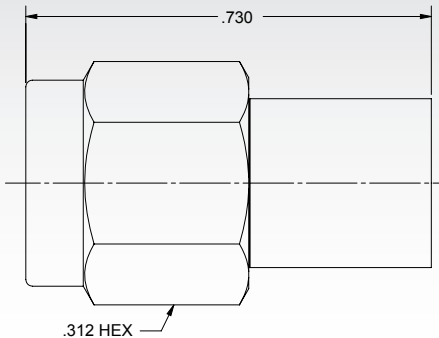
'SF' denotes passivated Stainless Finish

Male Termination



P/N	Desc.
8018-6174	Bead Chain

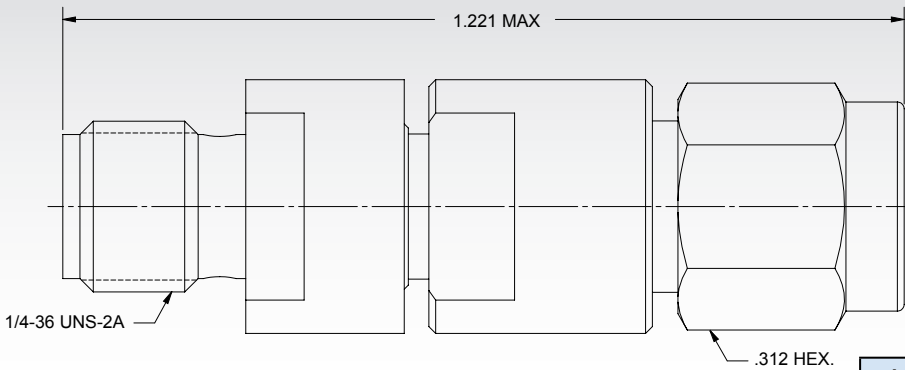
Male Termination



P/N	Desc.
M39030/3-XXN	Nonscreened
M39030/3-XXS	Screened

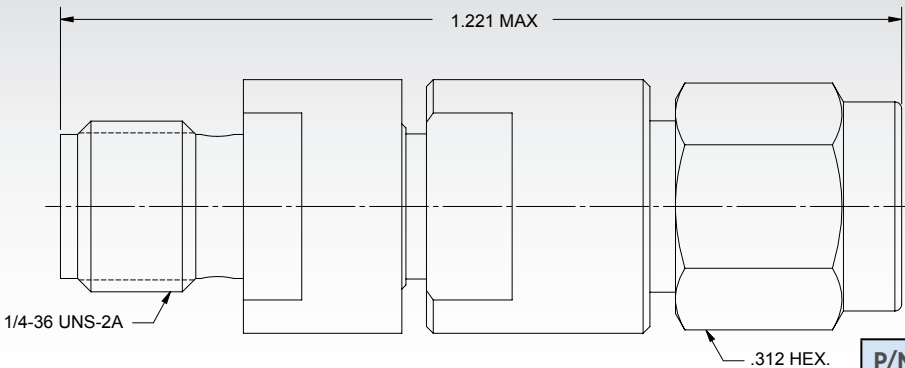
# SMA SERIES

## SMA Male to Female Attenuator, 12.4 GHz



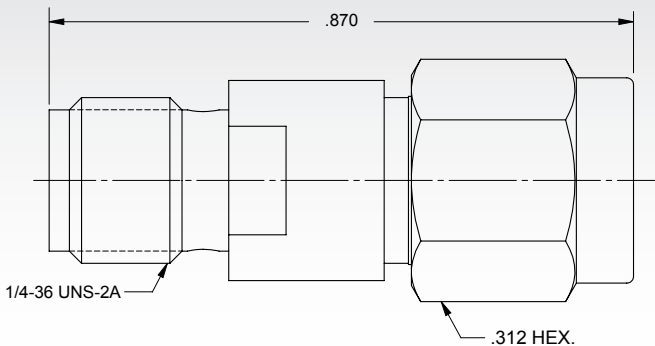
P/N	Desc.
M3933/14-XXN	Nonscreened
M3933/14-XXS	Screened

## SMA Male to Female Attenuator, 18 GHz



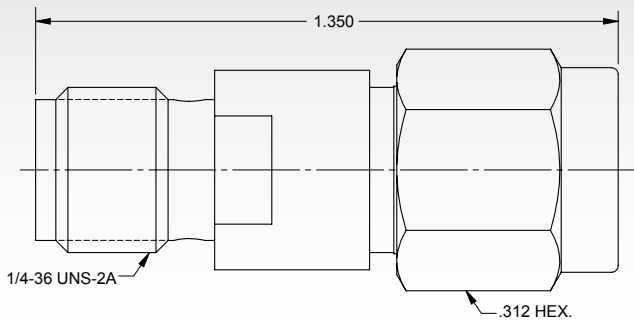
P/N	Desc.
M3933/16-XXN	Nonscreened
M3933/16-XXS	Screened

## SMA Male to Female Attenuator, 18 GHz



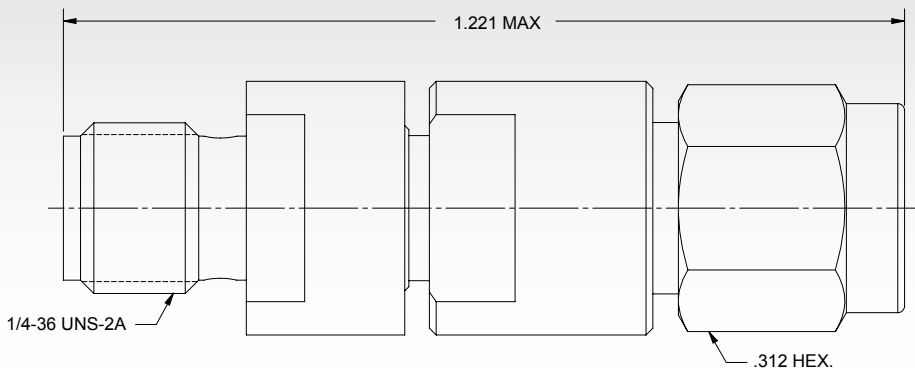
P/N	Desc.
M3933/25-XXN	Nonscreened
M3933/25-XXS	Screened

SMA Male to Female Attenuator, 18 GHz



P/N
SF0929-6200-XX

SMA Male to Female Attenuator, 18 GHz



P/N
SF0930-6200-XX

## 2.92MM SERIES

### 2.92mm Interface at a Glance

The 2.92mm connector was developed for use to 40 GHz. The male pin is shorter than that of an SMA or 3.5mm to ensure that the outer contacts of the male and female connectors engage before the pin and female receptacle do. This ensures that the pin and socket will not see excessive wear and mating stress seen by misalignment in an SMA or 3.5mm connector. The 2.92mm connector also has a thicker wall than a standard SMA. The 2.92mm series mates with SMA and 3.5mm connectors.

#### Electrical Specifications

Impedance	50Ω
Frequency	40 GHz
VSWR	1.03 + .005 f
Insertion Loss	.04 √ f
Shielding Effectiveness	≥ 100 dB

#### Mechanical Specifications

Mating Cycles	500
Mating Torque	7 - 10 in - lbs
Inter-mate ability	SMA, 3.5mm

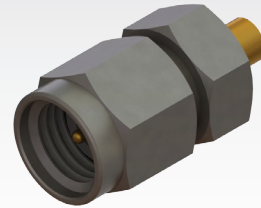
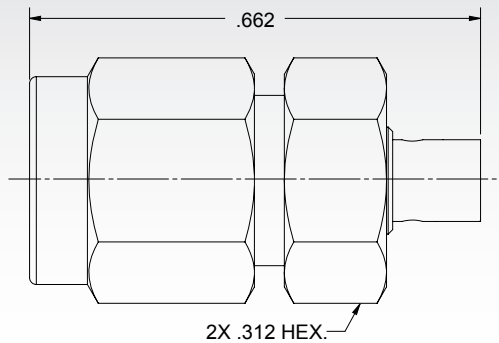
#### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +125°C
Moisture Resistance	MIL-STD-202, Method 106, Less Step 7B
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

Note: Specifications, dimensions and images are typical for the series and may vary by part number

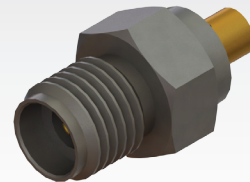
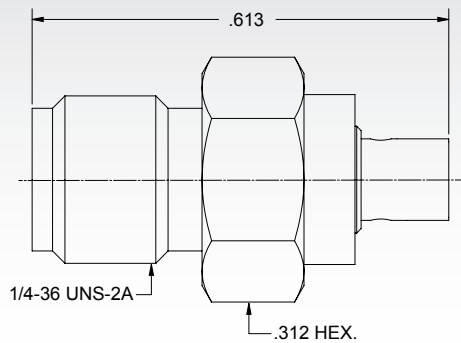
## 2.92MM SERIES

### Male Cable Connector



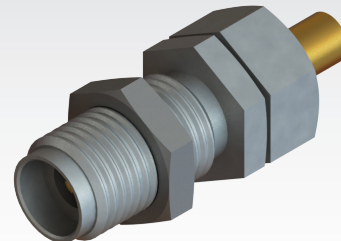
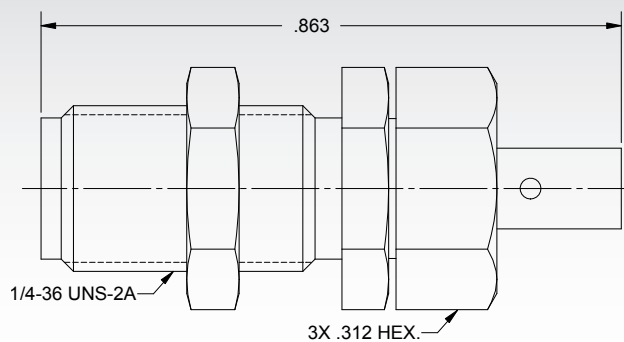
Cable	P/N
.047	SF1511-60069
.085	SF1511-60071
.141	SF1511-60044

### Female Cable Connector



Cable	P/N
.047	SF1521-60039
.085	SF1521-60077
.141	SF1521-60042

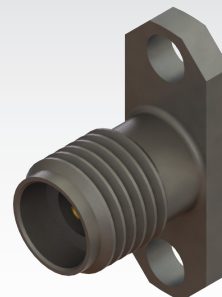
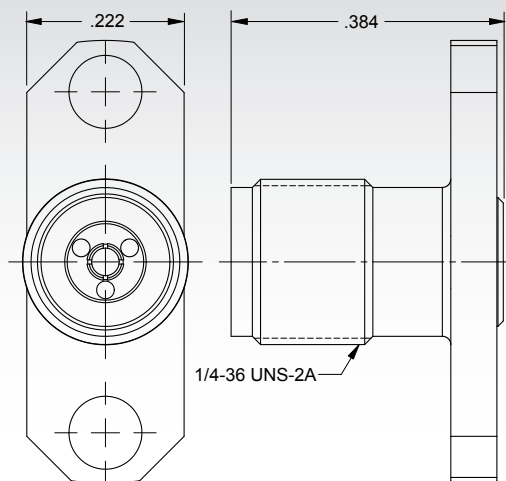
### Female Bulkhead Cable Connector



Cable	P/N
.047	SF1521-60045
.085	SF1521-60025
.141	SF1521-60044

## 2.92MM SERIES

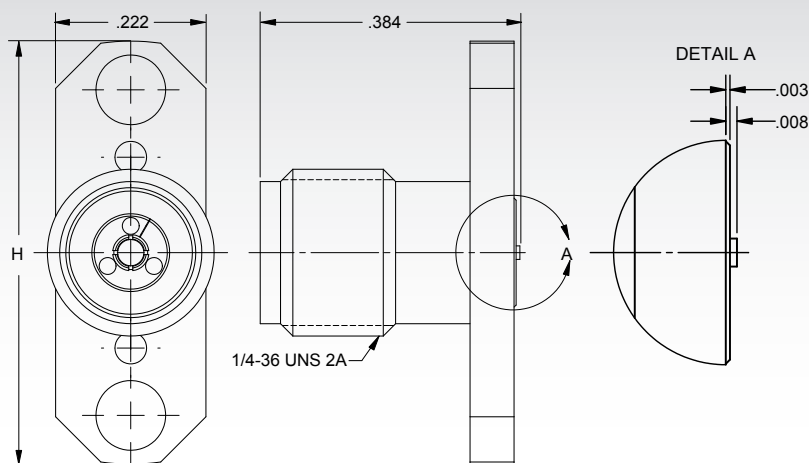
### Female Flange Mount Connector, 2 Hole (Accepts Ø.012" Pin)



P/N

SF1552-6002

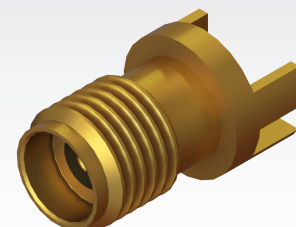
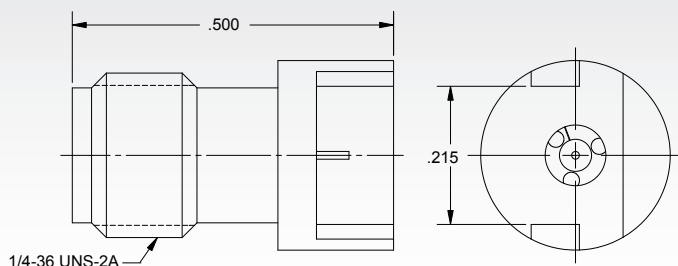
### Female Flange Compression Mount Connector, 2 Hole



Contact SV directly to access our database of recommended PCB layouts

P/N	Desc.	H
SF1521-60013	Stripline	.625"
SF1521-60061	Stripline	.400"
SF1521-60070	CPW, Microstrip	.400"

### Female Edge Launch Connector (.062" PCB Thickness)



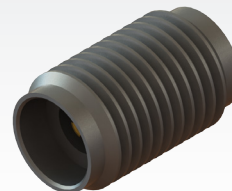
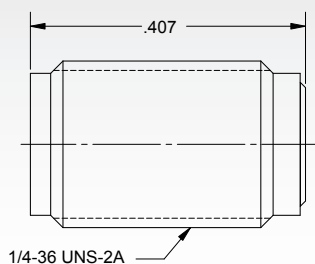
Contact SV directly to access our database of recommended PCB layouts

P/N

1521-60051

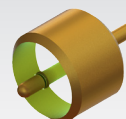
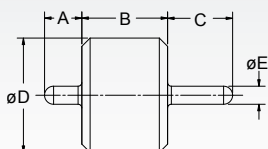
## 2.92MM SERIES

### Female Sparkplug Connector



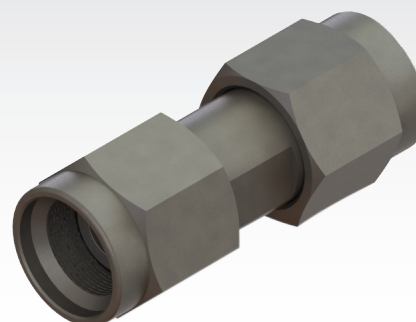
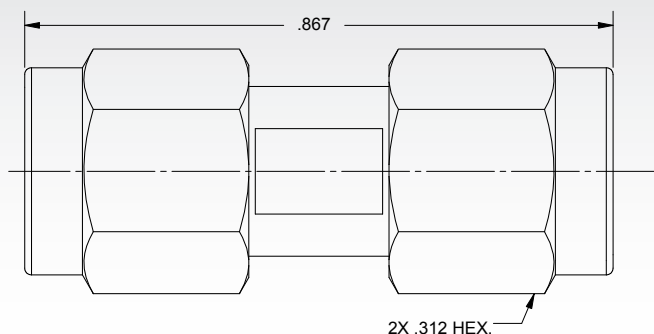
P/N
SF1575-6007

### Feed-Thru Hermetic Seal



P/N	A	B	C	øD	øE
066-15-000	.040"	.055"	.029"	.076"	.012"
066-15-001	.040"	.055"	.080"	.076"	.012"
066-15-002	.030"	.055"	.026"	.068"	.009"
066-15-003	.030"	.055"	.080"	.068"	.009"
066-15-004	.030"	.055"	.120"	.068"	.009"
066-15-005	.050"	.060"	.125"	.158"	.020"

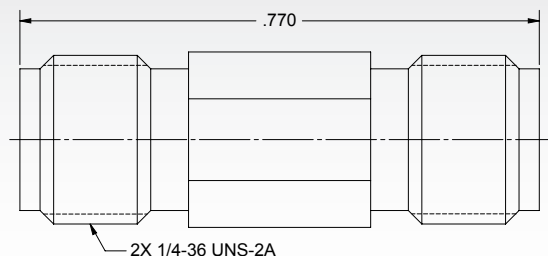
### 2.92mm Male to Male Adapter



P/N
SF1593-6000

## 2.92MM SERIES

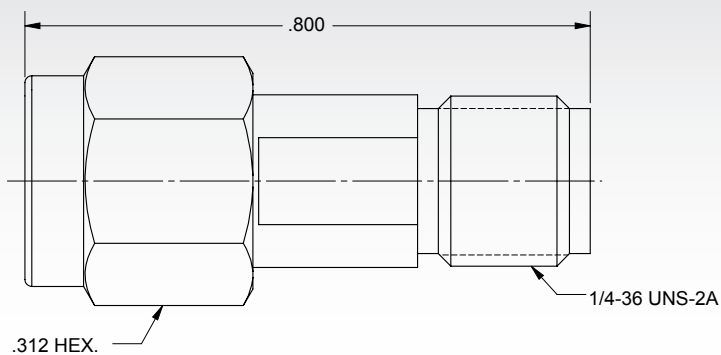
### 2.92mm Female to Female Adapter



P/N

SF1590-6000

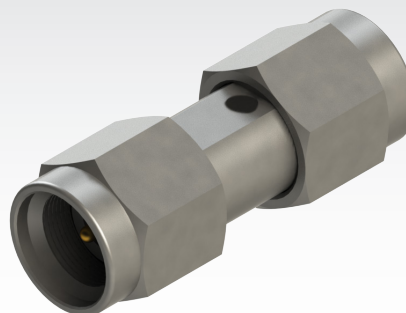
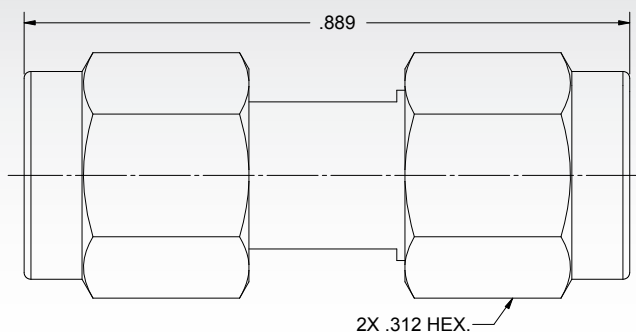
### 2.92mm Male to Female Adapter



P/N

SF1597-6003

### 2.92mm Male to SMA Male Adapter



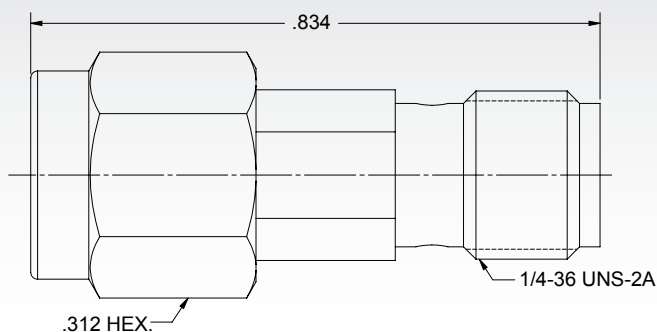
P/N

SF1115-6011

## 2.92MM SERIES

2.92MM SERIES

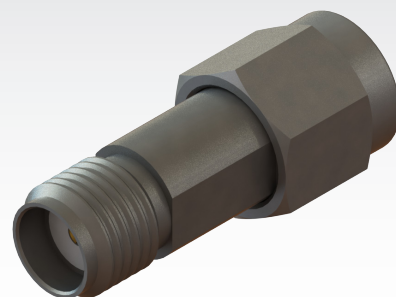
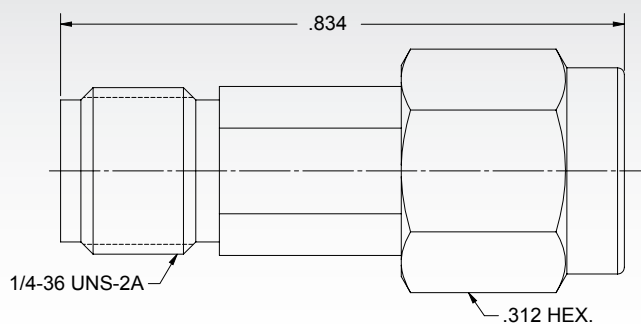
### 2.92mm Male to SMA Female Adapter



P/N

SF1115-6009

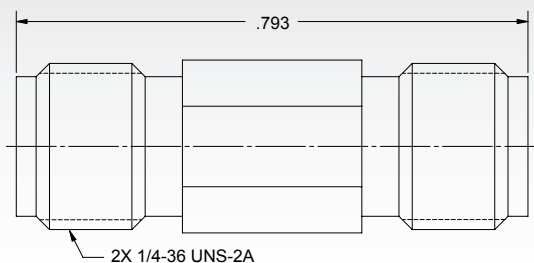
### 2.92mm Female to SMA Male Adapter



P/N

SF1115-6007

### 2.92mm Female to SMA Female Adapter

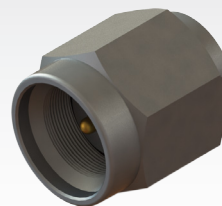
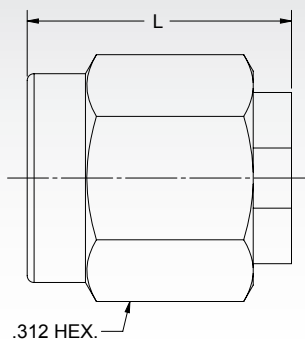


P/N

SF1115-6005

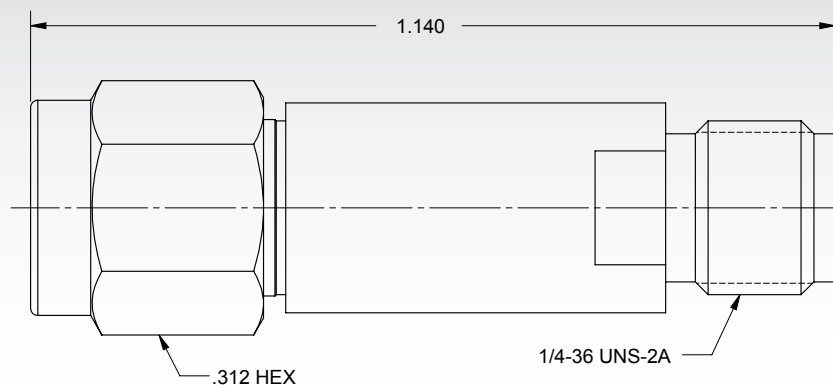
## 2.92MM SERIES

### Male Termination



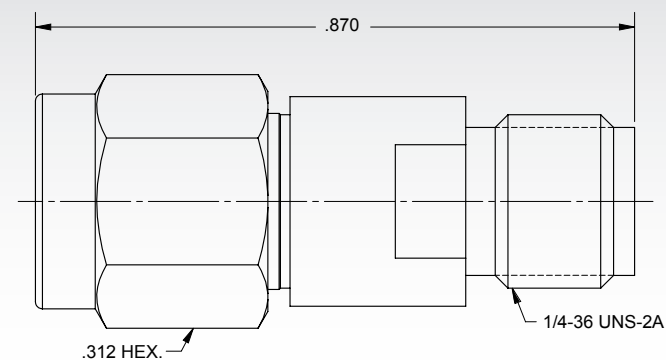
P/N	L
SF8015-6002	.375"
SF8015-6007	.560"

### 2.92mm Female to Male Attenuator, 32 GHz



P/N	Desc.
M3933/30-XXN	Nonscreened
M3933/30-XXS	Screened

### 2.92mm Male to Female Attenuator, 40 GHz



P/N
SF0915-6200-XX



# 2.4MM SERIES

## 2.4mm Interface at a Glance

The 2.4mm connector was developed for use to 50 GHz. This connector series uses a thick outer wall to eliminate the fragility seen in SMA and 2.92mm connectors. The female socket is also strengthened to ensure reliable mating. The 2.4mm series mates with SMA, 3.5mm and 2.92mm connectors with adapters and can mate with the 1.85mm series without adapters.

### Electrical Specifications

Impedance	50Ω
Frequency	50 GHz
VSWR	1.03 + .005 f
Insertion Loss	.04 √ f
Shielding Effectiveness	≥ 100 dB

### Mechanical Specifications

Mating Cycles	500
Recommended Torque	5 - 7 in - lbs
Inter-mate ability	1.85mm

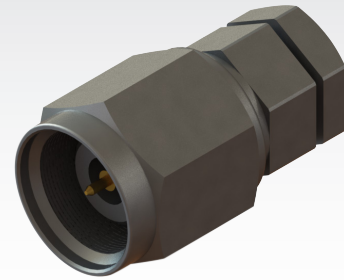
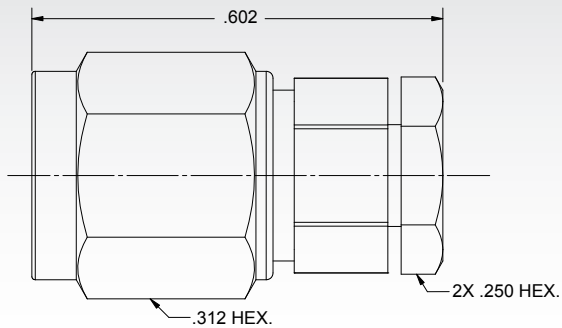
### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +125°C
Moisture Resistance	MIL-STD-202, Method 106, Less Step 7B
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

Note: Specifications, dimensions and images are typical for the series and may vary by part number

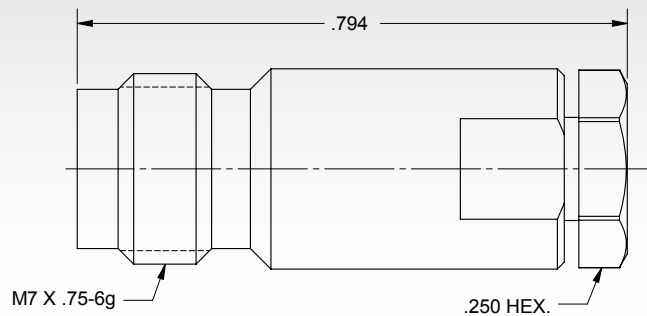
## 2.4MM SERIES

### Male Cable Connector



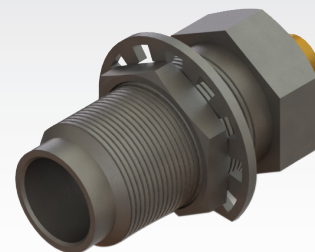
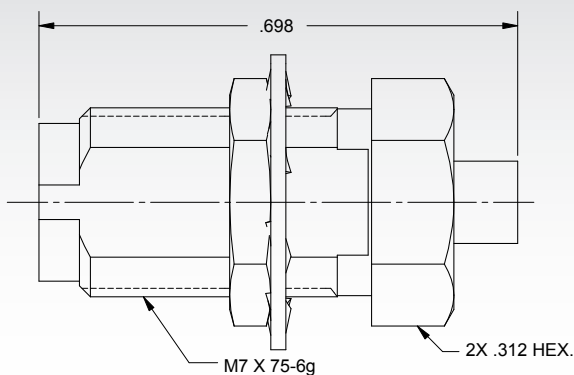
Cable	P/N
.047	SF1611-60001
.085	SF1611-60003

### Female Cable Connector



Cable	P/N
.047	SF1621-60014
.085	SF1621-60009

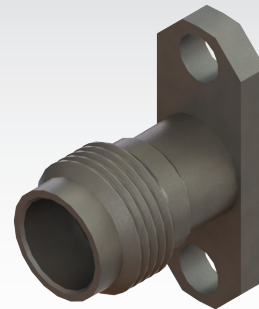
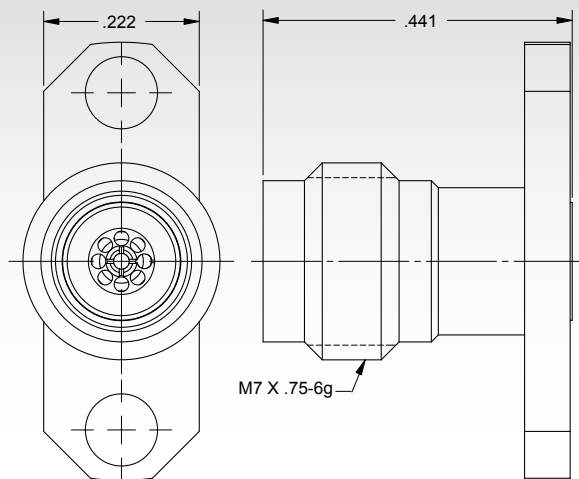
### Female Bulkhead Cable Connector



Cable	P/N
.047	SF1621-60005
.085	SF1644-6001

## 2.4MM SERIES

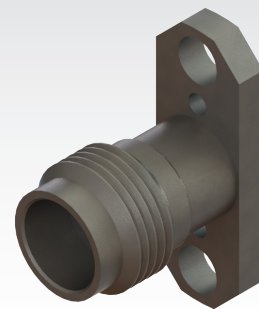
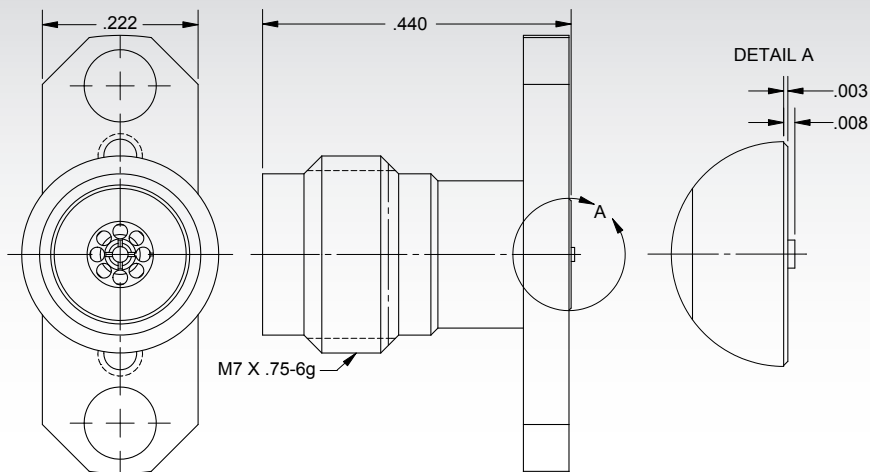
### Female Flange Mount Connector, 2 Hole (Accepts Ø.012" Pin)



P/N

SF1621-60017

### Female Flange Compression Mount Connector, 2 Hole

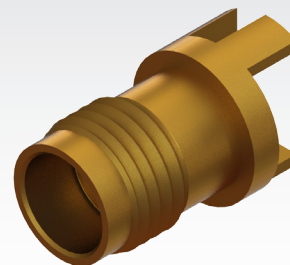
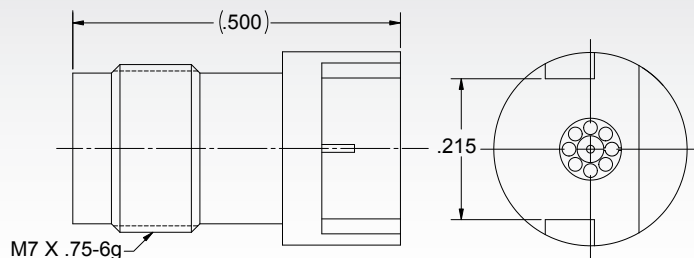


P/N

SF1621-60003

Contact SV directly to access our database of recommended PCB layouts

### Female Edge Launch Connector (.062" PCB Thickness)



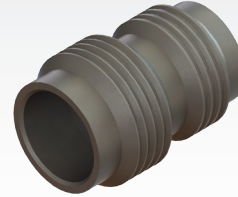
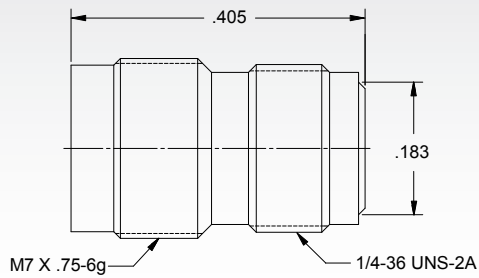
P/N

1621-60008

Contact SV directly to access our database of recommended PCB layouts

## 2.4MM SERIES

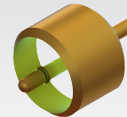
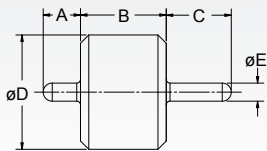
### Male Sparkplug Connector (Accepts Ø.008" Pin)



P/N

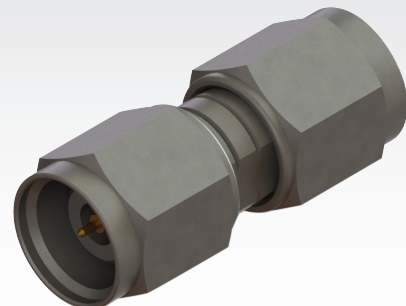
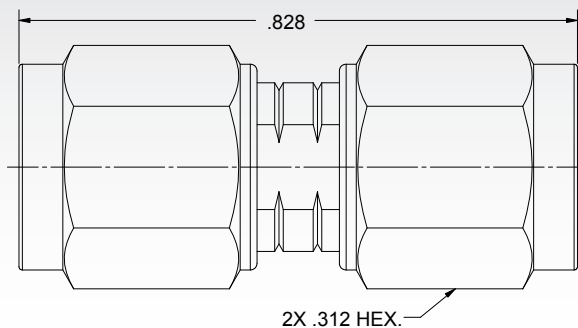
SF1675-600 4

### Feed-Thru Hermetic Seal



P/N	A	B	C	ØD	ØE
066-15-000	.040"	.055"	.029"	.076"	.012"
066-15-001	.040"	.055"	.080"	.076"	.012"
066-15-002	.030"	.055"	.026"	.068"	.009"
066-15-003	.030"	.055"	.080"	.068"	.009"
066-15-004	.030"	.055"	.120"	.068"	.009"
066-15-005	.050"	.060"	.125"	.158"	.020"

### 2.4mm Male to Male Adapter

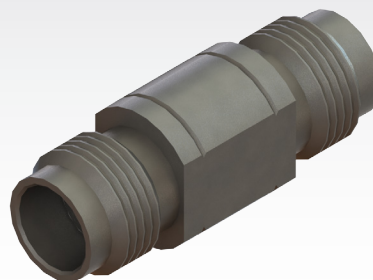
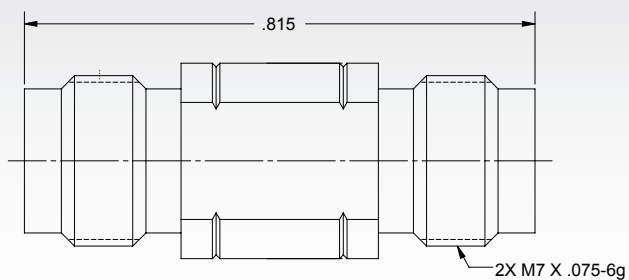


P/N

SF1116-6039

## 2.4MM SERIES

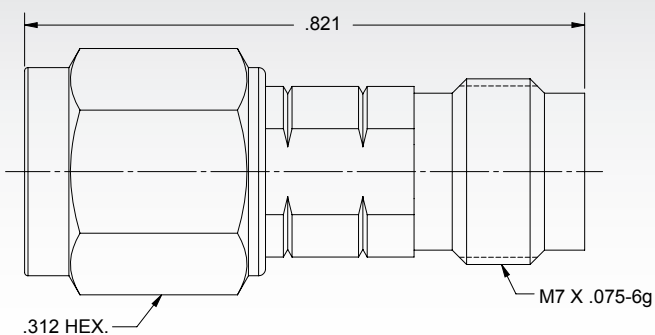
### 2.4mm Female to Female Adapter



P/N

SF1116-6037

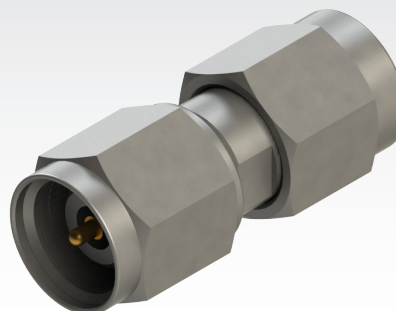
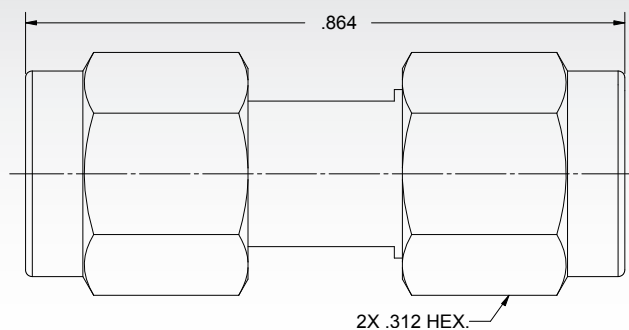
### 2.4mm Male to Female Adapter



P/N

SF1116-6040

### 2.4mm Male to 2.92mm Male Adapter

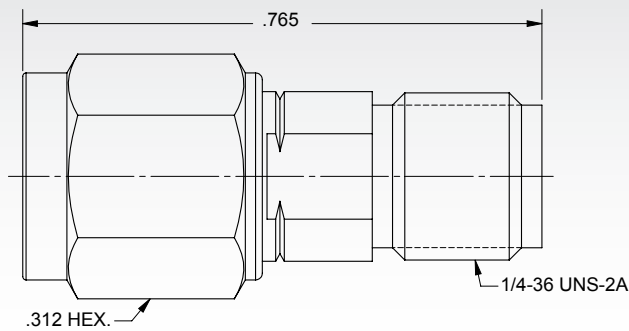


P/N

SF1116-6007

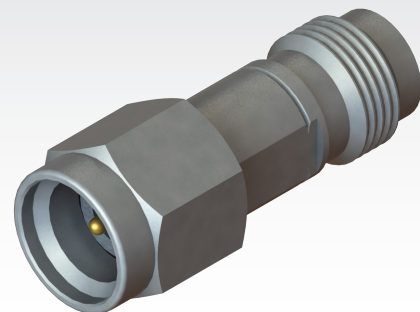
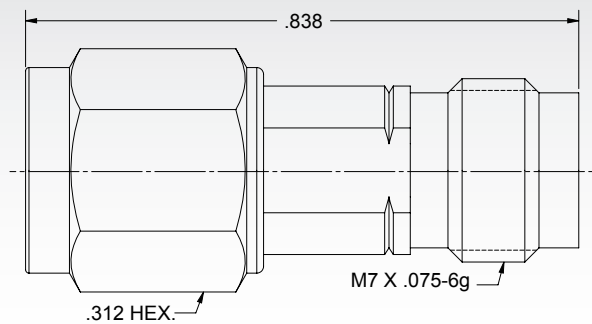
## 2.4MM SERIES

### 2.4mm Male to 2.92mm Female Adapter



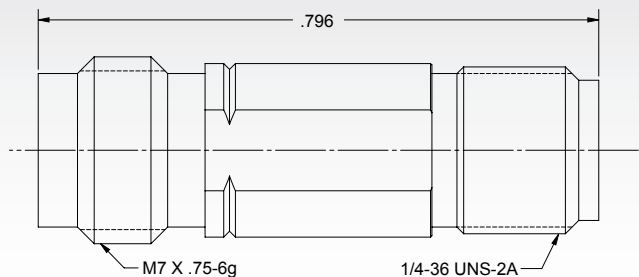
P/N
SF1116-6002

### 2.4mm Female to 2.92mm Male Adapter



P/N
SF1116-6003

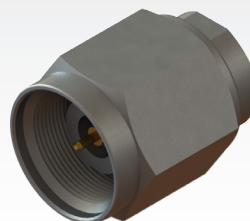
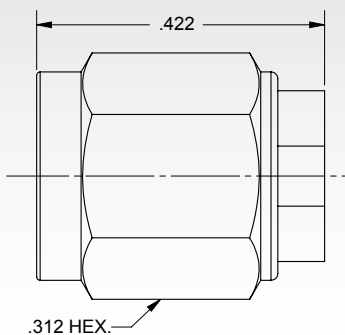
### 2.4mm Female to 2.92mm Female Adapter



P/N
SF1116-6004

## 2.4MM SERIES

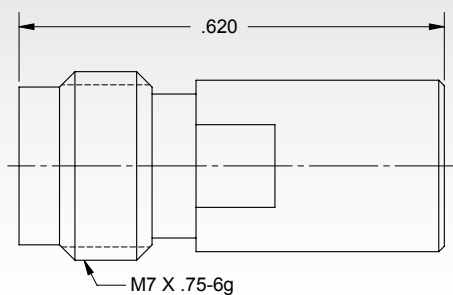
### Male Termination



P/N

SF8016-6304

### Female Termination



P/N

SF8016-6402



# 1.85MM SERIES

## 1.85mm Interface at a Glance

The 1.85mm connector was designed for mode free operation through 65 GHz. The interface uses a mostly air-dielectric with a support bead that is set back in the body of the connector to reduce bead interaction in a mated pair. Like the 2.92mm and 2.4mm connector, the body has been designed to ensure that the outer conductors engage before the center conductors make contact. The 1.85mm interface uses an M7 thread and is compatible only with the 2.4mm interface. SV Microwave supplies adapters to mate 1.85mm connectors to SMA and 2.92mm connectors.

### Electrical Specifications

Impedance	50Ω
Frequency	65 GHz
VSWR	1.03 + .005 f
Insertion Loss	.04 √ f
Shielding Effectiveness	≥ 100 dB

### Mechanical Specifications

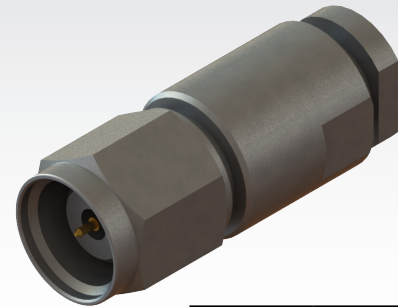
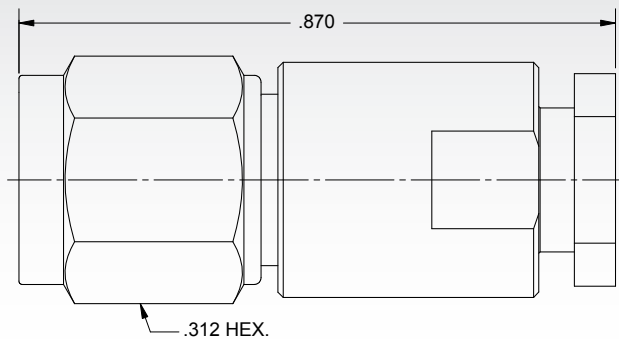
Mating Cycles	500
Mating Torque	5 - 7 in - lbs
Inter-mate ability	2.4mm

### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +125°C
Moisture Resistance	MIL-STD-202, Method 106, Less Step 7B
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

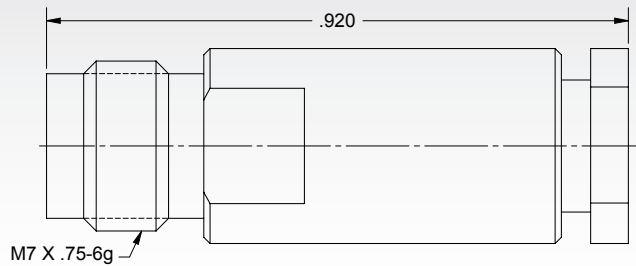
Note: Specifications, dimensions and images are typical for the series and may vary by part number

## Male Cable Connector



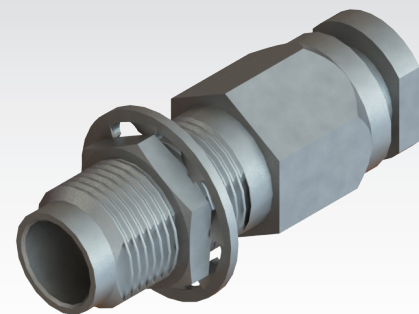
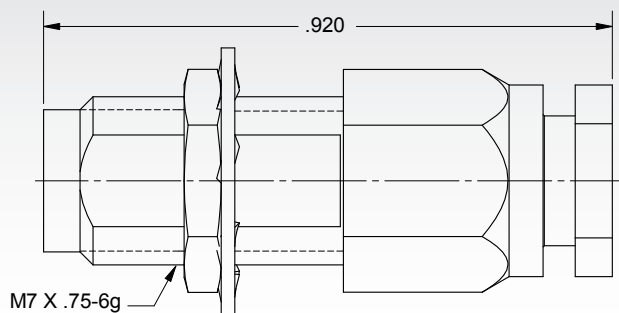
Cable	P/N
.047	SF3311-60002
.085	SF3311-60003

## Female Cable Connector



Cable	P/N
.047	SF3321-60005
.085	SF3321-60006

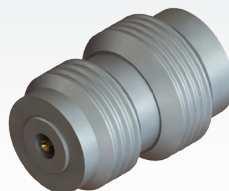
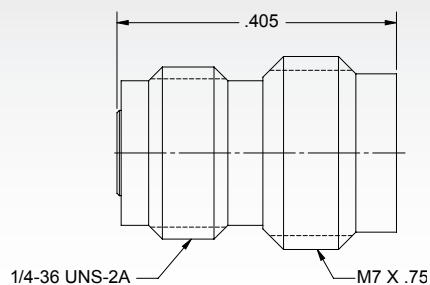
## Female Bulkhead Cable Connector



Cable	P/N
.047	SF3321-60004
.085	SF3321-60007

# 1.85MM SERIES

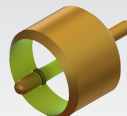
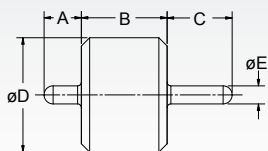
## Female Sparkplug Connector (Accepts Ø.008" Pin)



P/N

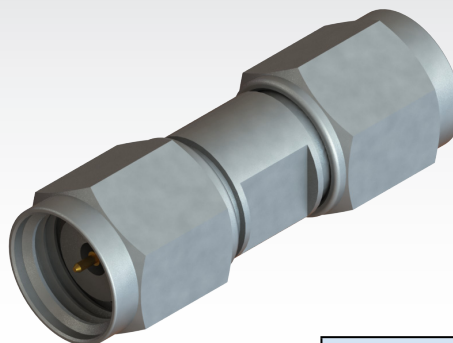
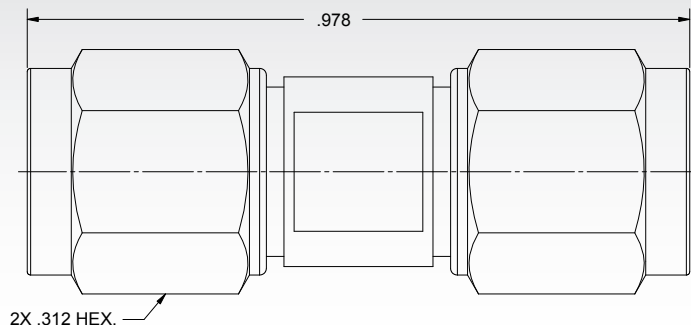
SF3375-6001

## Feed-Thru Hermetic Seal



P/N	A	B	C	øD	øE
066-15-000	.040"	.055"	.029"	.076"	.012"
066-15-001	.040"	.055"	.080"	.076"	.012"
066-15-002	.030"	.055"	.026"	.068"	.009"
066-15-003	.030"	.055"	.080"	.068"	.009"
066-15-004	.030"	.055"	.120"	.068"	.009"
066-15-005	.050"	.060"	.125"	.158"	.020"

## 1.85mm Male to Male Adapter

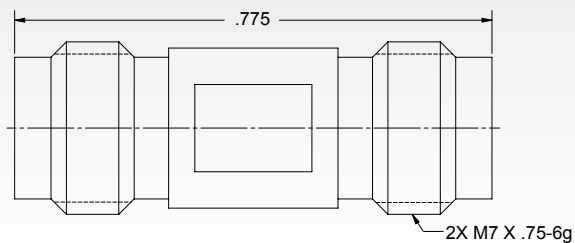


P/N

SF1133-6009

# 1.85MM SERIES

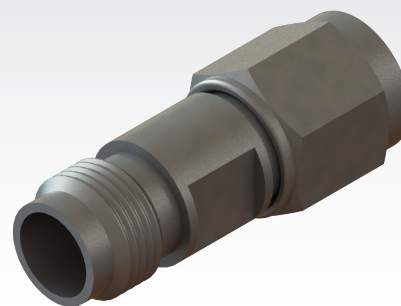
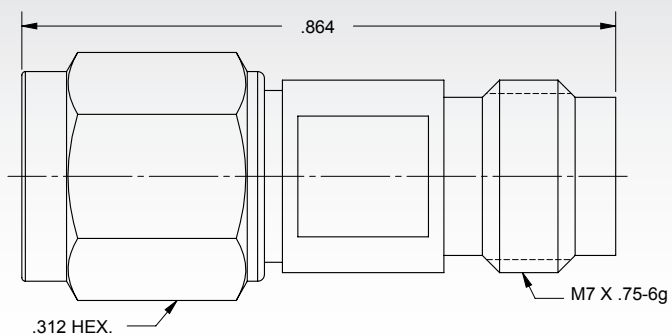
## 1.85mm Female to Female Adapter



P/N

SF1133-6008

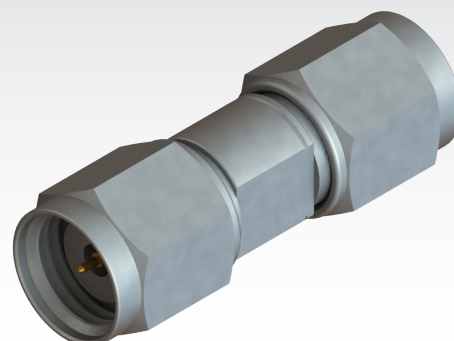
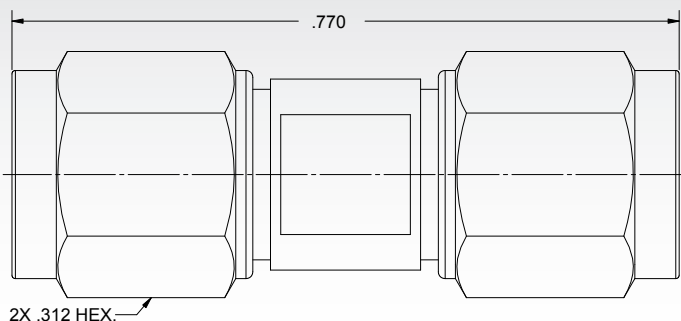
## 1.85mm Male to Female Adapter



P/N

SF1133-6010

## 1.85mm Male to 2.4mm Male Adapter

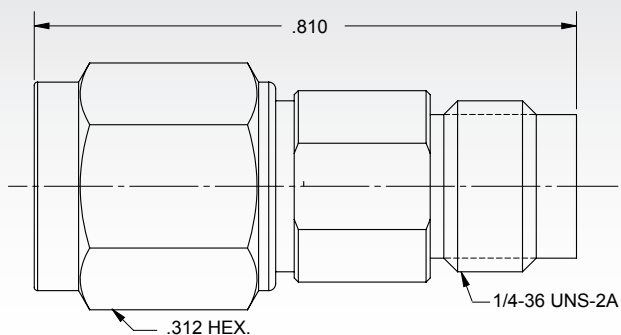


P/N

SF1133-6006

# 1.85MM SERIES

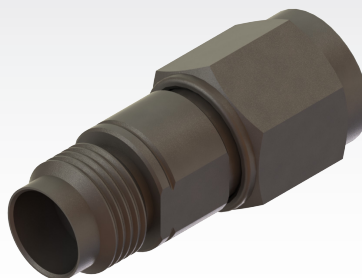
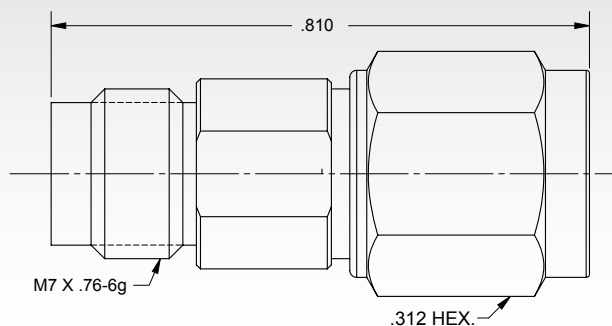
## 1.85mm Male to 2.4mm Female Adapter



P/N

SF1133-6004

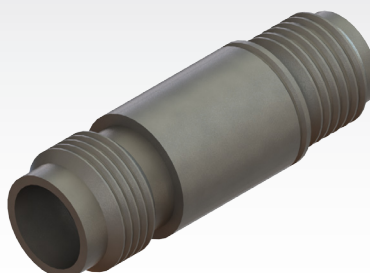
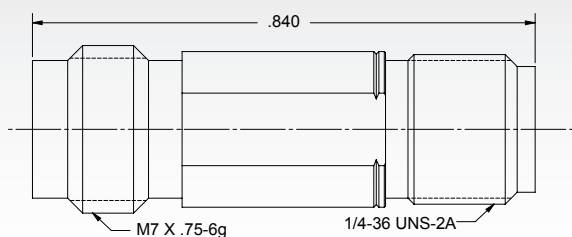
## 1.85mm Female to 2.4mm Male Adapter



P/N

SF1133-6005

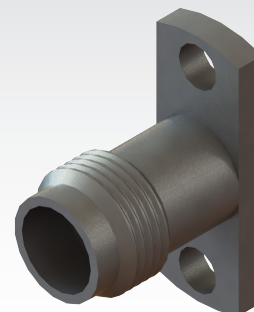
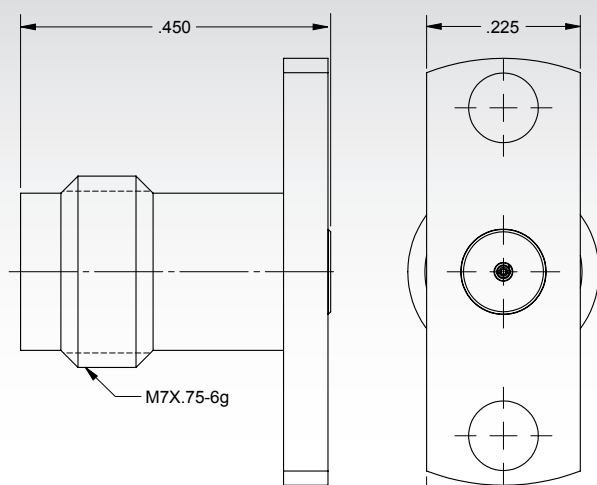
## 1.85mm Female to 2.4mm Female Adapter



P/N

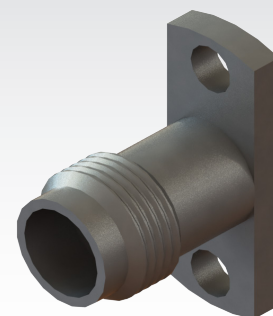
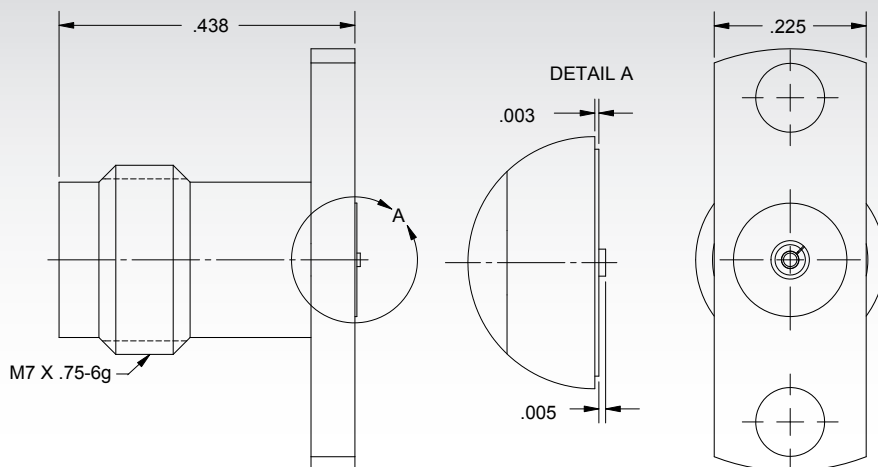
SF1133-6003

## Female Flange Mount Connector, 2 Hole (Accepts Ø.009" Pin)



P/N
SF3321-60003

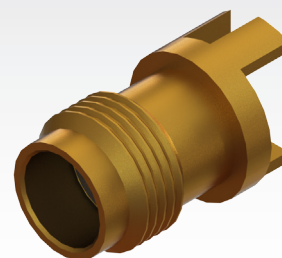
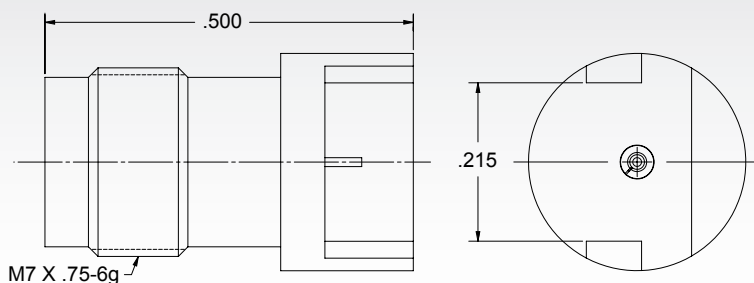
## Female Flange Compression Mount Connector, 2 Hole



P/N
SF3321-60011

Contact SV directly to access our database of recommended PCB layouts

## Female Edge Launch Connector (.062" PCB Thickness)



P/N
3321-60001

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## SMP Interface at a Glance

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.

### Electrical Specifications

Impedance	50Ω
Frequency	40 GHz
VSWR	1.15:1 to 26.5 GHz typ.; 1.5:1 to 40 GHz typ.
Insertion Loss	.06 √ f
Shielding Effectiveness	≥ -80 dB DC - 3 GHz; ≥ -65 dB 3 - 26.5 GHz
Dielectric Withstanding Voltage	500 VRMS

### Mechanical Specifications

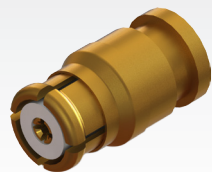
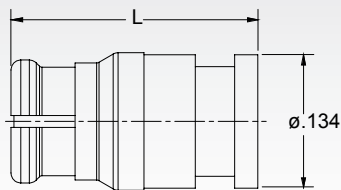
	SB	LD	FD
Mating Cycles	1000	500	100
Force to Engage/Disengage	3.0 / 0.5 lbs	5.0 / 7.0 lbs	7.0 / 9.0 lbs
Axial Misalignment			.010"
Radial Misalignment			± .010"

### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +165°C
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

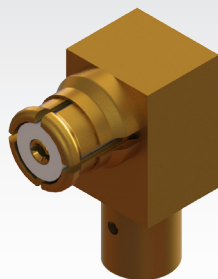
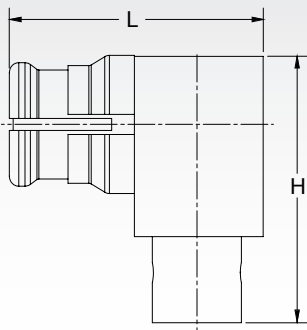
Note: Specifications, dimensions and images are typical for the series and may vary by part number

Female Cable Connector



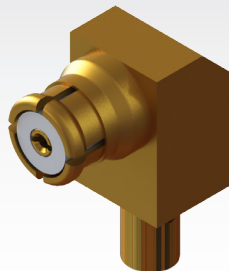
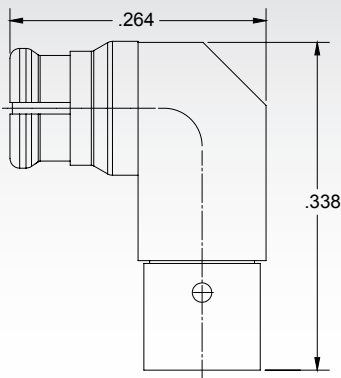
Cable	P/N	L
.047	1221-4010	.265"
.085	1221-4009	.265"
RG-174	1221-4005	.300"
RG-178	1221-4004	.250"

Female Cable Connector, R/A



Cable	P/N	L	H
.047	1213-4007	.265"	.220"
.047	1222-4012	.263"	.188"
.085	1222-4011	.265"	.188"
RG-174	1221-4006	.268"	.338"
RG-178	1222-4006	.268"	.266"

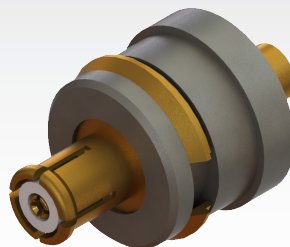
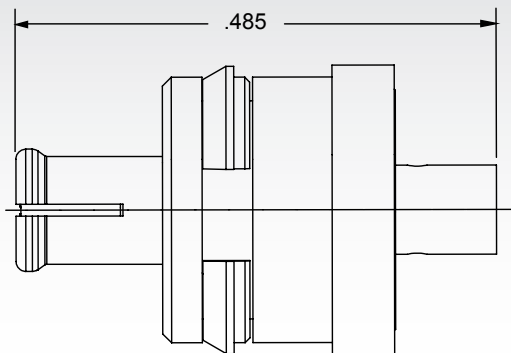
Female Cable Connector, Swept R/A



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

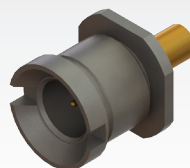
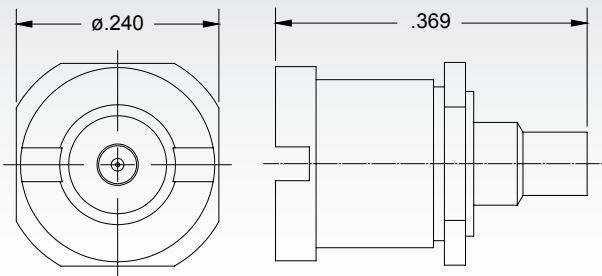
# SMP SERIES

## Female Snap-In Cable Connector



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

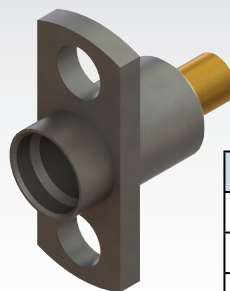
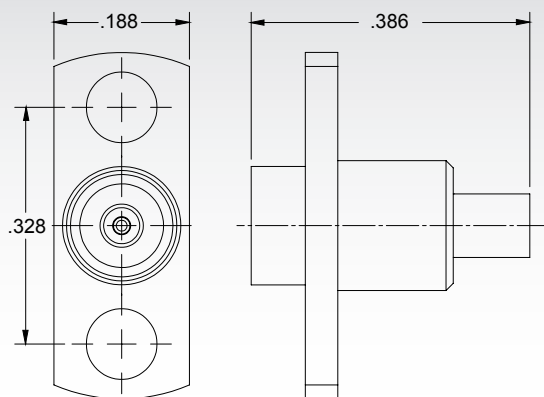
## Male Bulkhead Cable Connector



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

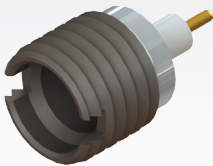
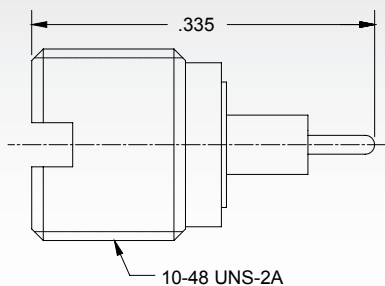
\* Note: Dimensions on Catchers Mitt do not match image shown in catalog

## Male Flange Mount Cable Connector, 2 Hole



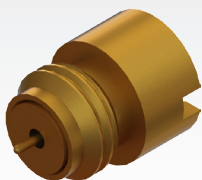
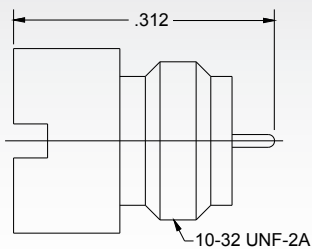
Detent	Cable	P/N
SB	.047	SF1211-6022
SB	.085	SF1211-6023
LD	.047	SF1211-6021
LD	.085	SF1211-6024
FD	.047	SF1233-6000
FD	.085	SF1211-6025

Male Thread-In Connector (.018")



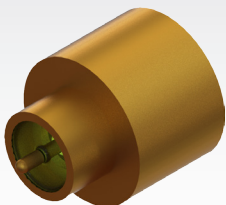
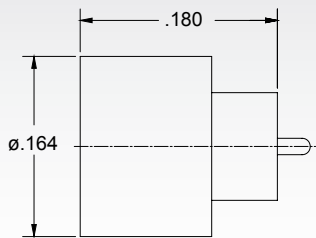
Detent	P/N
SB	SF1211-66114
LD	SF1211-66113
FD	SF1279-6001

Male Thread-In Hermetic Connector (.015")



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

Male Solder-In Hermetic Connector (.015")

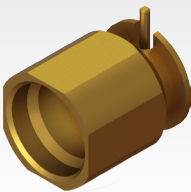
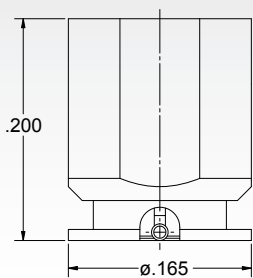


Detent	P/N
SB	1211-6043
LD	1211-60 2
FD	1211-6041

# SMP SERIES

SMP SERIES

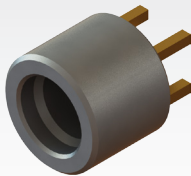
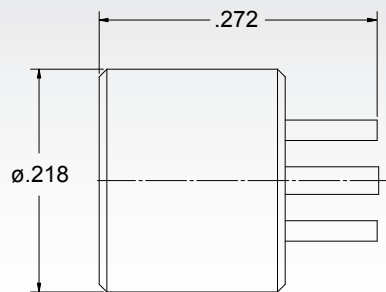
## Male Surface Mount Connector, R/A



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

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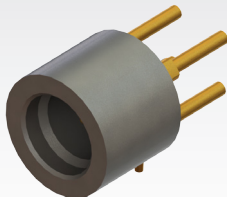
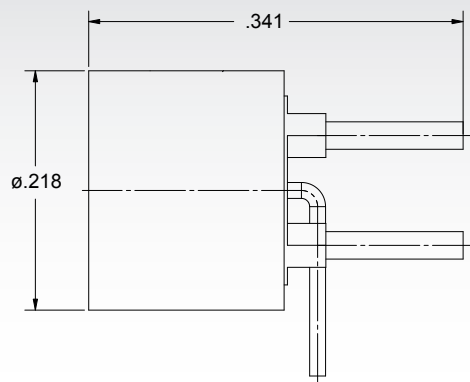
## Male PCB Thru-Hole Connector



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

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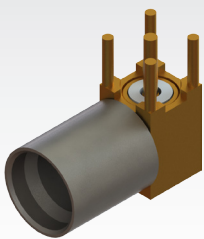
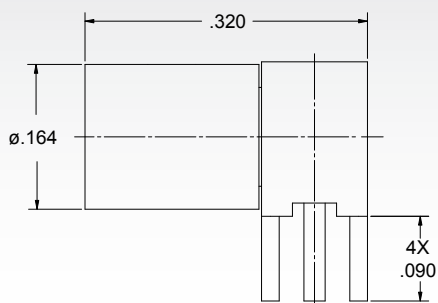
## Male PCB Thru-Hole Connector, R/A



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

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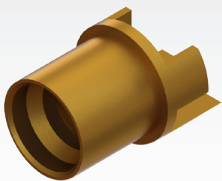
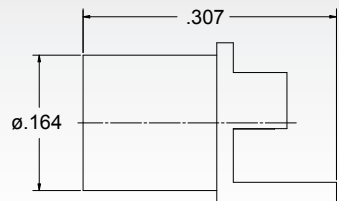
Male PCB Thru-Hole Connector, R/A



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

Contact SV directly to access our database of recommended PCB layouts

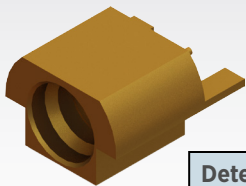
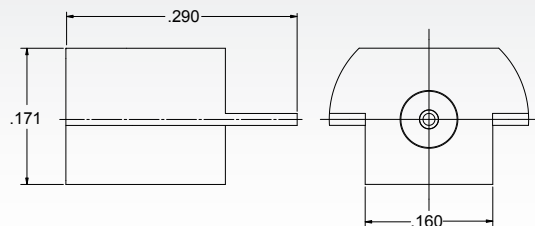
Male Edge Launch Connector (.062” PCB Thickness)



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

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Male Edge Launch Connector

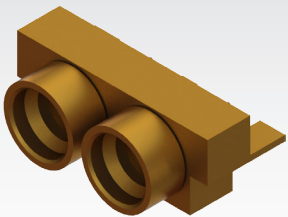
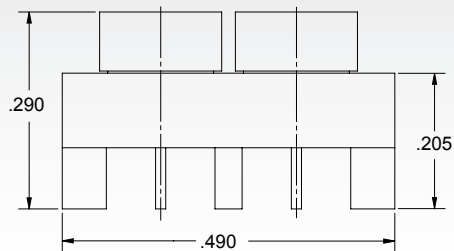


Detent	P/N
SB	1211-66139
LD	1211-66138
FD	1211-66137
CM	1211-66175*

\* Note: Dimensions on Catchers Mitt do not match image shown in catalog

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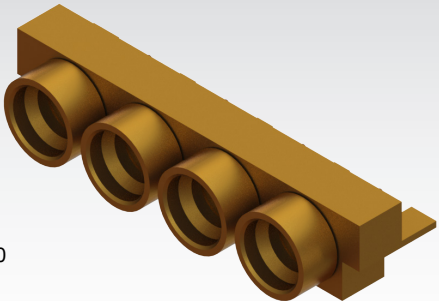
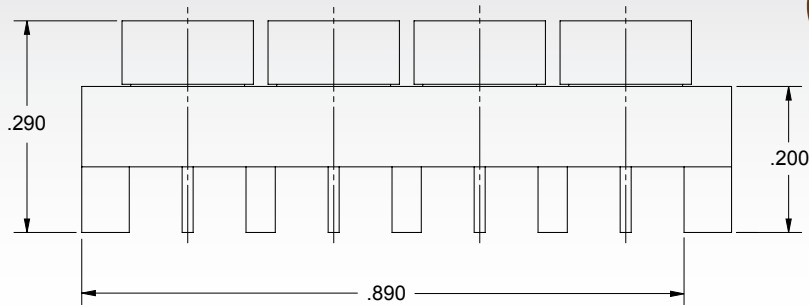
Male Edge Launch Connector, 2 Port



Detent	P/N
SB	9311-60033
LD	9311-60034
FD	9311-60035

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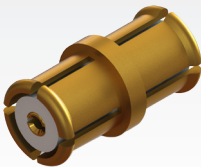
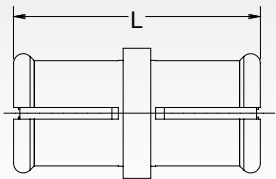
Male Edge Launch Connector, 4 Port



Detent	P/N
SB	9311-60036
LD	9311-60037
FD	9311-60038

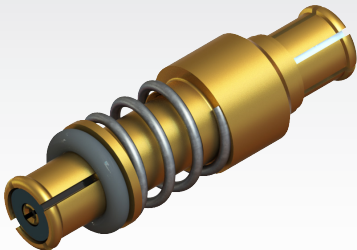
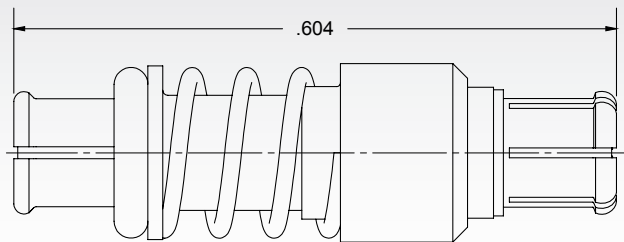
Contact SV directly to access our database of recommended PCB layouts

Female to Female Bullet



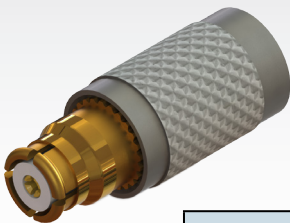
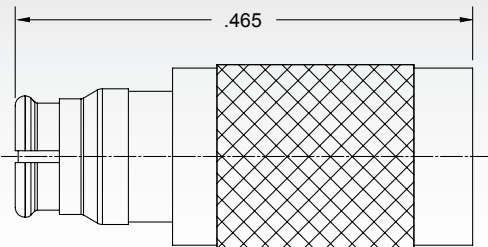
P/N	L
1290-4001	.254"
1290-4009	.395"
1290-4007	.769"

Female to Female Bullet, Spring Loaded



P/N
1112-4019

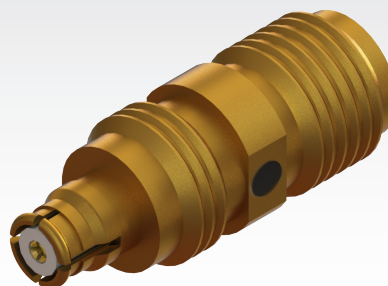
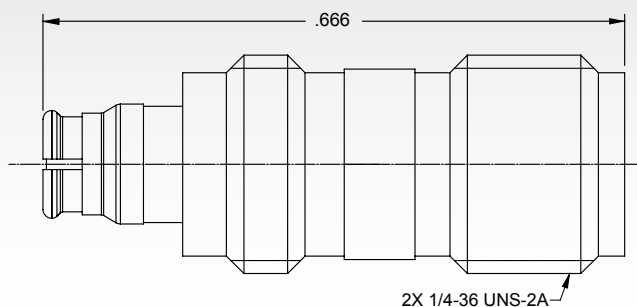
SMP Male to Female Adapter



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

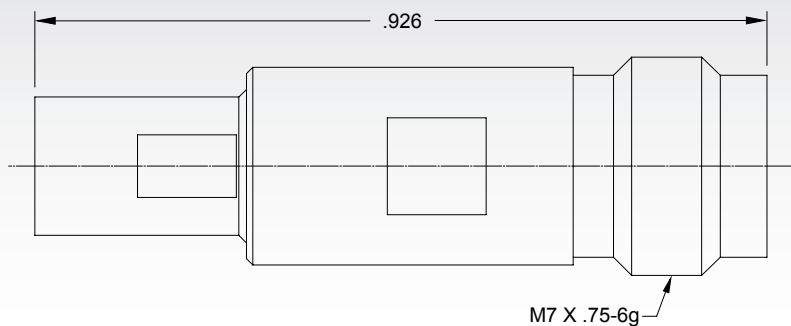
# SMP SERIES

## SMP Female to SMA Female Adapter



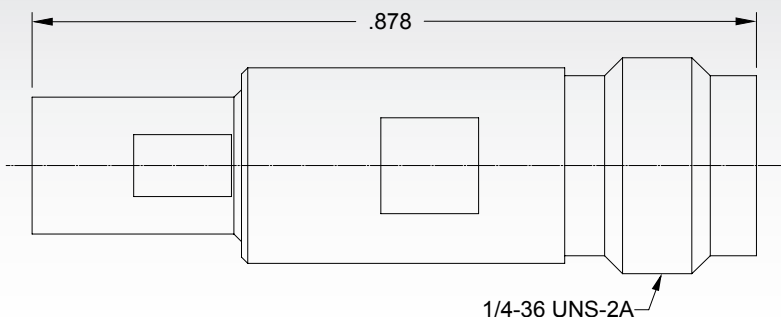
P/N
1112-4018

## SMP Male to 2.4mm Female Adapter



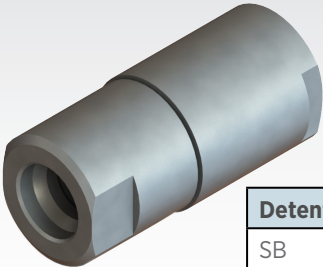
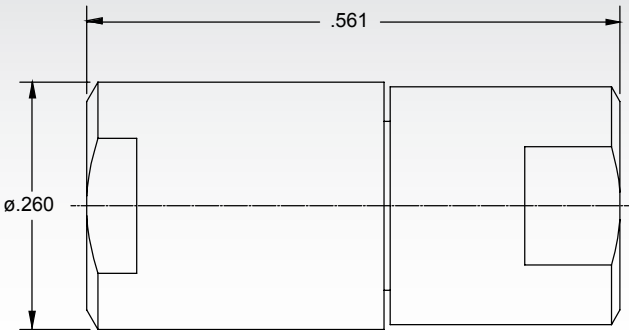
Detent	P/N
SB	SF1116-6016
LD	SF1116-6048
FD	1116-6014

## SMP Male to 2.92mm Female Adapter



Detent	P/N
SB	SF1112-6031
LD	SF1112-6025
FD	SF1112-6122

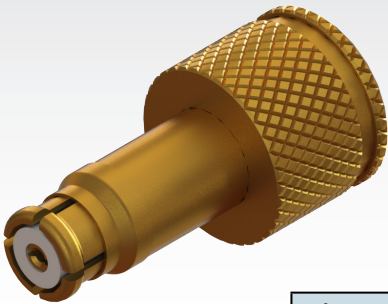
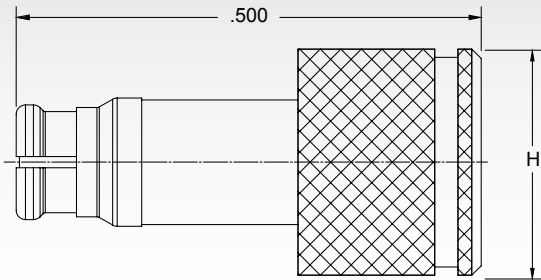
Male Termination



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

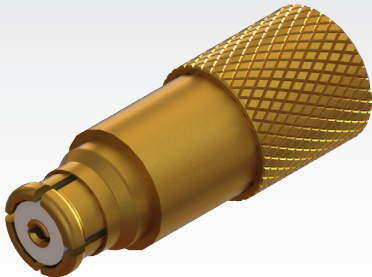
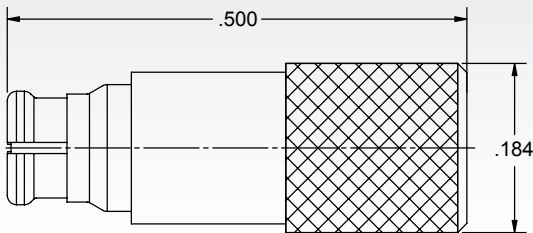
\* Note: Dimensions on Catchers Mitt do not match image shown in catalog

Female Termination



P/N	H
8012-4013	.245"
8012-4006	.187"

Female Short

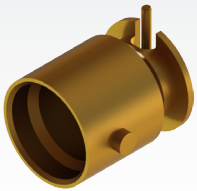
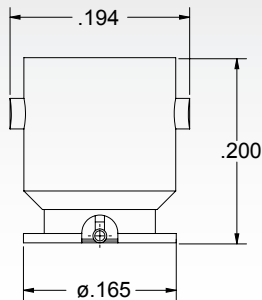


P/N
8012-4008

# SMP SERIES

SMP SERIES

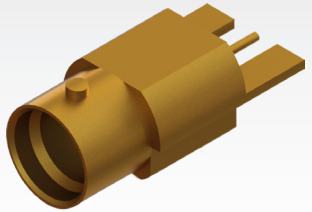
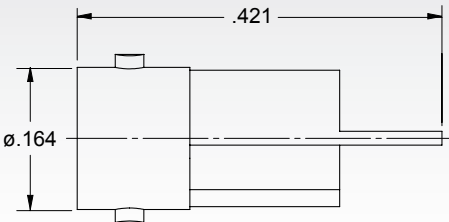
## Male QB Surface Mount Connector



Contact SV directly to access our database of recommended PCB layouts

P/N
1211-40032

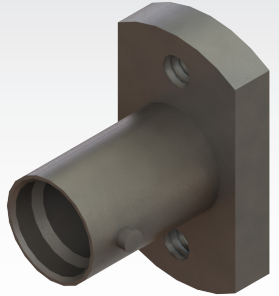
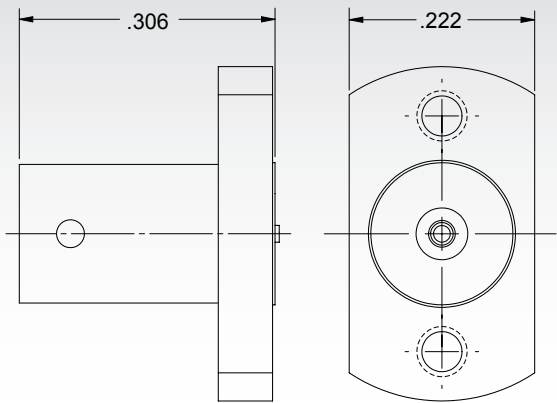
## Male QB Edge Launch Connector



Contact SV directly to access our database of recommended PCB layouts

P/N
1211-66195

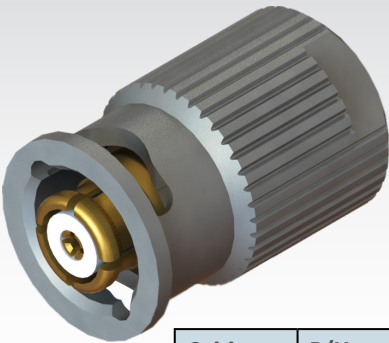
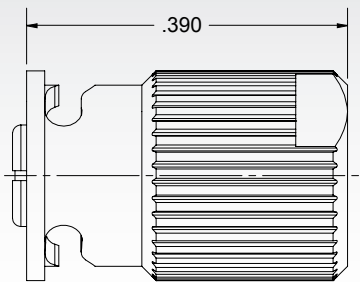
## Male QB Flange Compression Mount Connector, 2 Hole



Contact SV directly to access our database of recommended PCB layouts

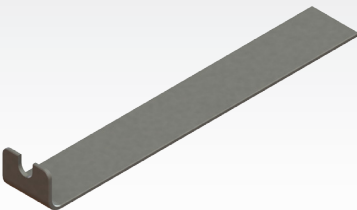
P/N
SF1211-66214

Female QB Cable Connector



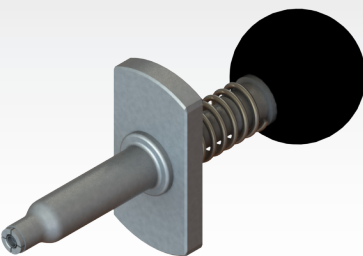
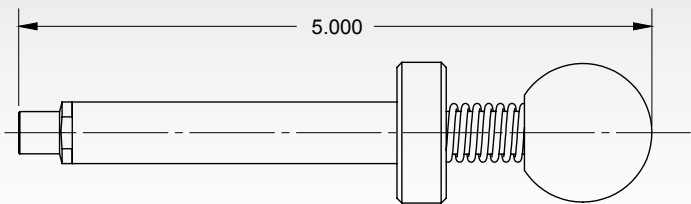
Cable	P/N
.047	1221-40051
.085	1221-40049
.141	1221-40050

Female Cable Removal Tool



P/N
500-12-019

Female Bullet Removal Tool



P/N
500-12-000

## SMPPM Interface at a Glance

SV Microwave offers a complete line of SMPPM connectors. The SMPPM connector was developed to improve on the application density and operating frequency range of the SMP connector. The SMPPM connector is widely used in high density, high performance applications today.

### Electrical Specifications

Impedance	50Ω
Frequency	65 GHz
VSWR	1.10:1 to 26.5 GHz typ.; 1.30:1 to 50 GHz typ.
Insertion Loss	.07 √ f
Shielding Effectiveness	≥ -80 dB typ.
Dielectric Withstanding Voltage	325 VRMS

### Mechanical Specifications

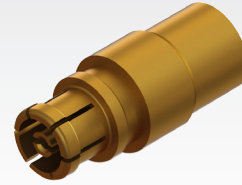
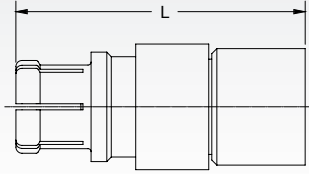
	SB	FD
Mating Cycles	500	100
Force to Engage/Disengage	2.5 / 1.5 lbs	4.5 / 6.5 lbs
Axial Misalignment		.010"
Radial Misalignment		± .010"

### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +165°C
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

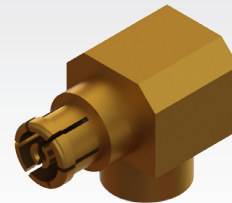
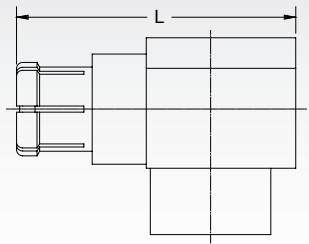
Note: Specifications, dimensions and images are typical for the series and may vary by part number

## Female Cable Connector



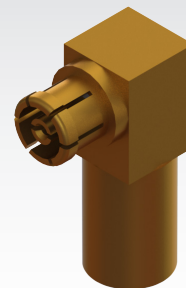
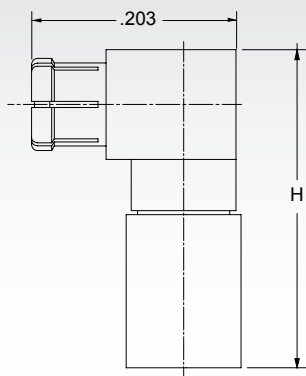
Cable	P/N	L
.047	3221-40007	.260"
.085	3221-40006	.285"

## Female Cable Connector, R/A



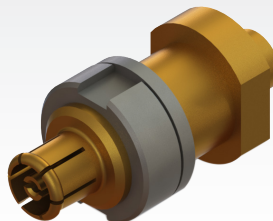
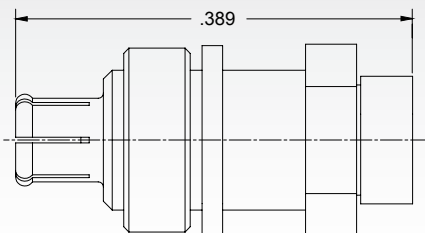
Cable	P/N	L
.047	3269-4001	.207"
.085	3222-40002	.274"

## Female Cable Connector, Swept R/A



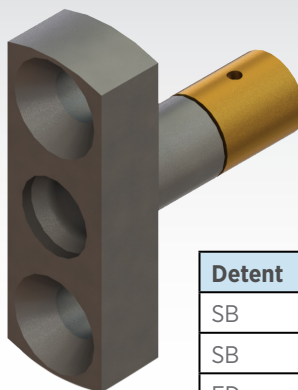
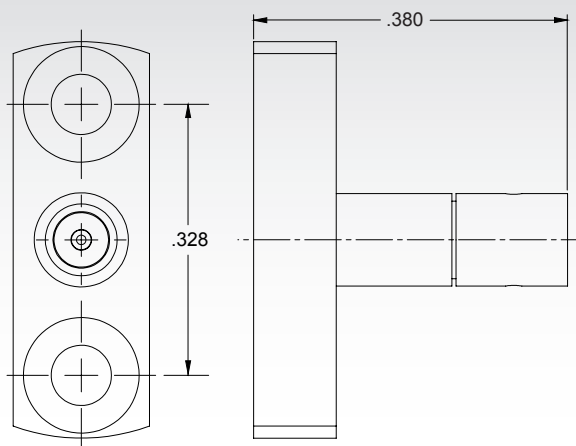
Cable	P/N	H
.047	3222-40006	.221"
.085	3222-40005	.316"

## Female Bulkhead Cable Connector



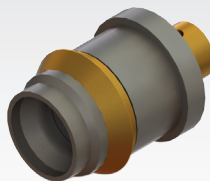
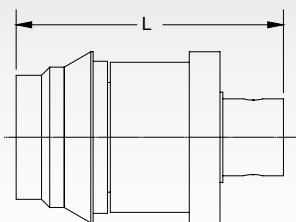
Cable	P/N
.047	3221-40011
.085	3221-4000

## Male Flange Mount Cable Connector, 2 Hole



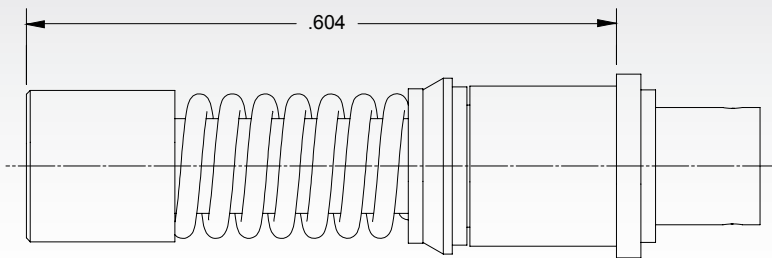
Detent	Cable	P/N
SB	.047	SF3211-60024
SB	.085	SF3211-6000
FD	.047	SF3211-60025
FD	.085	SF3211-60013

## Male Snap-In Cable Connector



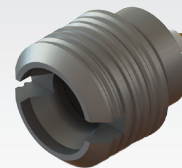
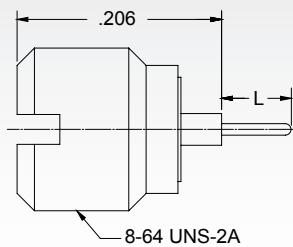
Detent	Cable	P/N	L
SB	.047	3211-40003	.278"
SB	.085	3211-40005	.302"
FD	.047	3202-6000	.278"
FD	.085	3211-40004	.302"

## Male Snap-In Float Mount Cable Connector



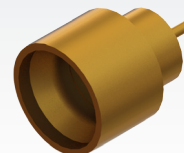
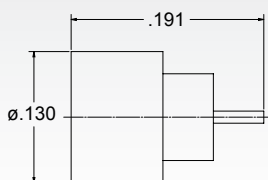
Cable	P/N
.047	SF3202-6001

## Male Thread-In Connector (.012")



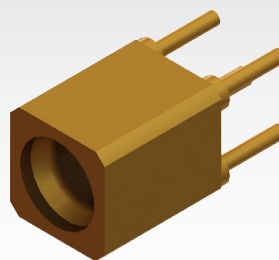
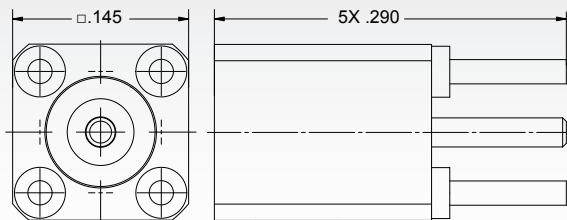
Detent	P/N	L
SB	SF3211-60011	.015"
SB	SF3211-60012	.065"
FD	SF3211-60009	.015"
FD	SF3211-60010	.065"

## Male Solder-In Hermetic Connector (.012")



Detent	P/N
SB	3211-60028
FD	3211-60027

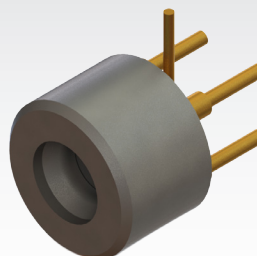
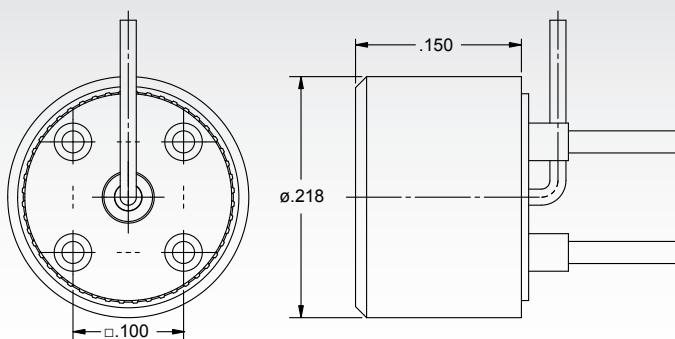
## Male PCB Thru-Hole Connector



Detent	P/N
SB	3287-4101
FD	3287-4100

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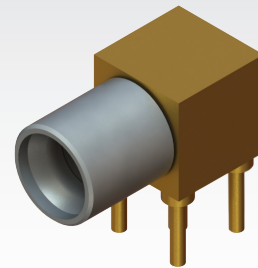
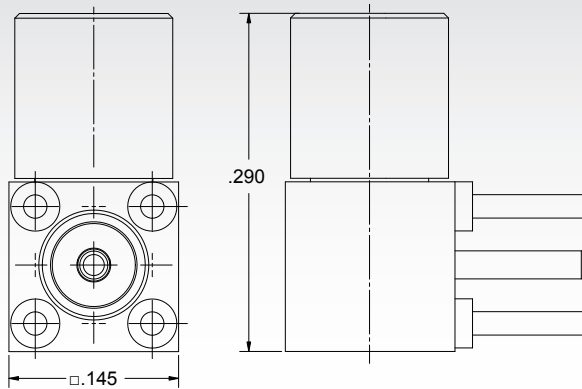
## Male PCB Thru-Hole Connector, R/A



Detent	P/N
SB	SF3211-60034
FD	SF3211-60033

Contact SV directly to access our database of recommended PCB layouts

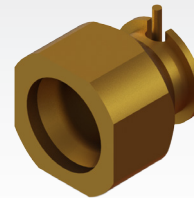
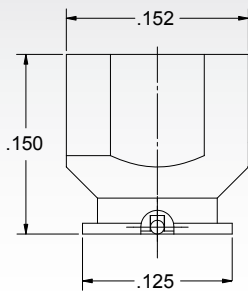
## Male PCB Thru-Hole Connector, R/A



Detent	P/N
SB	3212-40003
FD	3212-40002

Contact SV directly to access our database of recommended PCB layouts

## Male Surface Mount Connector, R/A

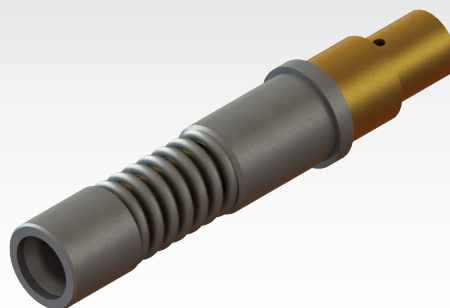
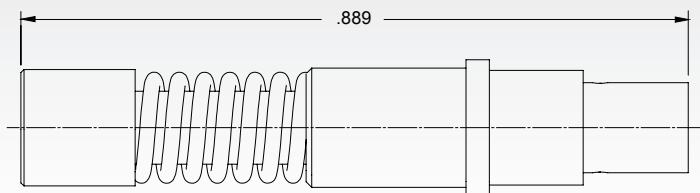


Detent	P/N
SB	3287-6101
FD	3287-6100

Contact SV directly to access our database of recommended PCB layouts

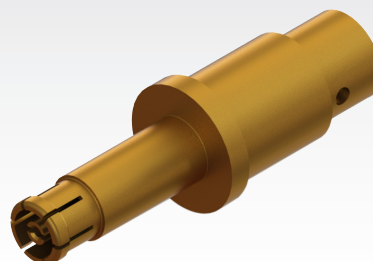
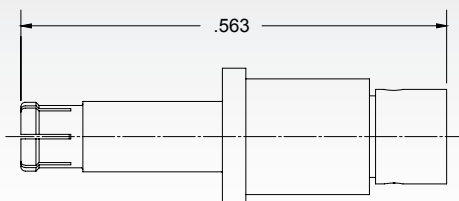
# SMPM SERIES

## Socket D38999 Cable Contact (Size 12)



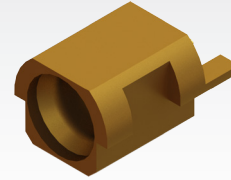
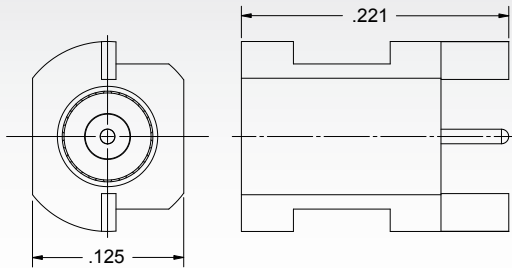
Cable	P/N
.085	SF3211-6004

## Pin D38999 Cable Contact (Size 12)



Cable	P/N
.085	3221-4002

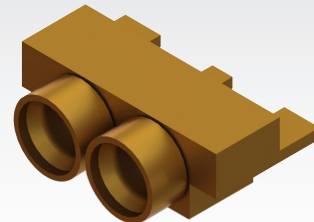
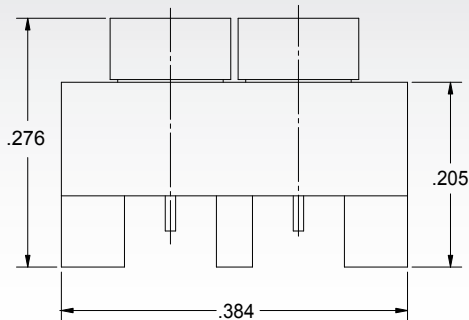
## Male Edge Launch Connector



Detent	P/N
SB	3211-60035
FD	3285-6001

Contact SV directly to access our database of recommended PCB layouts

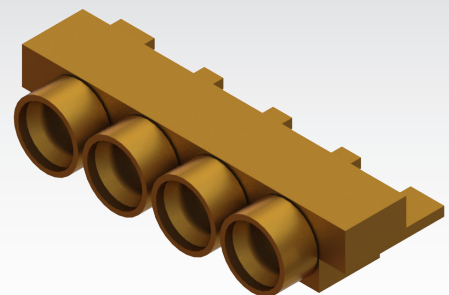
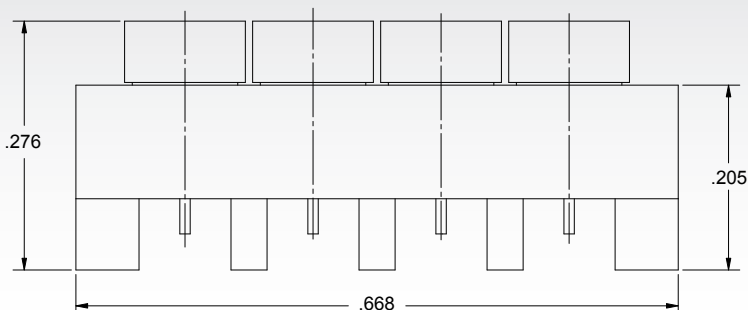
## Male Edge Launch Connector, 2 Port



Detent	P/N
SB	3211-60086
FD	3211-60087

Contact SV directly to access our database of recommended PCB layouts

## Male Edge Launch Connector, 4 Port

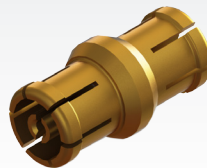
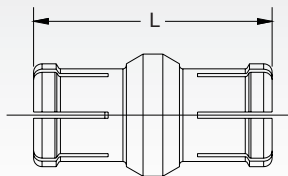


Detent	P/N
SB	9311-60015
FD	9311-60039

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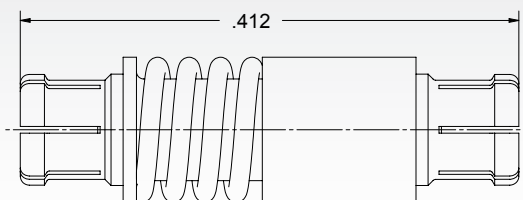
# SMPM SERIES

## Female to Female Bullet



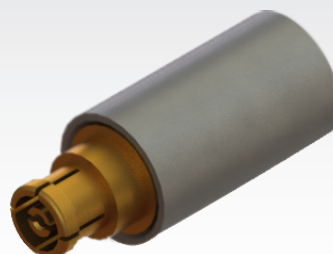
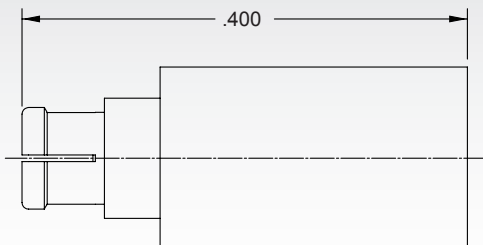
P/N	L
3290-4002	.211"
3290-4003	.327"

## Female to Female Bullet, Spring Loaded



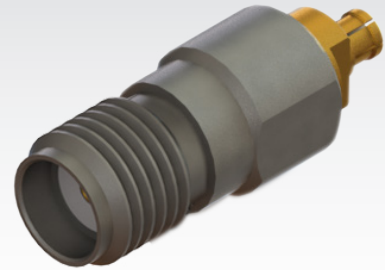
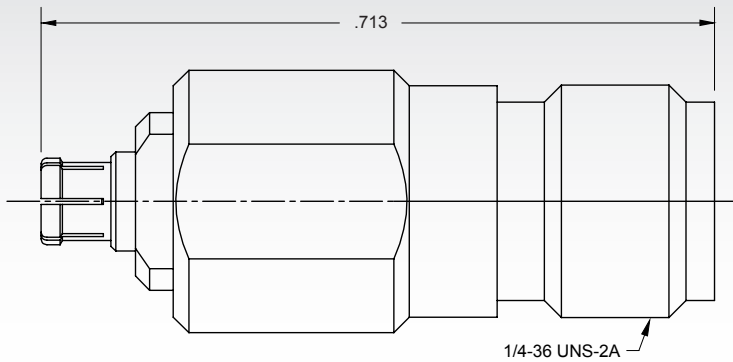
P/N
1132-4006

## SMPM Male to Female Adapter



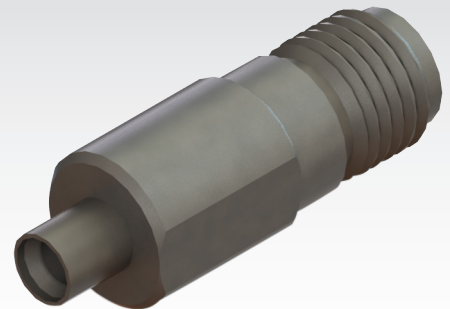
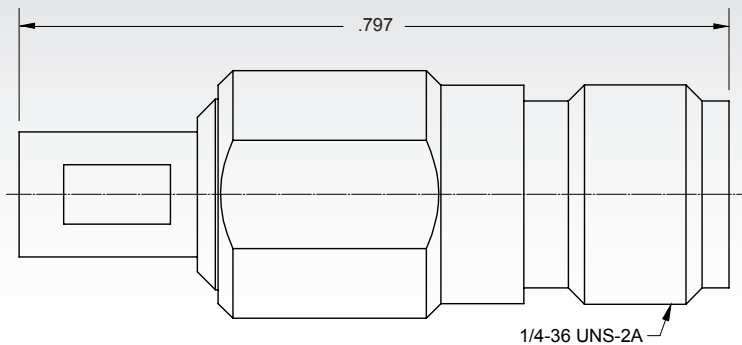
Detent	P/N
SB	1132-4005

## SMPM Female to SMA Thread-In Adapter



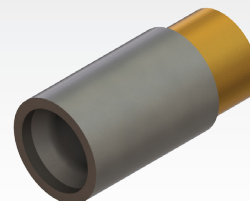
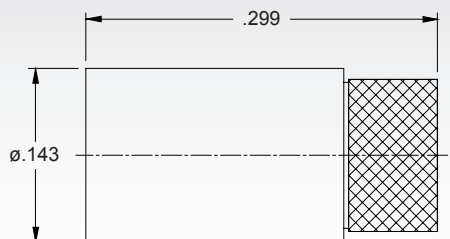
P/N	Desc.
1132-6025	SMA Female
1132-4003	SMA Male

## SMPM Male to SMA Female Adapter



Detent	P/N
SB	SF1132-6026
FD	SF1132-6027

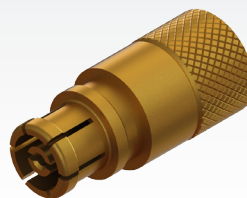
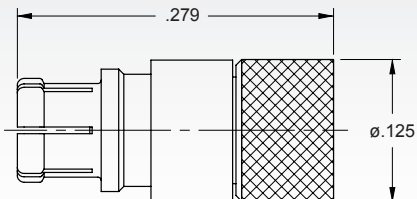
## Male Termination



Detent	P/N
SB	8032-6002
FD	8032-6001

# SMPM SERIES

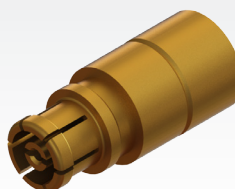
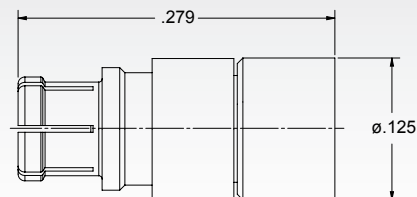
## Female Termination



P/N

8032-4003

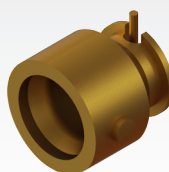
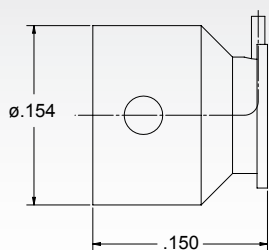
## Female Short



P/N

8032-4007

## Male QB Surface Mount Connector, R/A

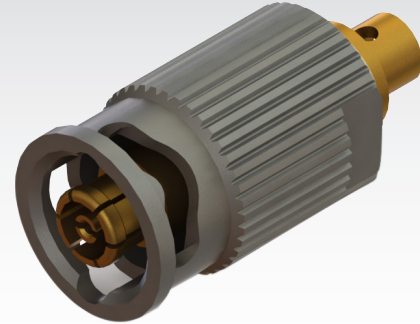
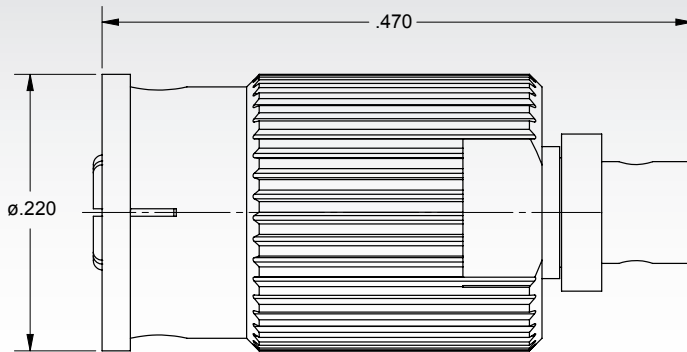


P/N

3211-60112

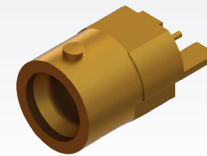
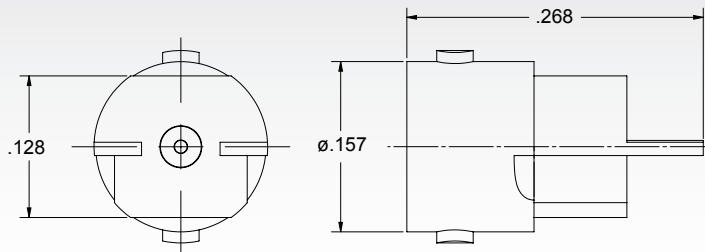
Contact SV directly to access our database of recommended PCB layouts

## Female QB Cable Connector



Cable	P/N
.047	3221-60003
.085	3221-60004

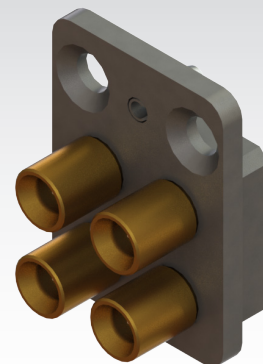
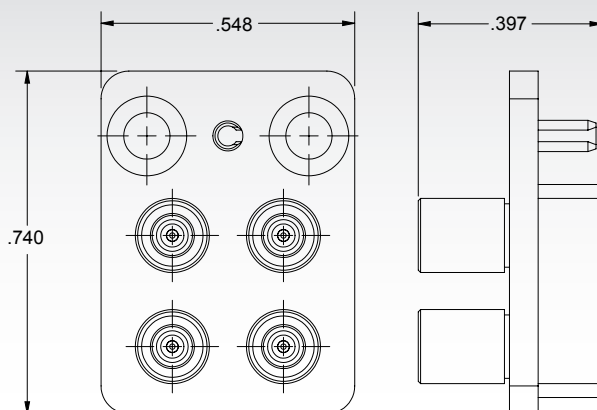
## Male QB Edge Launch Connector



Contact SV directly to access our database of recommended PCB layouts

P/N
3211-60118

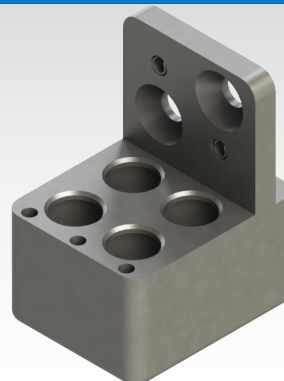
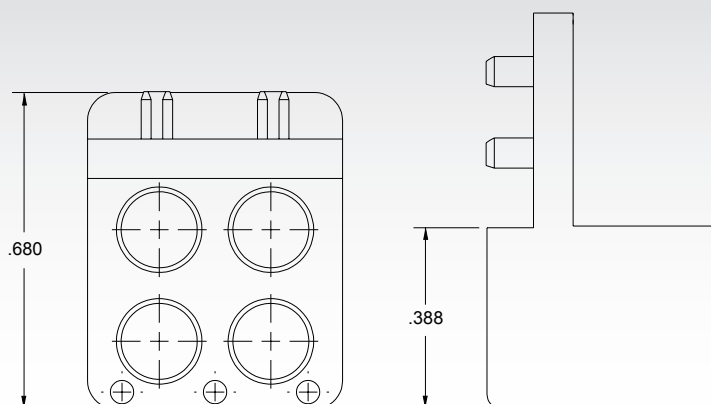
## Motherboard VITA Connector



P/N	Desc.
SF1132-6037	4 Position, 67.1
SF1132-6036	8 Position, 67.2

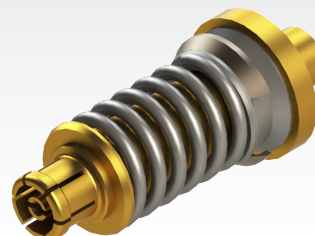
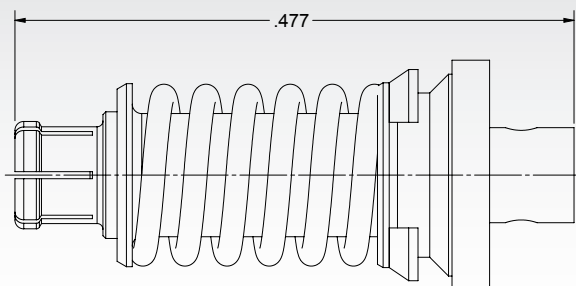
# SMPM SERIES

## Daughtercard VITA Connector



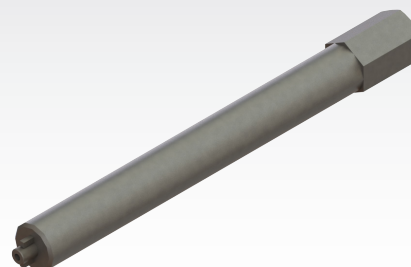
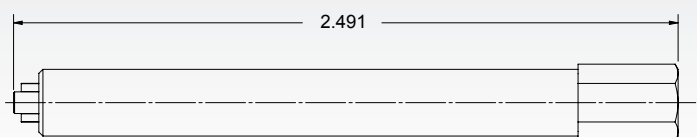
P/N	Desc.
SF9321-60015	4 Position, 67.1
SF9321-60013	8 Position, 67.2

## Female VITA Snap-In Float Mount Cable Connector



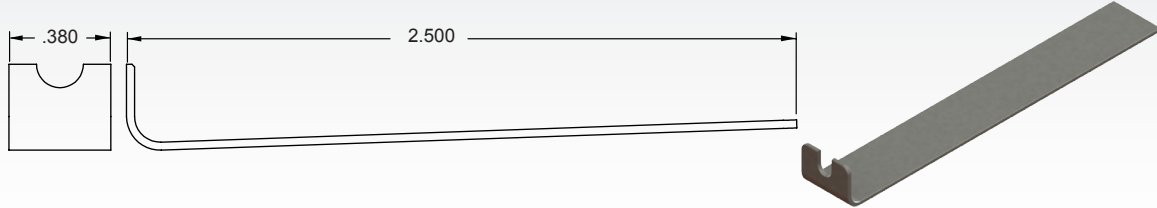
Cable	P/N
.047	3221-40019
.085	3221-40022

## Male Shroud Driver



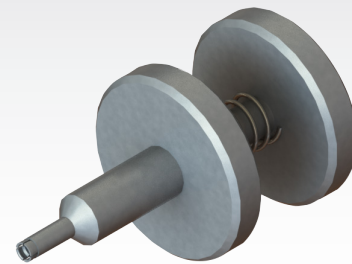
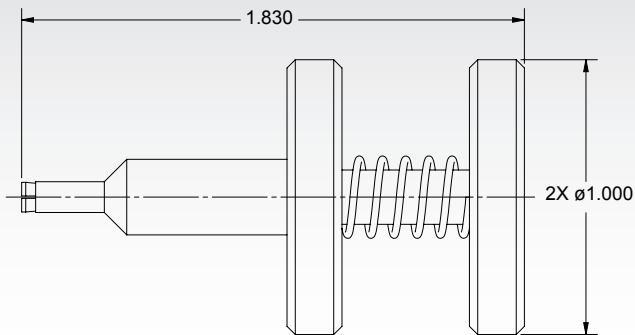
Detent	P/N
FD	500-32-008
CM	500-32-009

## Female Cable Removal Tool



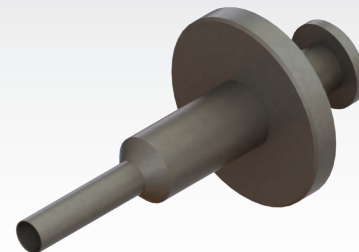
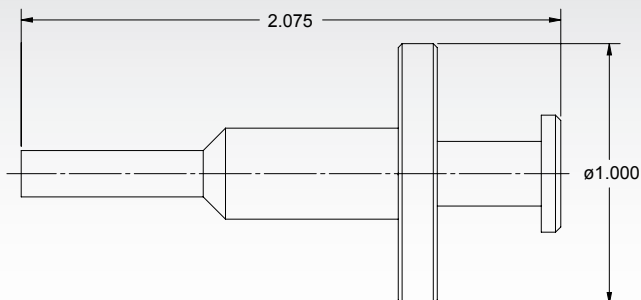
P/N
500-32-010

## Female Bullet Removal Tool



P/N
500-32-007

## Male Panel Removal Tool



P/N
500-32-004

# SMPS SERIES

## SMPS Interface at a Glance

SV Microwave offers a complete line of SMPS connectors. The SMPS connector utilizes the same great features of the SMP and SMPM connector series in an even smaller package. The SMPS series is ideal in applications where density is of the utmost importance.

### Electrical Specifications

Impedance	50Ω
Frequency	100 GHz
VSWR	1.10:1 to 26.5 GHz typ.; 1.25:1 to 65 GHz typ.
Insertion Loss	.07 √ f
Shielding Effectiveness	≥ -80 dB typ.
Dielectric Withstanding Voltage	250 VRMS

### Mechanical Specifications

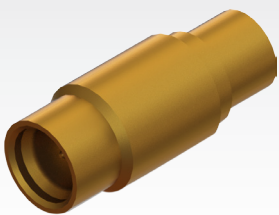
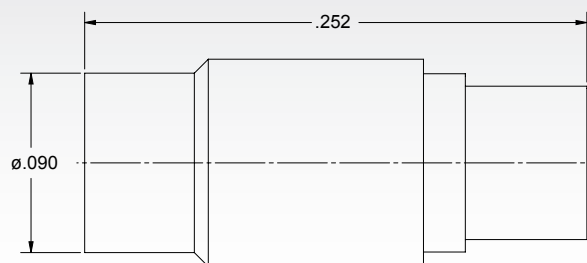
	SB	FD
Mating Cycles	500	100
Force to Engage/Disengage	1.2 / 1.0 lbs	2.5 / 4.5 lbs
Axial Misalignment		.010"
Radial Misalignment		± .010"

### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20 Gs
Shock	MIL-STD-202, Method 213, Condition I, 100 Gs
Thermal Shock	MIL-STD-202, Method 107. Cond. B, -65°C to +165°C
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70k Ft.

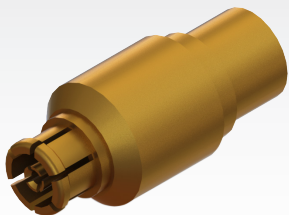
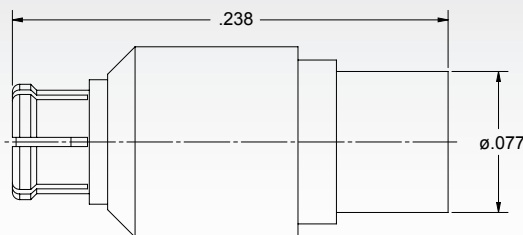
Note: Specifications, dimensions and images are typical for the series and may vary by part number

Male Cable Connector



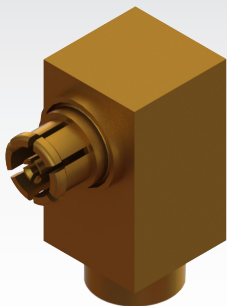
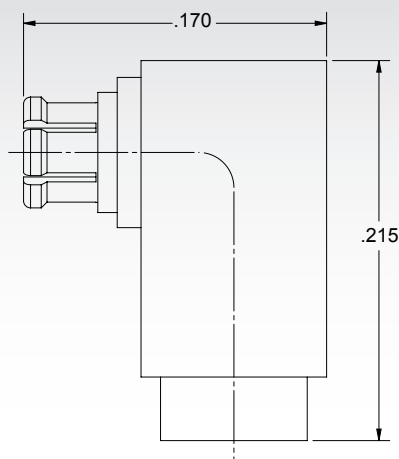
Detent	Cable	P/N
SB	.047	3811-40002
FD	.047	3811-40001

Female Cable Connector



Cable	P/N
.047	3821-40001

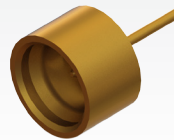
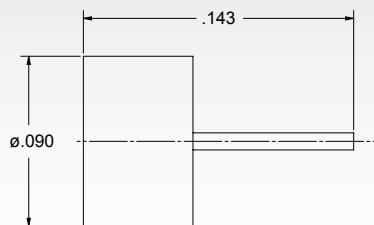
Female Cable Connector, Swept R/A



Cable	P/N
.047	3822-40001

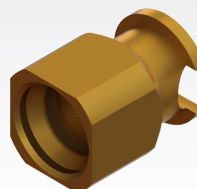
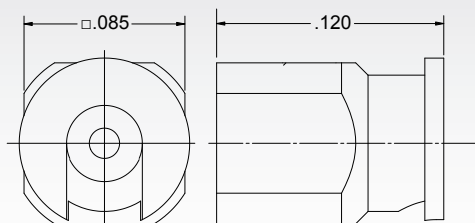
# SMPS SERIES

## Male Solder-In Connector (.009")



Detent	P/N
SB	3811-40005
FD	3811-40006

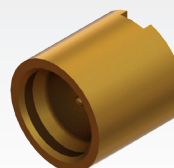
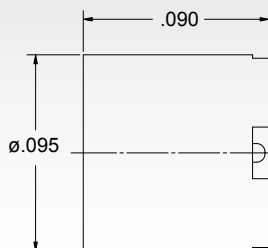
## Male Surface Mount Connector



Detent	P/N
SB	3811-40023
FD	3811-40022

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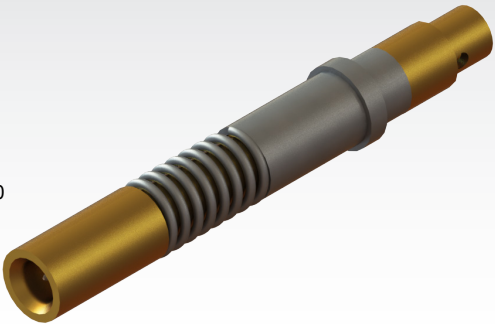
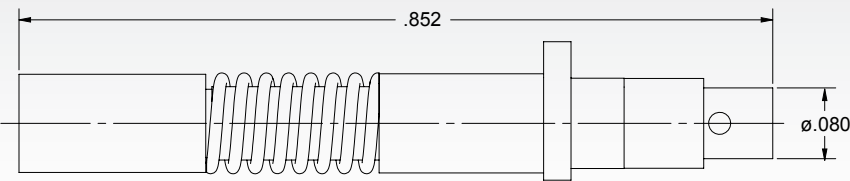
## Male Surface Mount Hermetic Connector (.009")



Detent	P/N
SB	3811-60005
FD	3811-60006

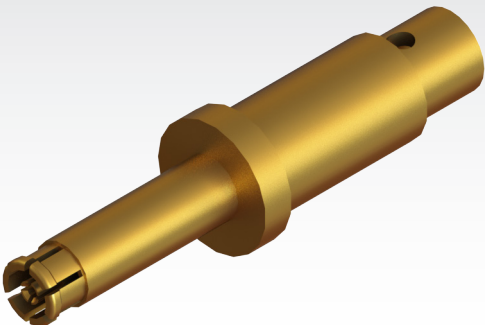
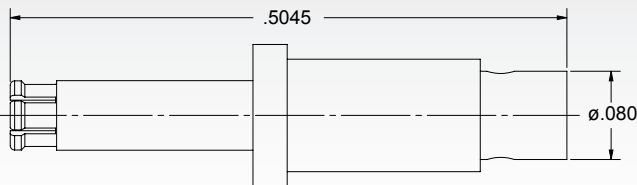
Contact SV directly to access our database of recommended PCB layouts

Socket D38999 Cable Contact (Size 16)



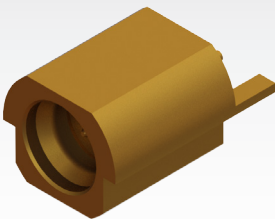
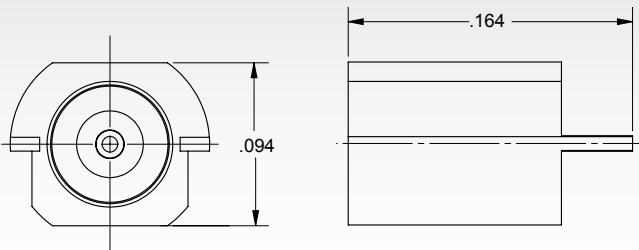
Cable	P/N
.047	SF9911-60001

Pin D38999 Cable Contact (Size 16)



Cable	P/N
.047	9921-40001

Male Edge Launch Connector

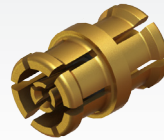
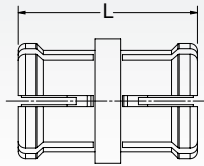


Detent	P/N
SB	3811-40004
FD	3811-40003

Contact SV directly to access our database of recommended PCB layouts

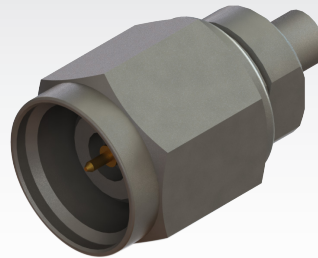
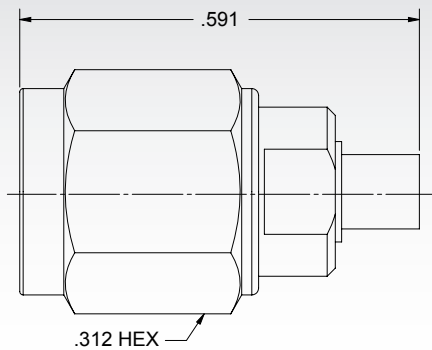
# SMPS SERIES

## Female to Female Bullet



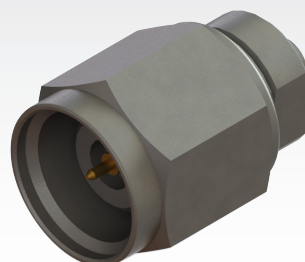
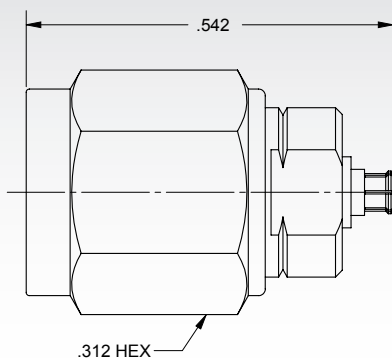
P/N	L
1138-4001	.098"
1138-4002	.118"
1138-4003	.134"
1138-4004	.188"

## SMPS Male to 2.4mm Male Adapter



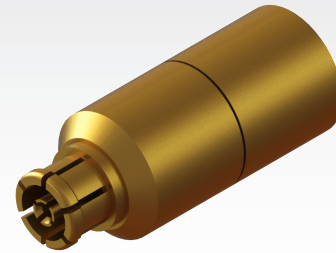
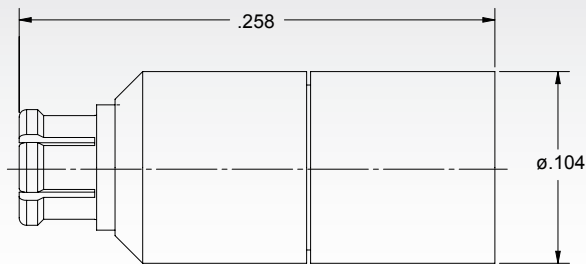
Detent	P/N
SB	SF1116-6023
FD	SF1116-6024

## SMPS Female to 2.4mm Male Adapter



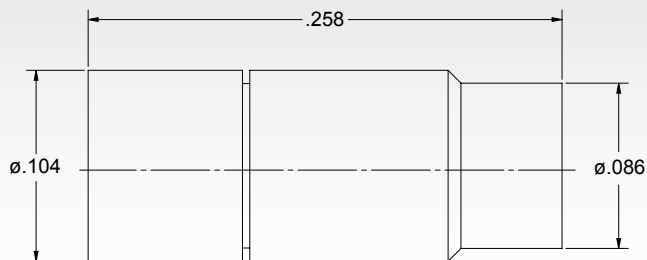
P/N
SF1116-6025

## Female Termination



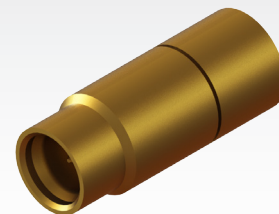
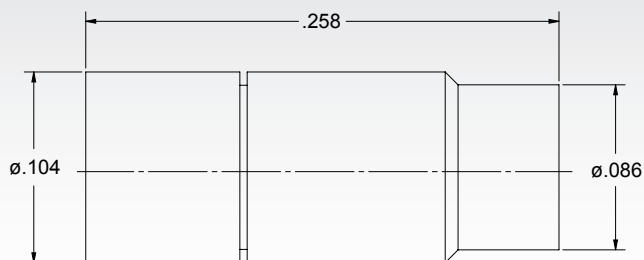
P/N
8038-4001

## Male Termination



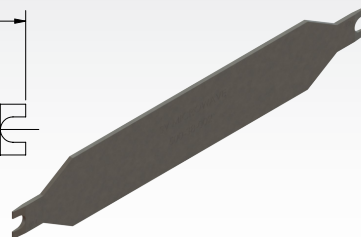
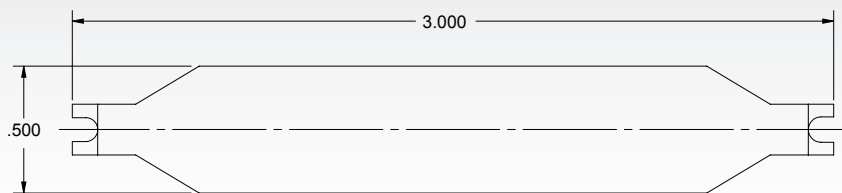
Detent	P/N
SB	8038-6003
FD	8038-6004

## Male Short



Detent	P/N
SB	8038-6005
FD	8038-6006

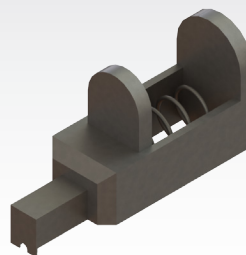
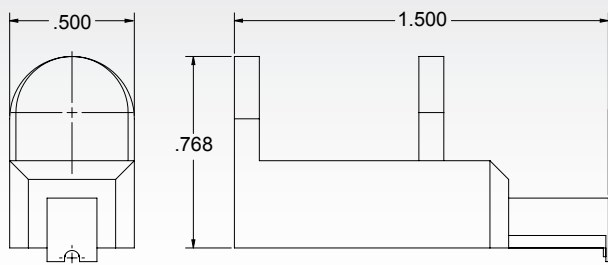
## Female Cable Removal Tool



P/N

500-38-002

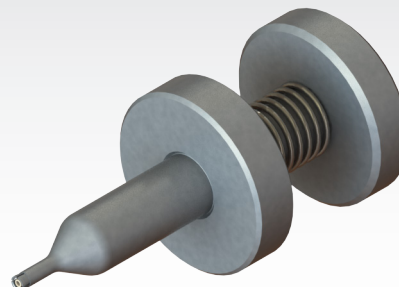
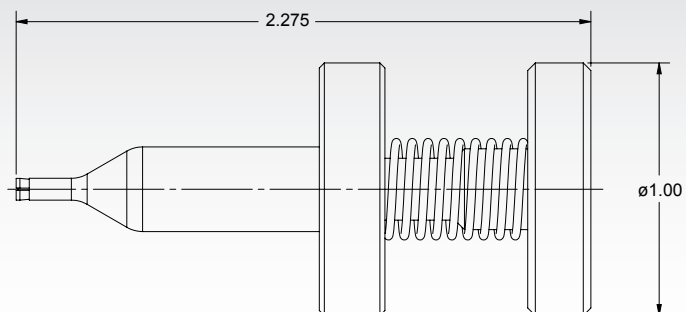
## Female Removal Tool



P/N

500-38-003

## Female Bullet Removal Tool



P/N

500-38-004



## TNC / PTNC Interfaces at a Glance

Developed in the late 1950's, the TNC stands for Threaded Neill Concelman and is named after Amphenol engineer Carl Concelman. Designed as a threaded version of the BNC, the TNC series features screw threads for mating. TNC are miniature, threaded weatherproof units with a constant impedance of 50 Ohms and operate at DC to 11 GHz. As a ruggedized version of the BNC, the TNC features a threaded coupling that offers extra mating stability. TNC connectors are used in many applications including Mil-Aero, instrumentation, and cable assemblies.

### Electrical Specifications

	TNC	PTNC
Frequency	11 GHz	18 GHz
VSWR	1.3:1 at 11 GHz	1.2:1 at 18 GHz
Impedance		50Ω
Insertion Loss		.06 √ f
Shielding Effectiveness		≥ -90 dB
Dielectric Withstanding Voltage		1500 VRMS

### Mechanical Specifications

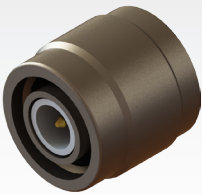
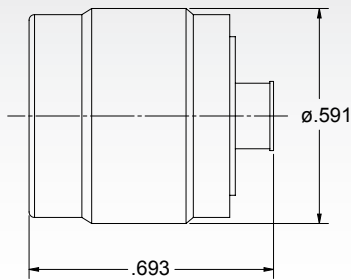
Mating Cycles	500
Mating Torque	12 - 15 in - lb

### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D
Shock	MIL-STD-202, Method 213, Condition I
Thermal Shock	MIL-STD-202, Method 107
Moisture Resistance	MIL-STD-202, Method 106, Less Step 7B

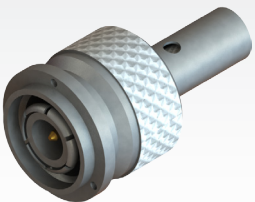
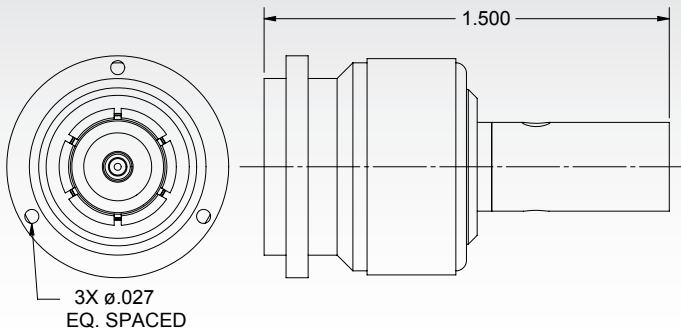
Note: Specifications, dimensions and images are typical for the series and may vary by part number

Male Cable Connector



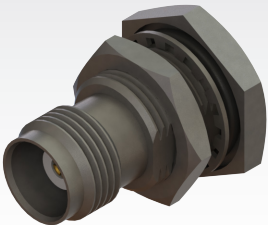
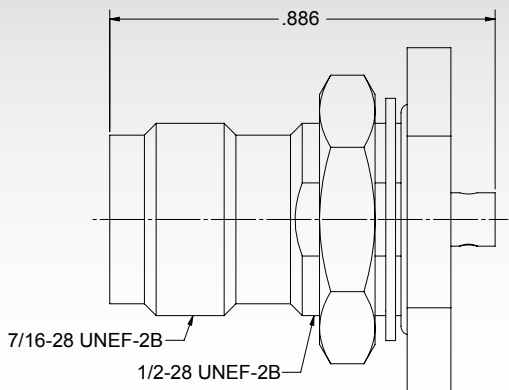
Cable	P/N
.085	4011-00043
.141	4011-00044

Male Cable Connector, Lockwire Holes



Cable	P/N
RG-58	M39012/26B0006
RG-303	M39012/26B0015

Female Bulkhead Cable Connector

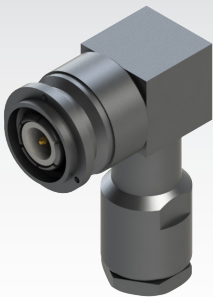
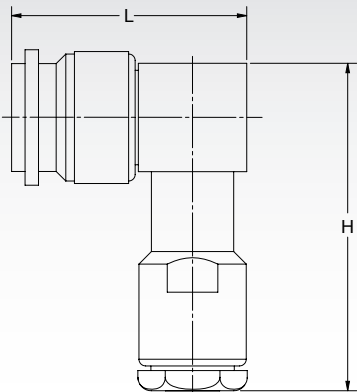


Cable	P/N
.085	4021-00064
.141	4021-00065

TNC SERIES

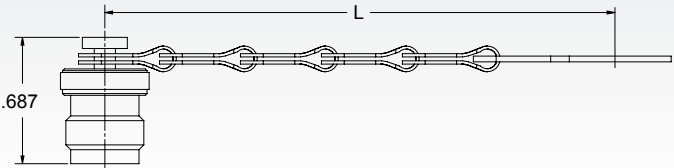
TNC SERIES

Male Cable Connector, R/A



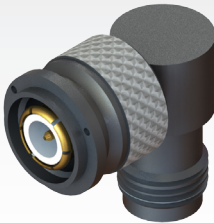
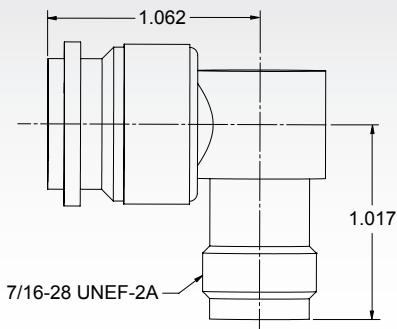
Cable	P/N	L	H
RG-58	M39012/30-0101	1.110"	1.600"
RG-58	M39012/30B0005	1.218"	2.000"

Female Dust Cap



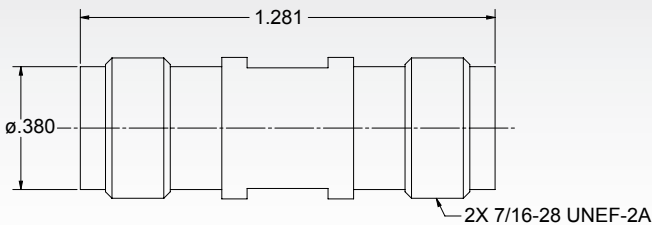
P/N	L	Desc.
M39012/25-0019	3.250"	Safety chain
M39012/25-0118	4.000"	Wire rope

TNC Male to Female Adapter, R/A



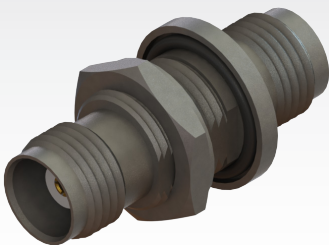
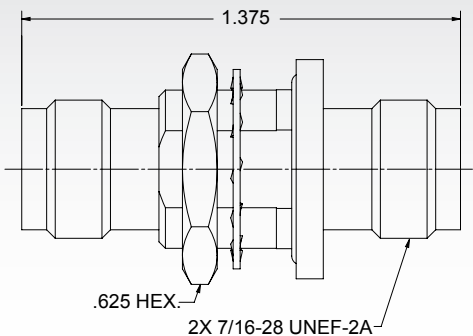
P/N
M55339/32-00001

TNC Female to Female Adapter



P/N
M55339/33-00001

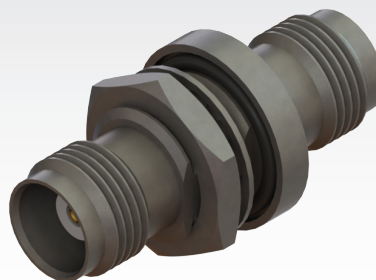
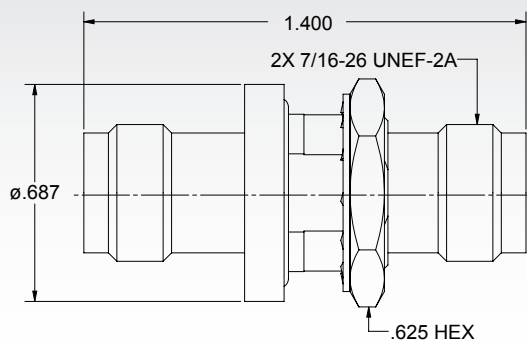
TNC Female to Female Bulkhead Hermetic Adapter



P/N
M55339/34-30001

# TNC SERIES

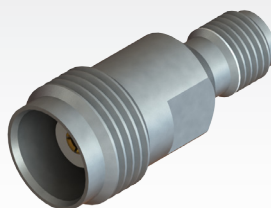
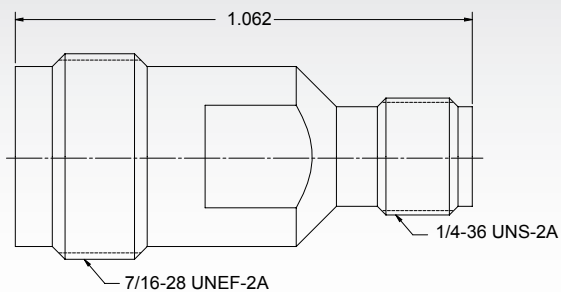
## TNC Female to Female Bulkhead Adapter



P/N

SF4532-6009

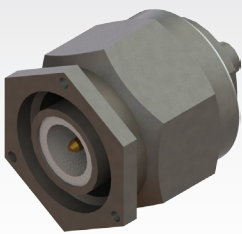
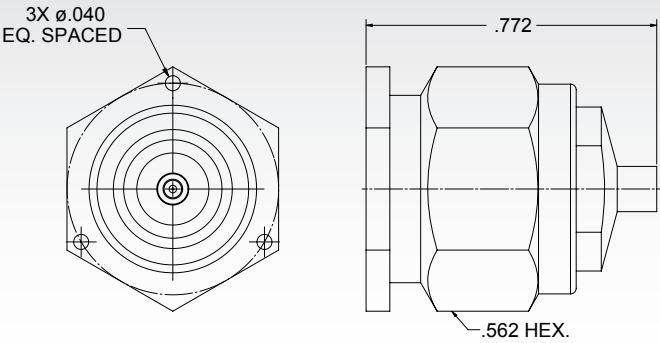
## TNC Female to SMA Female Adapter



P/N

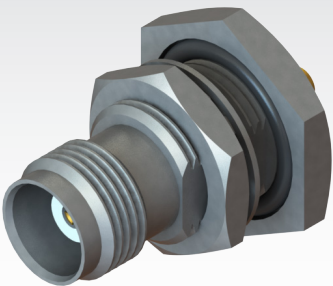
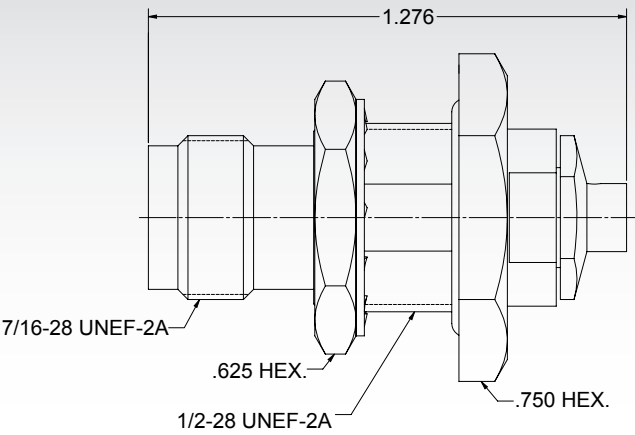
M55339/41-30001

Male Cable Connector, Lockwire Holes



Cable	P/N
.085	SF4501-6023
.141	SF4501-6039

Female Bulkhead Cable Connector



Cable	P/N
.085	SF4546-6011
.141	SF4546-6010

# TYPE N / PN SERIES

## Type N / PN Interfaces at a Glance

Named after Paul Neill of Bell Labs after being developed in the 1940's, the Type N offered the first true microwave performance. The Type N connector was developed to satisfy the need for a durable, weatherproof, medium-size RF connector with consistent performance through 11 GHz.

### Electrical Specifications

	Type N	PN
Frequency	12.4 GHz	18.0 GHz
Impedance		50Ω
VSWR		1.3:1
Insertion Loss		.07 √ f
Shielding Effectiveness		≥ -90 dB
Dielectric Withstanding Voltage		3000 VRMS

### Mechanical Specifications

Mating Cycles	500
Mating Torque	12 - 15 in - lbs

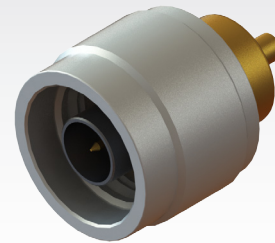
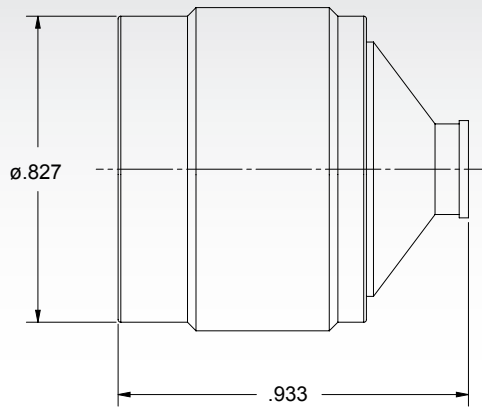
### Environmental Specifications

Temperature Rating	-65°C to +165°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D
Shock	MIL-STD-202, Method 213, Condition I
Thermal Shock	MIL-STD-202, Method 107
Moisture Resistance	MIL-STD-202, Method 106, Less Step 7B

Note: Specifications, dimensions and images are typical for the series and may vary by part number

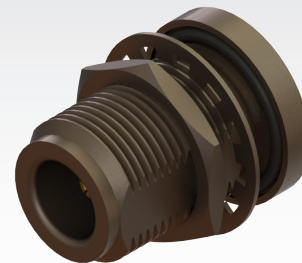
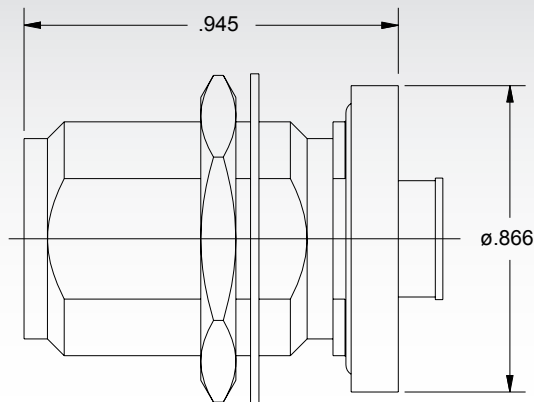
# TYPE N SERIES

## Male Cable Connector



Cable	P/N
.085	5011-00034
.141	5011-00035

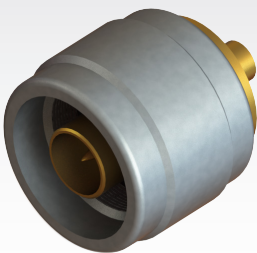
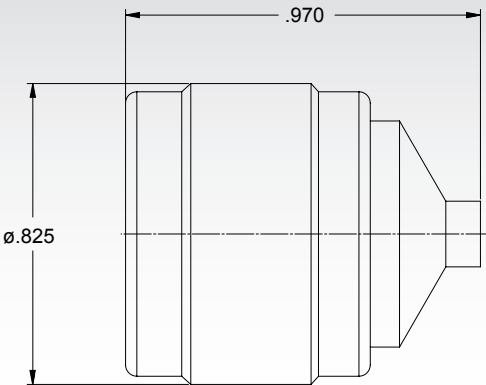
## Female Bulkhead Cable Connector



Cable	P/N
.085	5021-00026
.141	5021-00027

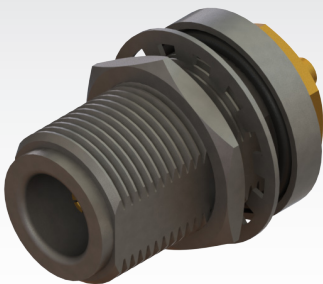
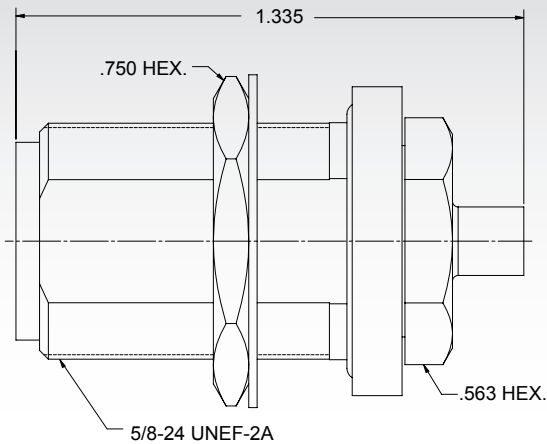
TYPE N SERIES

Male Cable Connector



Cable	P/N
.085	SF6511-60010
.141	SF6505-6003

Female Bulkhead Cable Connector



Cable	P/N
.085	SF6545-6017
.141	SF6545-6003



## SMP/SMPP/SMPS Applications

SMP/SMPP/SMPS series connectors are commonly used in a shroud-bullet-shroud configuration. This configuration is ideal for applications where mating cycles are high.

Typically one of the male shrouds will be smooth bore (or limited detent) and the other one will be full detent. This ensures that the bullet will remain mated to the full detent side when the system is disengaged.

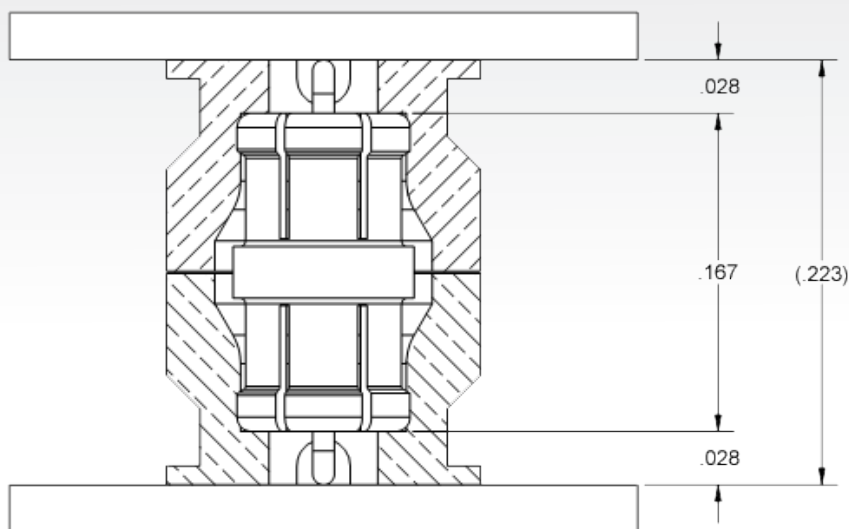


Figure 1: SMPP Shroud-Bullet-Shroud System

## SMP/SMPP/SMPS Applications

Another common technique is to make the male smooth bore shroud a 'Catchers Mitt'. The 'Catchers Mitt' interface style has an extra chamfer on the opening to help align the bullet during mating.

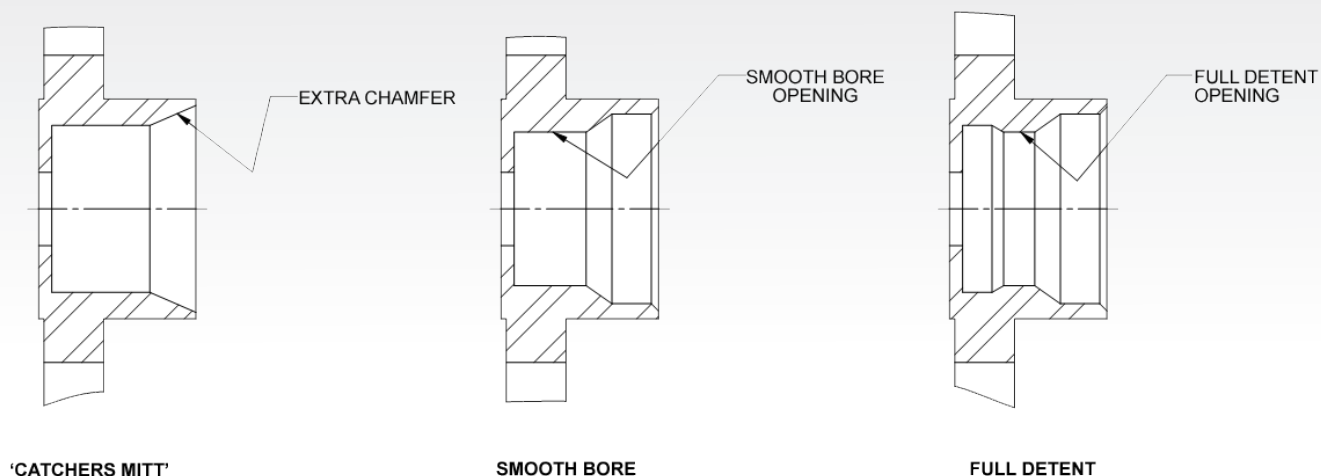


Figure 2: 'Catchers Mitt', Smooth Bore and Full Detent Interfaces

## SMP/SMPM/SMPS Applications

SMP/SMPM/SMPS connectors are designed to perform well, even under misaligned conditions. The image to below shows how SV Microwave defines radial and axial misalignment.

Radial and axial definitions are per mating interface. It is generally assumed that if a Full Detent interface is used on one side, the bullet will be contacting the reference plane of the shroud at some point under any condition.

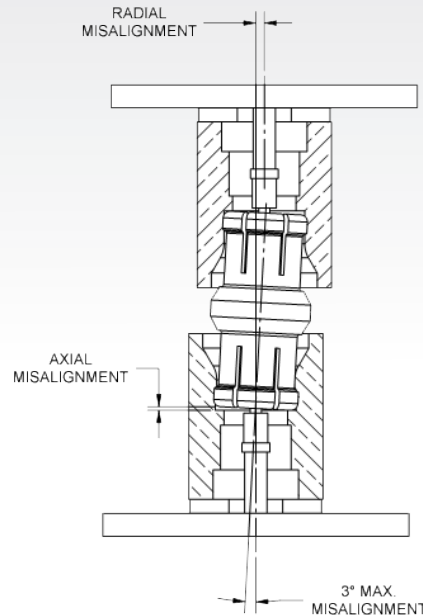


Figure 3: Radial and Axial Misalignment Definitions

## SMP/SMPM/SMPS Applications

SV Microwave also offers spring loaded female cable connectors and adapters. The spring force ensures that the reference planes will remain fully mated under axial misalignment. Spring loaded interfaces are ideal under conditions where vibration is expected or tolerance stack-up requires additional axial misalignment. SV Microwave can customize the spring length to provide the exact amount of axial tolerance needed for any application.

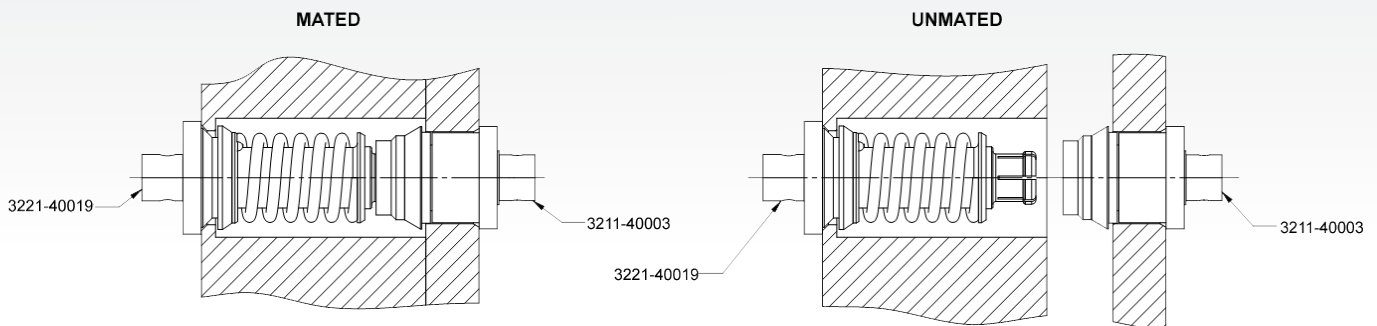
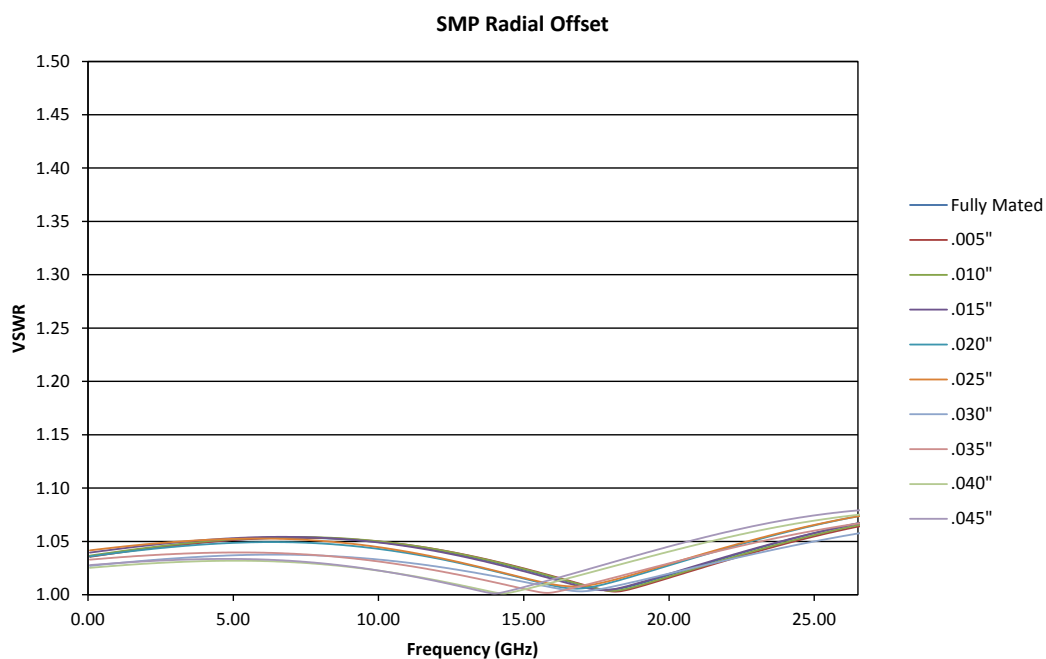
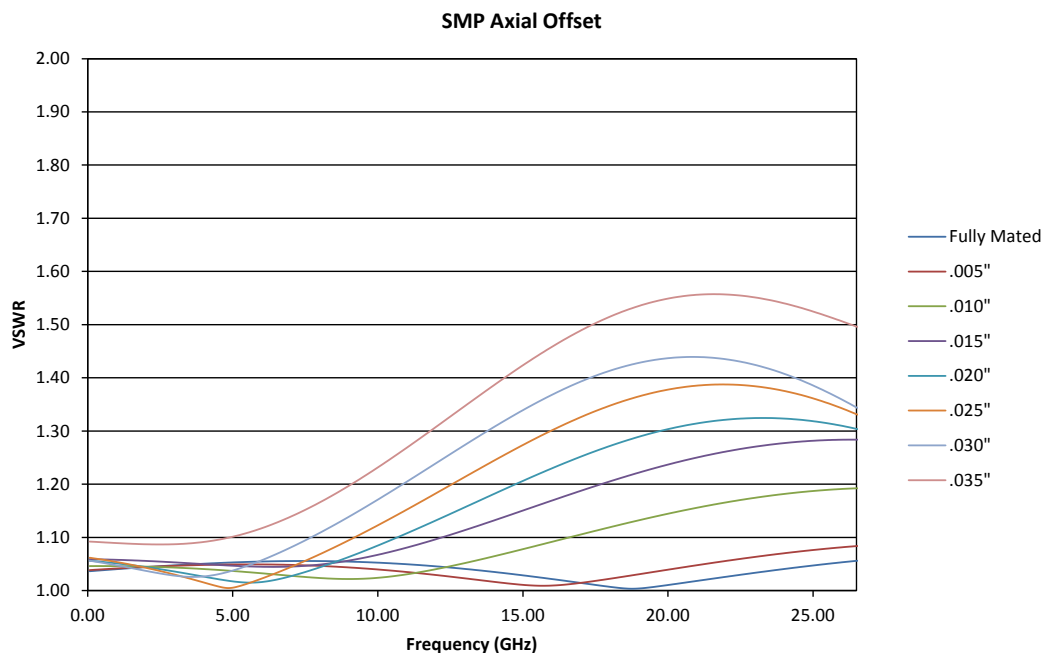


Figure 4: Snap-in Spring Loaded Female Cable Connector and Snap-in Male Cable Connector

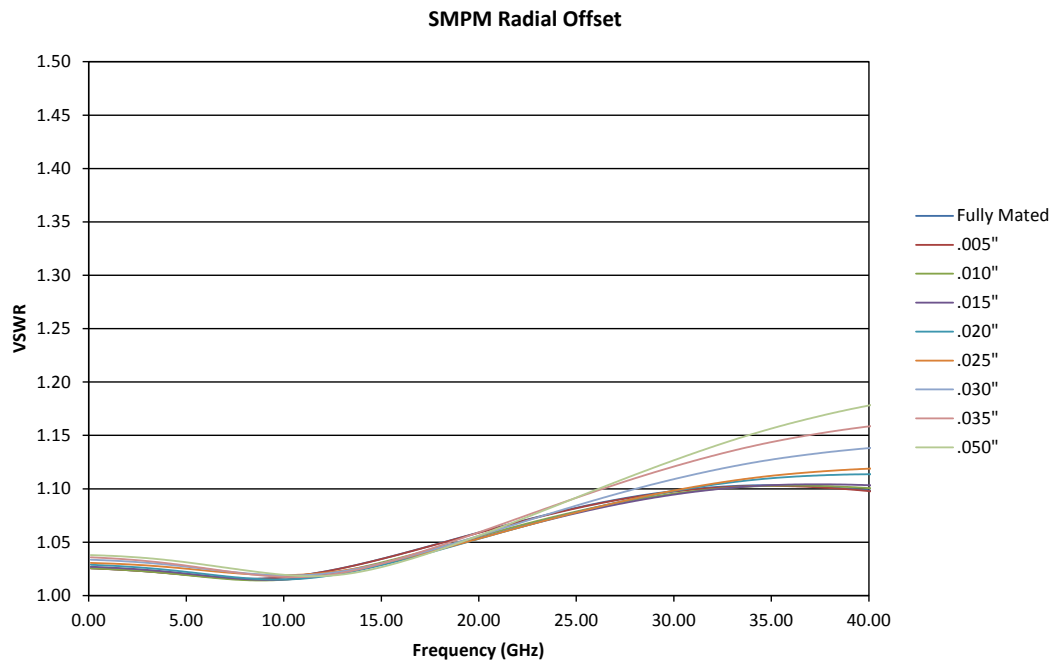
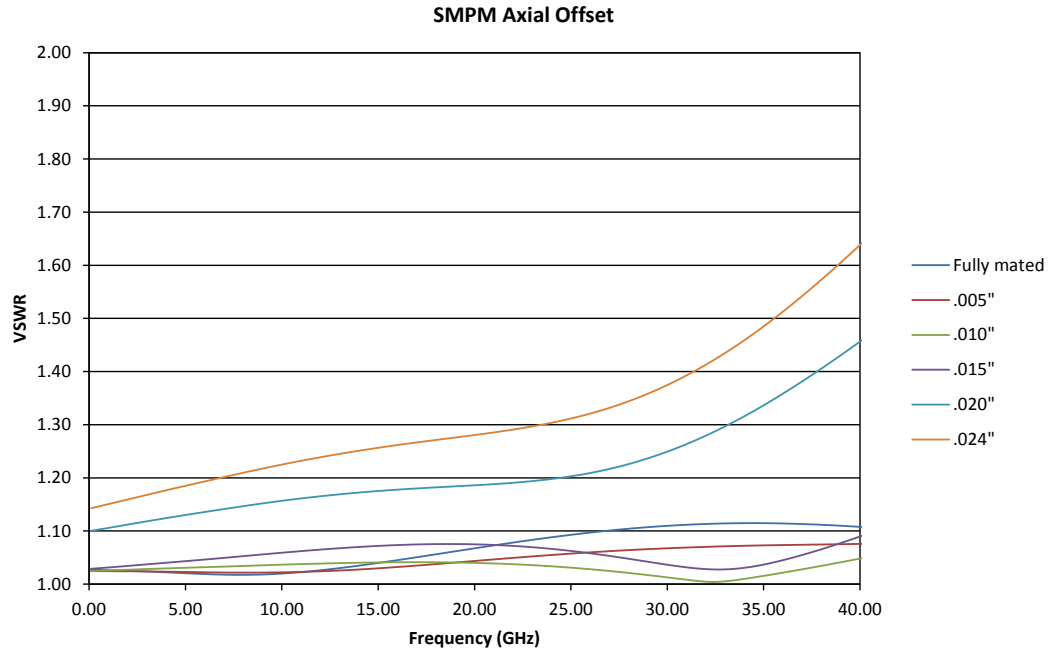
## SMP Misalignment Performance Measurements

Measurements taken with a .254" long bullet. 2.92mm to SMP male adapters were full detent on one side and smooth bore on the other side.



## SMPM Misalignment Performance Measurements

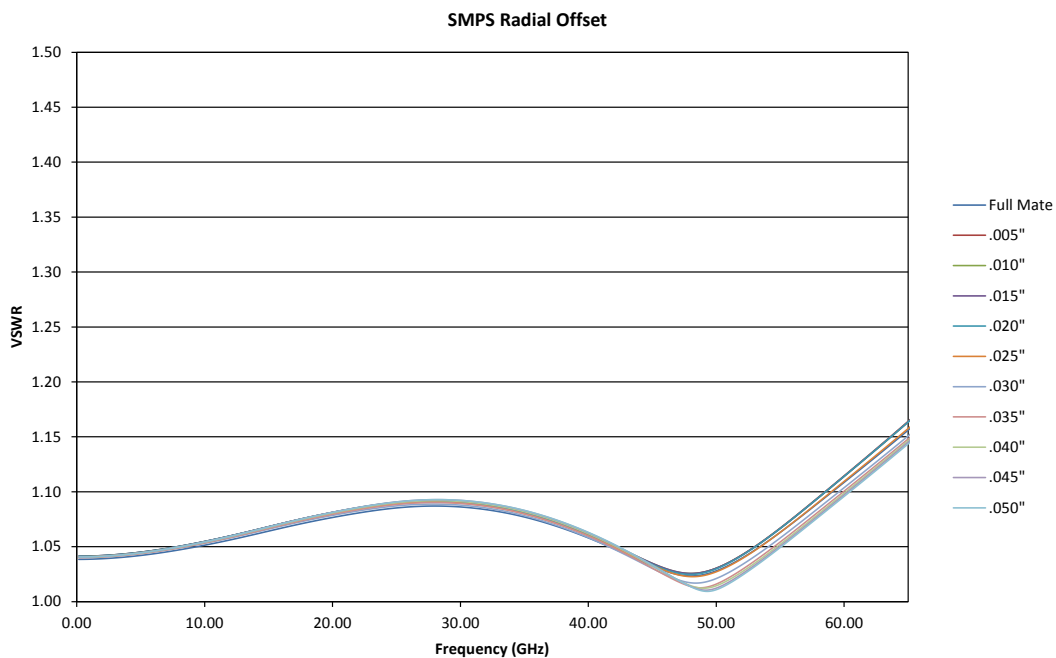
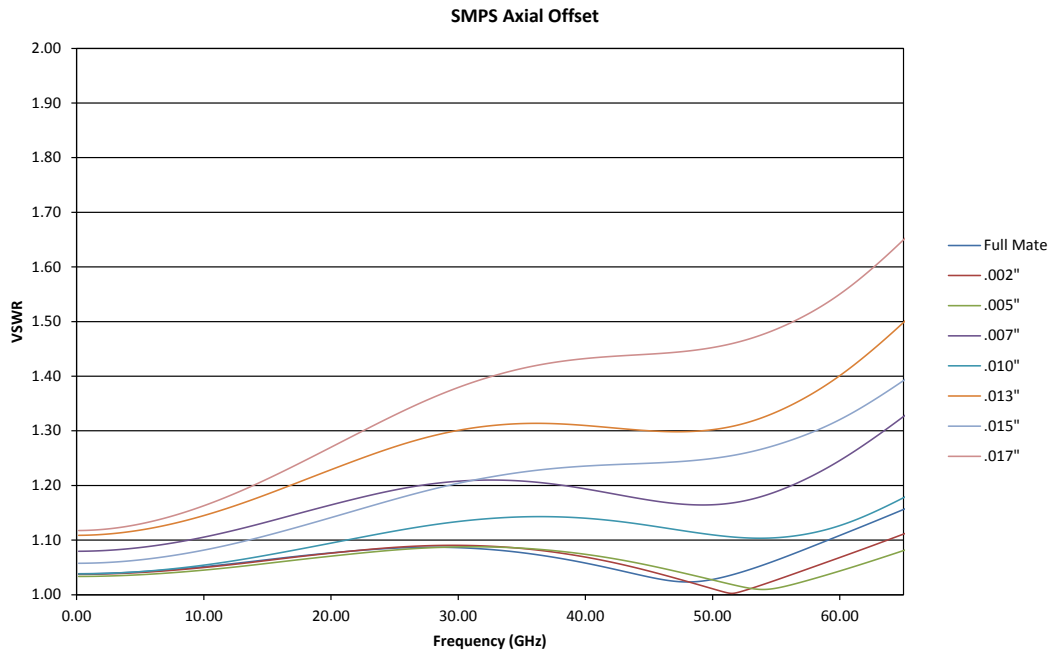
Measurements taken with a .211" long bullet. 2.4mm to SMPM male adapters were full detent on one side and smooth bore on the other side.



# APPENDIX - SMPS

## SMPS Misalignment Performance Measurements

Measurements taken with a .098" long bullet. 1.85mm to SMPS male adapters were full detent on both sides.





# APPENDIX - BOARD MOUNT

## Board Mount Connector Footprint Design Process - STEP 1: Select Connector

Select connector series and type based on performance requirements and packaging constraints

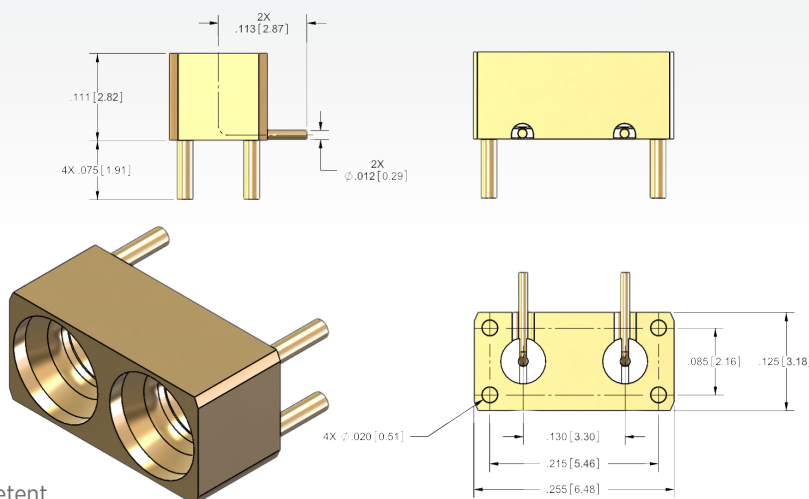
Series	Force to Engage (Max)			Max Freq.
	SB	LD	FD	
SMP	2.0 lbs	10 lbs	15 lbs	40 GHz
SMPM	4.0 lbs	N/A	8.0 lbs	65 GHz
SMPS	3.0 lbs	N/A	4.0 lbs	100 GHz

Series	Force to Disengage (Min)		
	SB	LD	FD
SMP	8 oz	2.0 lbs	5.0 lbs
SMPM	8 oz	N/A	3.0 lbs
SMPS	6 oz	N/A	2.0 lbs

Series	Mating Cycles (Min)		
	SB	LD	FD
SMP	1000	500	100
SMPM	500	N/A	100
SMPS	500	N/A	100

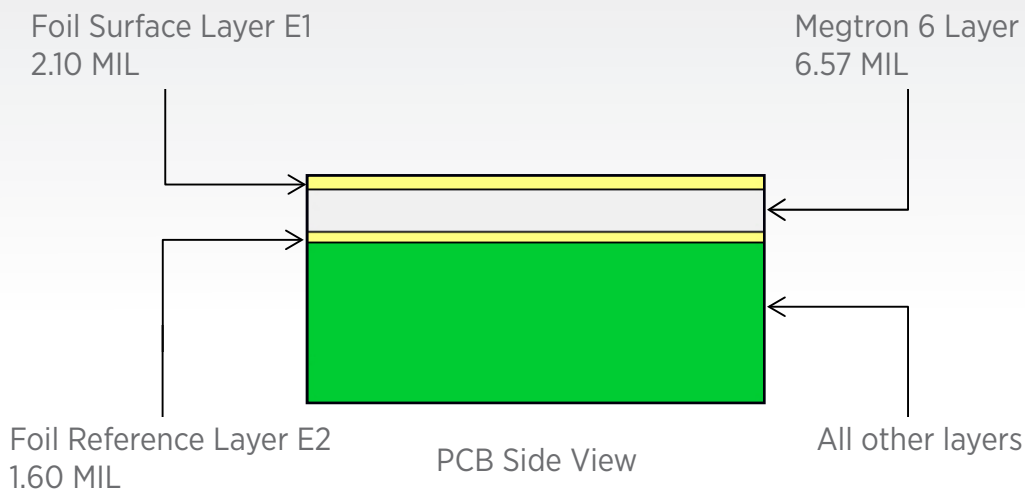
SB = Smooth Bore, LD = Limited Detent, FD = Full Detent

Example Connector Selection:



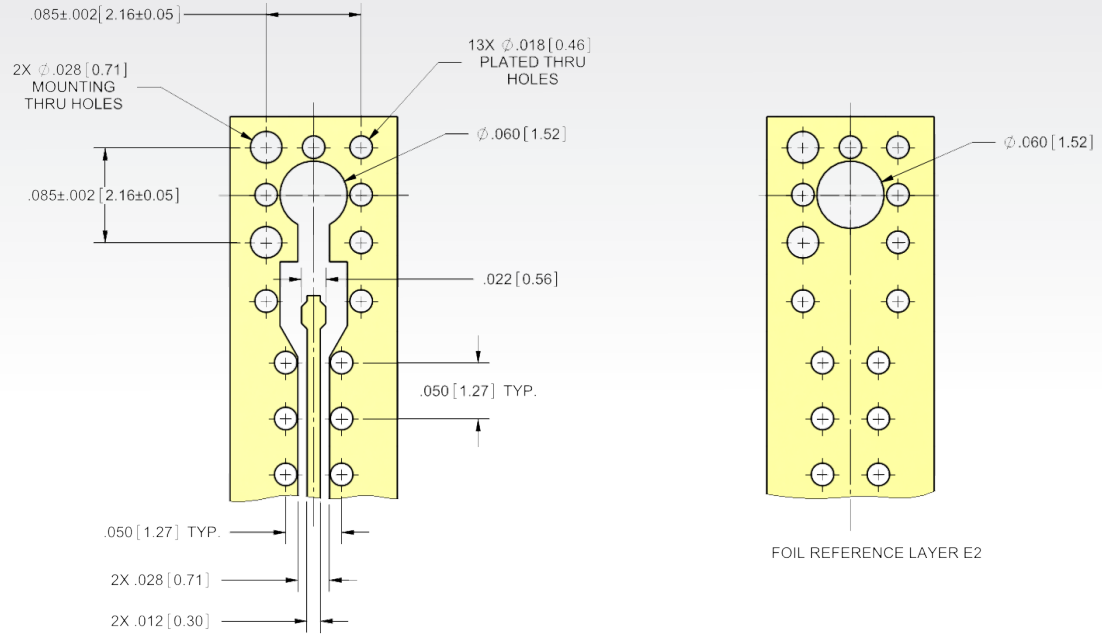
## STEP 2: PCB Definition

Provide PCB Characteristics to the SV Microwave Team to begin simulation and optimization (see pages 108 & 109 for more information)

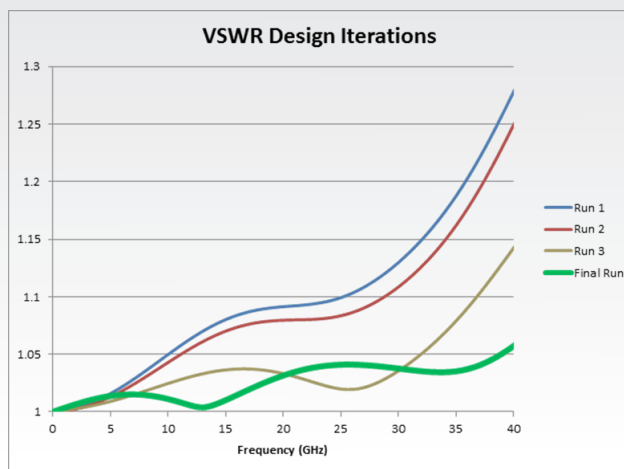


## STEP 3: Footprint Design

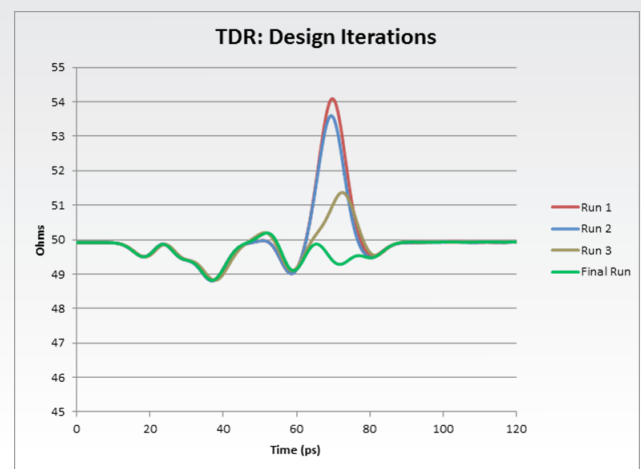
SV Engineering develops customized PCB launch footprint based on design parameters of connector and PCB Materials



## STEP 4: Simulation and Optimization



VSWR Improvement over connector launch with Successive Design Iterations



TDR Improvement over connector launch with Successive Design Iterations

# APPENDIX - BOARD MOUNT

## Board Mount Specific Application Connector Request

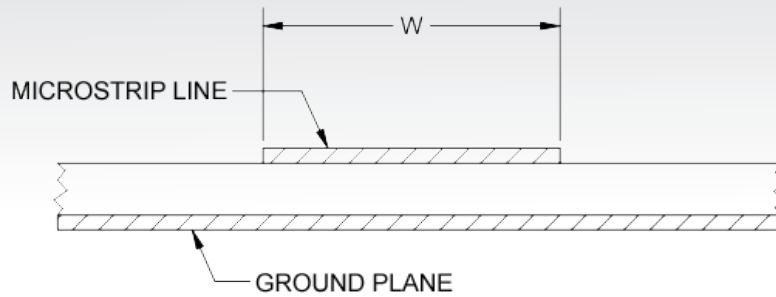
SV Microwave requests the information below in order to optimize our connector design for your specific application. The footprint will be designed and simulated per your input. Please submit the completed table below to [marketing@svmicrowave.com](mailto:marketing@svmicrowave.com) or fax to 561.842.6277. (Additional Copies Available on our Website)

### Footprint Specification Sheet for PCB Mount RF Connectors

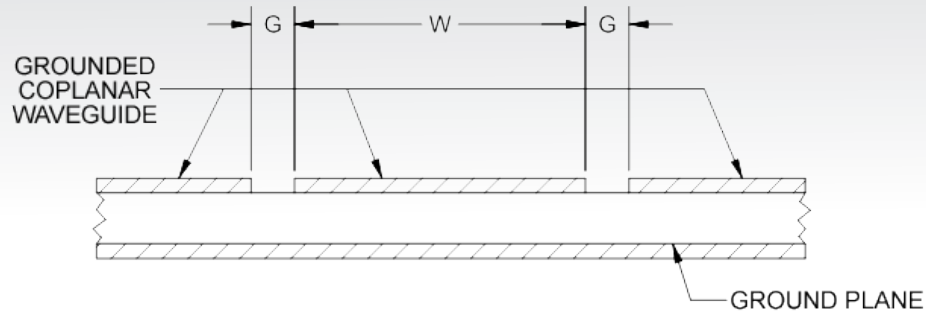
SV Microwave Part Number (if available)	
Operating Frequency Range (GHz)	
Desired VSWR/Return Loss (dB)	
PCB Type (Stripline, Coplanar Waveguide, Microstrip)	
Connector Series (SMA, SMP, SMPM, etc.)	
Connector Type (Edge Launch, Surface Mount, Etc.)	
Signal Line Impedance (ohms)	
PCB Material Type (Rogers 4003, Megtron 6, Etc.)	
Ground Plane Layer 1 Thickness (T1)	
Substrate Layer 1 Dielectric Constant (Er1)	
Signal Line Width (W – see next page)	
Gap Width (G – see next page)	
Substrate Layer 1 Thickness (S1)	
Ground Plane Layer 2 Thickness (T2)	
Substrate Layer 2 Dielectric Constant (Er2)	
Substrate Layer 2 Thickness (S2)	
Ground Plane Layer 3 Thickness (T3)	
Additional Notes:	

If possible, please attach additional documentation detailing the design features of the PCB including relative layer dimensions and characteristics.

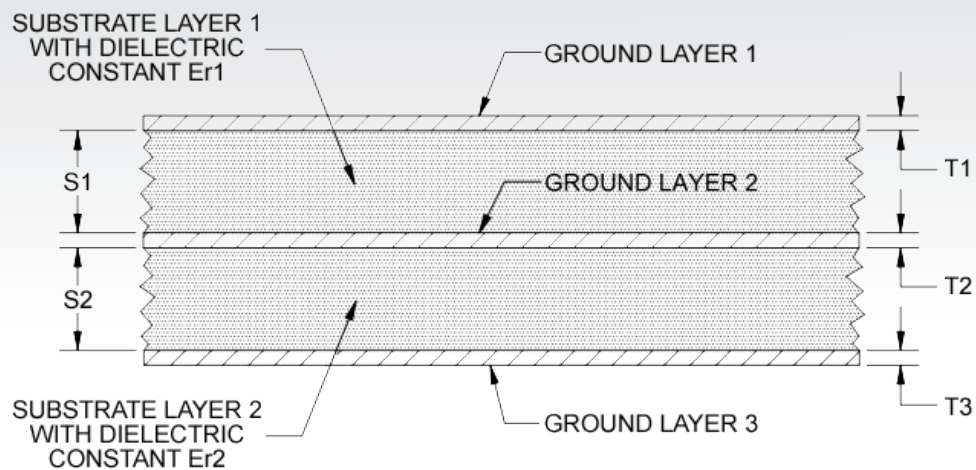
## Micro Strip Line



## Coplanar Waveguide



## Material Stack-Up



# FREQUENCY CHART

Type	Prefix	Freq (GHz)	VSWR*	DWV**	Coupling	Relative Size	Competitor Equivalents	Notes
7/16	84	6	1.15:1	4000	Threaded	3 X		
1.85mm	33	65	1.60:1	500	Threaded	1 X		Mates to 2.4mm
2.4mm	16	50	1.40:1	500	Threaded	1 X	OS-2.4	Mates to 1.85mm
2.92mm	15	40	1.34:1	750	Threaded	1 X	OS-2.92	Mates to SMA
3.5mm	92	26.5	1.30:1	500	Threaded	1 X	OS-3.5	Mates to SMA
BMA	17	22	1.15:1	1000	Slide-on	1 X	OSP	
BMMA	14	28	1.30:1	750	Slide-on	0.75 X	OSSP	
BMZ	89	18	1.20:1	1000	Slide-on	0.75 X		
BNC	47	6	1.20:1	1500	Bayonet	1.5 X		
BZ	88	2	1.10:1	1500	Slide-on	1.5 X		
PN	65	18	1.30:1	3000	Threaded	2.5 X		
PTNC	45	18	1.20:1	1500	Threaded	2 X		(a)
SC	52	11	1.30:1	3000	Threaded	3 X		
SMA	29	18	1.20:1	1000	Threaded	1 X	OSM	(a) (c)
SMB	23	4	1.10:1	1000	Slide-on	0.5 X		
SMC	22	10	1.40:1	1000	Threaded	0.5 X		
SMP	12	40	1.40:1	500	Snap-on	0.25 X	GPO, MMSP, OSMSP	
SMPM	32	65	1.30:1	325	Snap-on	0.2 X	GPPO, MSSP, OSMPPM	
SMPS	38	100	1.30:1***	250	Snap-on	0.15 X	G3PO	
SSMA	27	36	1.30:1	750	Threaded	0.75 X	OSSM	(b)
SVMS	49	23	1.30:1	1500	Snap-on	1 X	GMS	
TNC	40	15	1.30:1	1500	Threaded	2 X		(a)
TRIAx (BNC)	48	6	1.30:1	1500	Bayonet	2 X		
TRIAx (TNC)	48	11	1.30:1	1500	Threaded	2 X		
TYPE N	50	12.4	1.30:1	3000	Threaded	2.5 X		
ZMA	87	18	1.20:1	1500	Bayonet	1.5 X		

(a) 12.4 GHz for mitered right angle version

(b) 18 GHz for mitered right angle version

(c) 26 GHz version available

\* VSWR measured at max frequency

\*\* DWV Values given at sea level  
and 25 degrees Celsius

\*\*\* Measured at 65 GHz

M39012 - Connectors

M83517 - Stripline Connectors

M55339 - Adapters

M31031 - Blindmate Connectors

M3933 - Attenuators

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