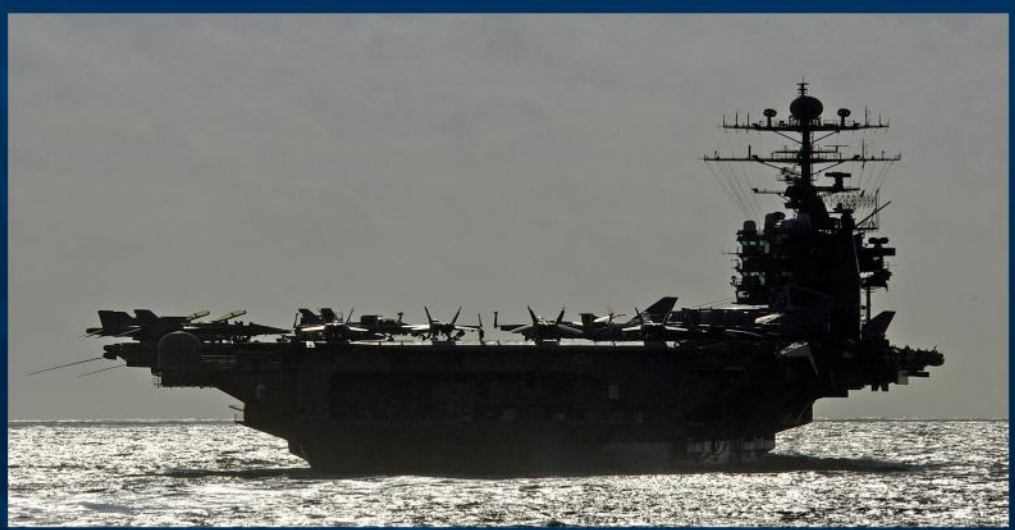
Amphenol

SV MICROWAVE®

RF Connectors & Components

SMPM Coaxial Connectors







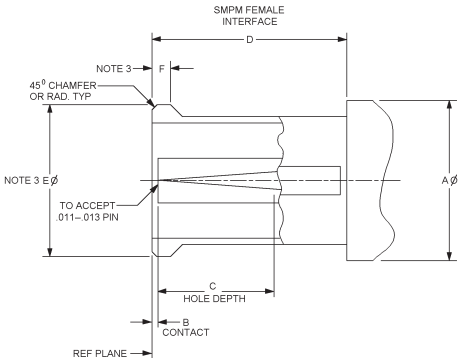
SMPM Coaxial Connectors

SMPM Connectors DC - 65 GHz

SV Microwave offers a complete line of SMPM connectors. SMPM connectors, a push-on mating design, provide microwave performance through 65 GHz and offer less than .140 inch center-to-center spacing for high-density, multiple mating of two RF modules. A typical mating configuration includes two shrouds (receptacles) joined by a blindmate bullet adapter. Shrouds with a full detent retain the bullet when modules are separated. Shrouds with smooth bore separate from the bullet with a lower dis-engagement force and require no extraction tool.

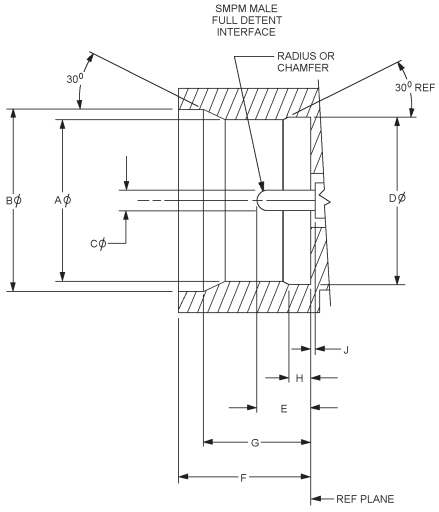
Interface Mating Dimensions

Female Interface



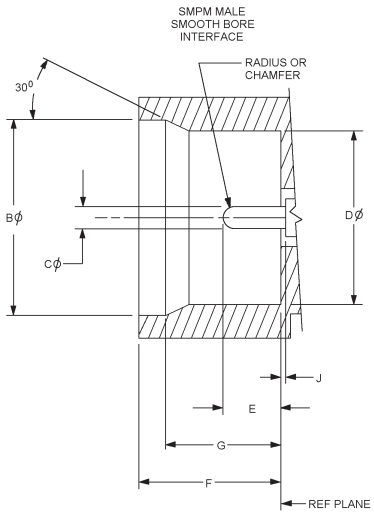
LTR	Minimum		Maximum	
	Inches	mm	Inches	mm
AØ	---	---	.110	2.79
B	.000	0.00	.008	0.20
C	.050	1.27	---	---
D	.068	1.73	---	---
EØ	---	---	.095	2.41
F	---	---	.023	0.58

Detent Interface



LTR	Minimum		Maximum	
	Inches	mm	Inches	mm
AØ	.083	2.11	.085	2.16
BØ	.111	2.82	.115	2.92
CØ	.011	0.28	.013	0.33
DØ	.086	2.18	.088	2.24
E	.030	0.76	.045	1.14
F	.082	2.08	.084	2.13
G	.062	1.57	.072	1.83
H	.021	0.53	.023	0.58
J	.000	0.00	----	---

Smooth Bore Interface



LTR	Minimum		Maximum	
	Inches	mm	Inches	mm
BØ	.111	2.82	.115	2.92
CØ	.011	0.28	.013	0.33
DØ	.086	2.18	.088	2.24
E	.030	0.76	.045	1.14
F	.082	2.08	.084	2.13
G	.062	1.57	.072	1.83
J	.000	0.00	----	---

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Features to meet mechanical/electrical requirements when mated with SMPM male interface.

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SMPM Connectors - Specifications

Material and Finish

Bullet Adapter Body	Beryllium Copper per ASTM B196, Copper Alloy UNS C17300, Temper TD04 Gold per ASTM B 488, Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1
Shroud Hermetic (Sealed With Corning® 7070 Glass)	Kovar® per ASTM-F15, Stainless Steel per AMS 5640, Alloy UNS S30300 Free Machining Type 303, Condition A, Passivate Per AMS-QQ-P-35, Type II Gold per ASTM B 488, Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1
Shroud Non-Hermetic	Stainless per AMS 5640, Alloy S30300, Free Machining, Type 303, Condition A Passivate per AMS-QQ-P-35, Type II, Gold per ASTM B 488, Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1
Center Contact (Socket)	Beryllium Copper per ASTM B196, Copper Alloy UNS C17300, Temper TD04, Gold per ASTM B 488, Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1
Insulator	Teflon per ASTM D1710 Ultem® 1000 (polyetherimide) per ASTM 5205 Torlon® (polyamide-Imide) per ASTM 5204

Electrical

Frequency	DC to 65 GHz
Nominal Impedance	50 Ohms
VSWR	1.1:1 DC to 26.5 GHz (typical) 1.3:1 26.5 to 65 GHz (typical)
Insertion Loss (Adapters)	.10 dB x $\sqrt{}$ f (where f = GHz) dB
Insertion Loss (Cable Connectors)	.12 dB x $\sqrt{}$f (where f = GHz) dB
RF Leakage (fully mated)	–80 dB from DC to 3 GHz; –65 dB from 3 to 65 GHz
Temperature Rating	-65°C to +165°C
Dielectric Withstanding Voltage	325 VRMS min. at sea level
Insulation Resistance	5,000 megohms min.
Center Contact (Socket) Resistance	6.0 milliohms max.
Outer Contact Resistance	2.0 milliohms max.

Mechanical

Captivation — Center Contacts (Adapters and Right Angle Connectors only)

Axial Force	1.5 lbs. min.

Mating Forces

Force to Engage	4.5 lbs. typical Full Detent, 2.5 lbs. typical Smooth Bore
Force to Disengage	6.5 lbs. typical Full Detent, 1.5 lbs. typical Smooth Bore
Durability (Mating Cycles)	Full detent 100 min.; smooth bore 500 min.
Axial Displacement	0.010" (flush to -0.010" from the reference plane)
Radial Misalignment	± 0.010"

Environmental

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

SMPM Applications

SMPM connectors offer a solution to high density, high frequency applications. SV Microwave offers a full product line of SMPM shrouds, cable connectors, adapters and contacts for multiport connectors.

SV Microwave is also a provider of SMPM flexible and semi-rigid cable assemblies.

Our full service cable assembly shop has two CNC semi-rigid cable bending machines. All testing is done in house per MIL-STD 202. Our operators are trained to IPC-STD-001C and we can perform full electrical testing up to 50 GHz. We specialize in tight bend radius and high precision miniature coaxial cables for inside the box applications where SMPM connectors offer a high density advantage.

The figure to the right shows two SMPM right angle females terminated semi-rigid .047" cable.

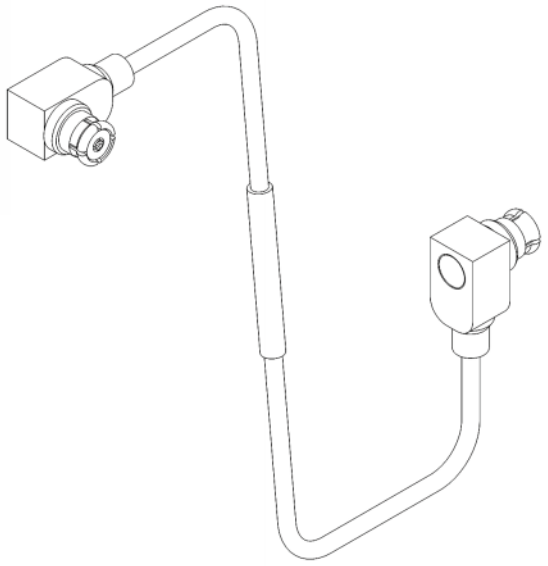


Figure 1. SMPM .047" Cable Assembly

SMPM connectors are ideal when minimum board separation width is needed. SV Microwave offers multiple designs to accommodate any board to board spacing requirement. Shown below are two SMPM male shrouds and a female bullet that have a board to board spacing of 0.223" in the mated configuration.

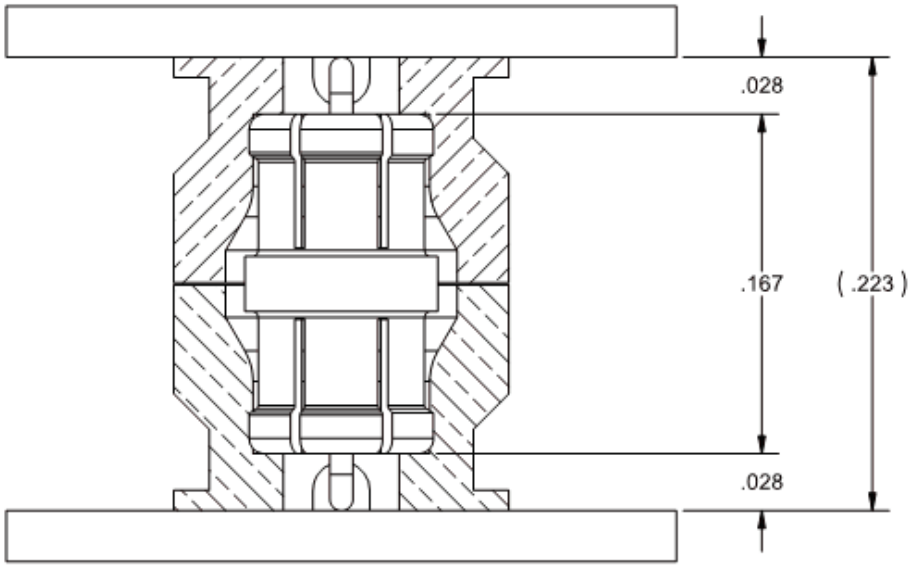


Figure 2. SMPM Board to Board Spacing Example

SMPM Connectors - Applications

SMPM Electrical Performance

Our SMPM connectors perform with excellent VSWR and Insertion Loss up to 65 GHz. Performance is guaranteed within the radial and axial misalignment tolerances specified on the datasheet. Radial and axial misalignments are measured as shown in the image adjacent.

Typical electrical performance under maximum misalignment is:

Type	Misalignment (max)	VSWR
Axial (FD)	0.010”	1.15:1
Axial (SB)	0.012”	1.30:1
Radial (FD, SB)	+/- 0.010”	1.35:1

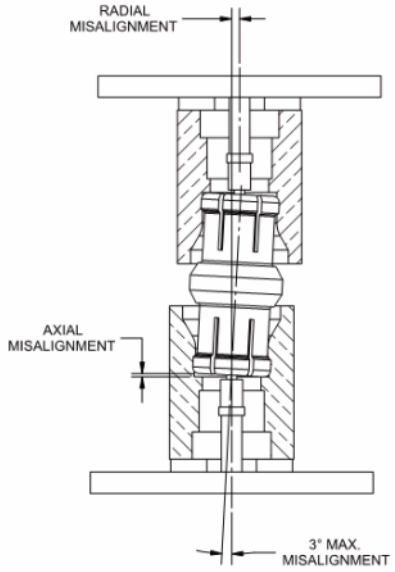


Figure 3. Radial and Axial Misalignment Measurements

SMPM Multiport Connectors

Another common approach is to machine multiple SMPM interfaces into a single housing. SMPM multiport connectors can be designed in any configuration. One example shown below is for an 8 port SMPM shroud edge launched connector block.

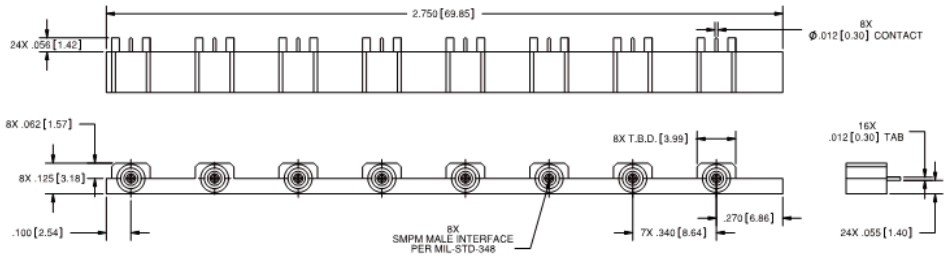


Figure 4a. 8 Port Edge Launched SMPM Male Multi-port Connector

Figure 5b below shows a custom solution where a 4 port SMPM block was mounted to a PCB with a right angle contact. In this design the need for bullets was eliminated by using a 4 port floating female panel mounted connector block to take up the system misalignment.

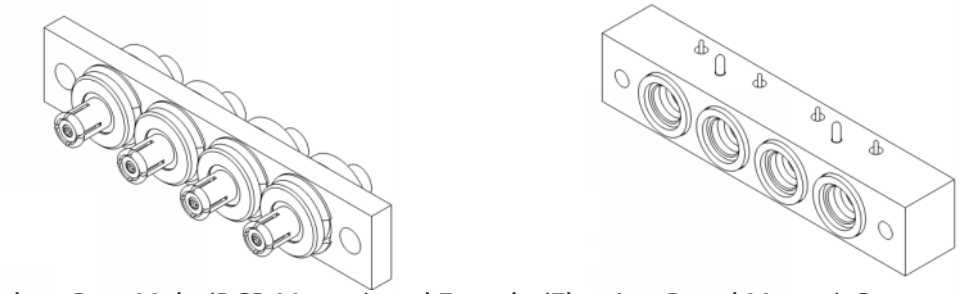
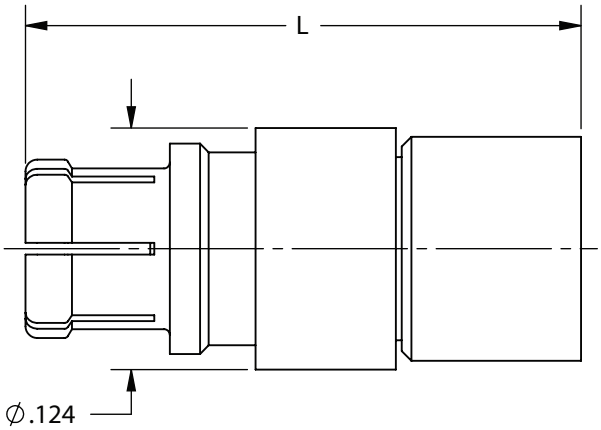


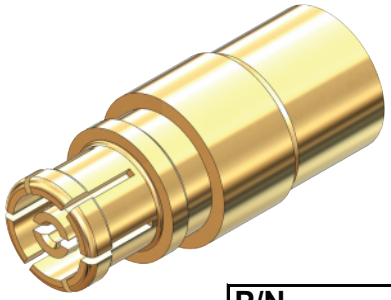
Figure 4b. 4 Port Male (PCB Mount) and Female (Floating Panel Mount) Connector Blocks

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SMPM Cable Connectors

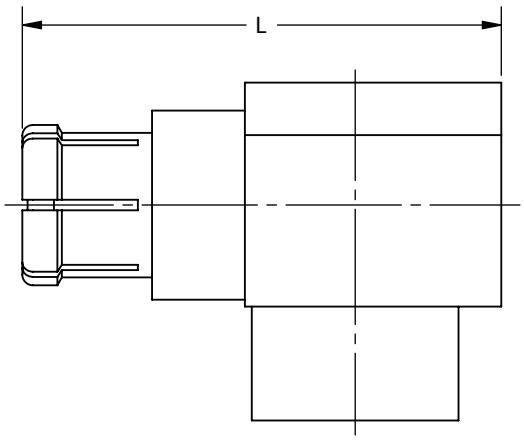
Straight Female

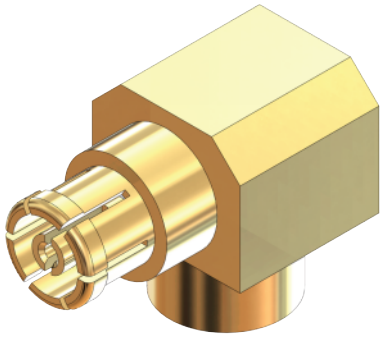




P/N	Cable	L
3221-40006	.085	.285
3221-40007	.047	.260

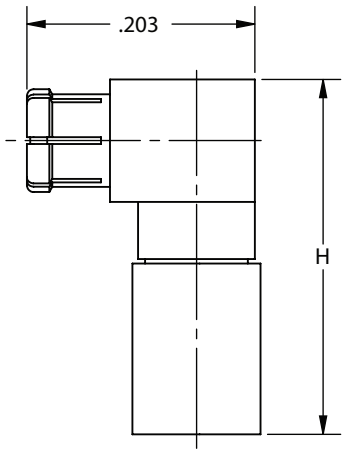
Right Angle Female

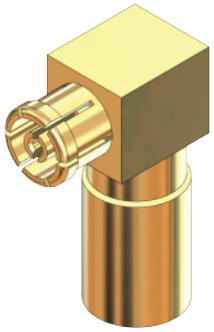




P/N	Cable	L
3222-40002	.085	.274
3269-4001	.047	.207

Swept Right Angle Female





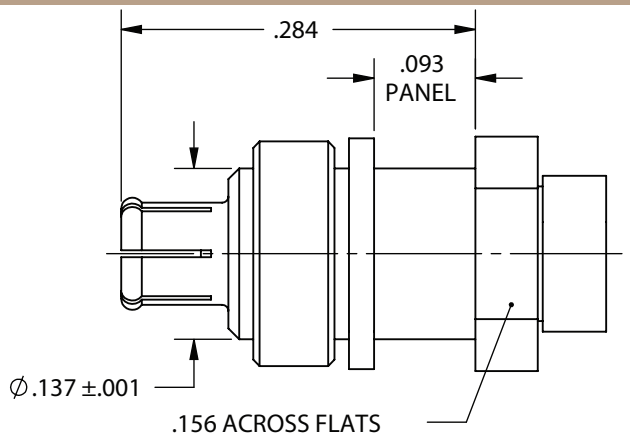
P/N	Cable	H
3222-40005	.085	.316
3222-40006	.047	.221

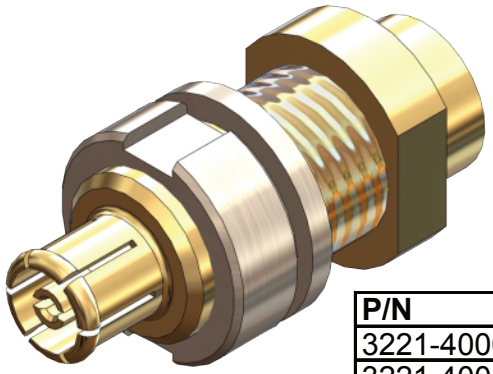
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SMPM Cable Connectors

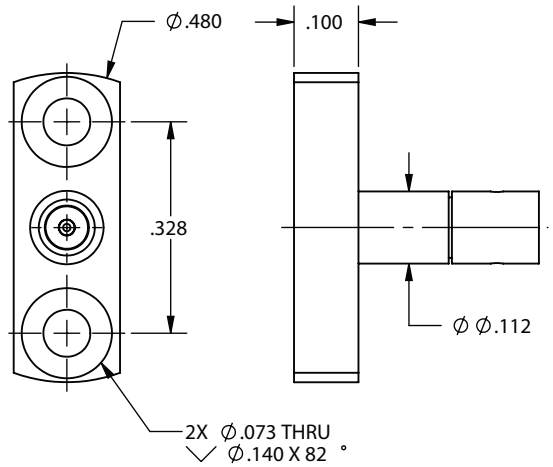
Straight Female Bulkhead Mount

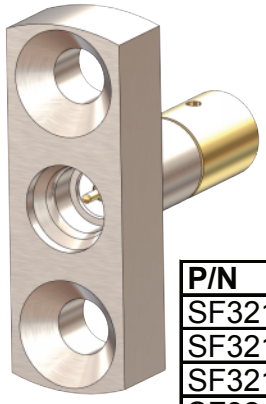




P/N	Cable
3221-4000	.085
3221-40011	.047

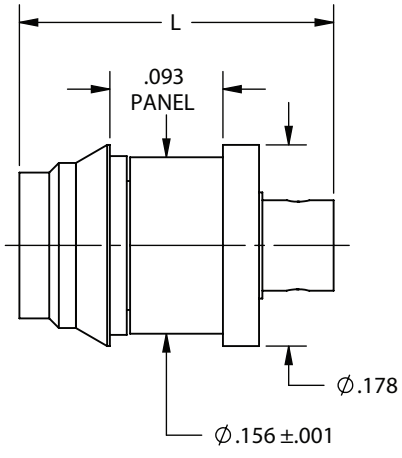
Straight Male Two Hole Flange Mount

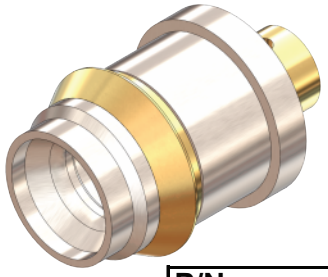




P/N	Cable	Detent
SF3211-6000	.085	SB
SF3211-60013	.085	FD
SF3211-60024	.047	SB
SF3211-60025	.047	FD

Straight Male Snap-In





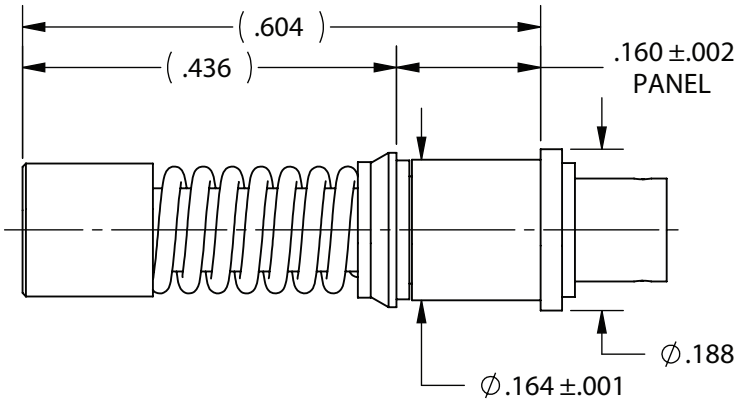
P/N	Cable	Detent	L
3211-40005	.085	SB	0.302
3211-40004	.085	FD	0.302
3211-40003	.047	SB	0.278
3202-6000	.047	FD	0.278

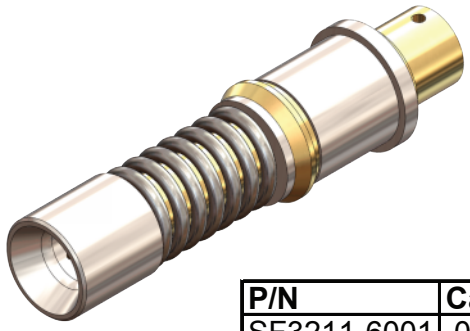
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SMPM Cable Connectors

Straight Male Snap In Float Mount

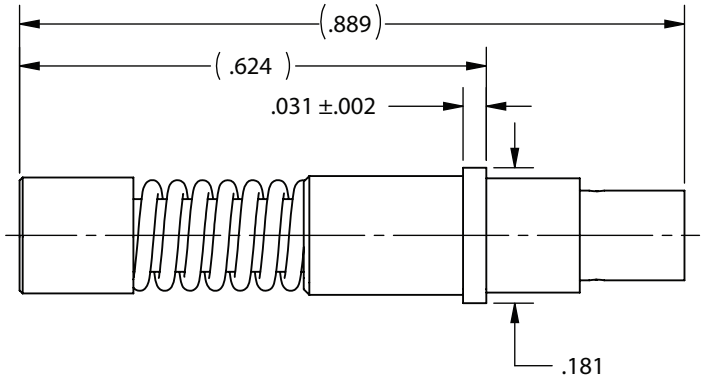


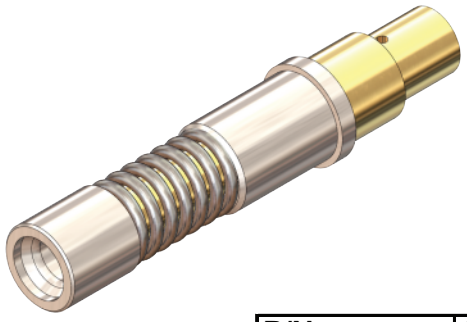


P/N	Cable
SF3211-6001	.085
SF3202-6001	.047

SMPM D38999 Contacts

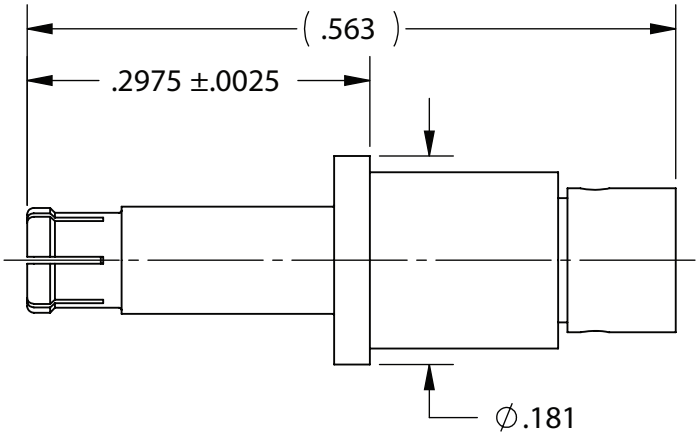
Straight Male Size 12 Socket Contact

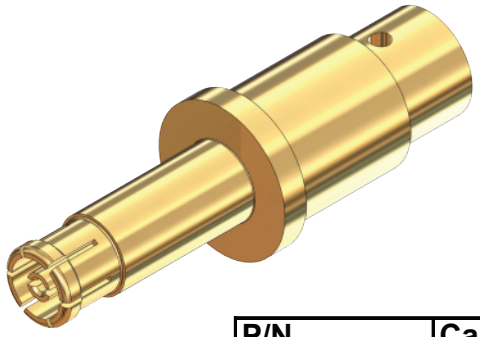




P/N	Cable
SF3211-6004	.085

Straight Female Size 12 Pin Contact





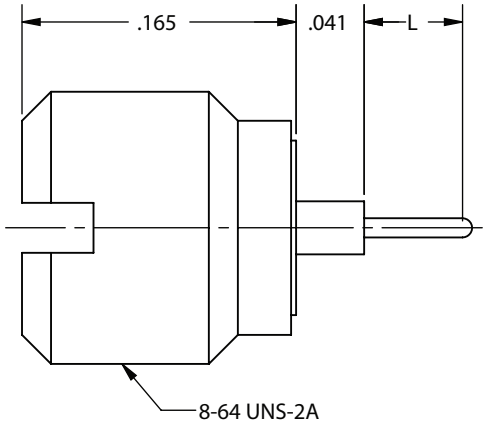
P/N	Cable
3221-4002	.085

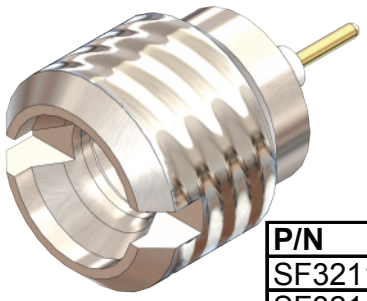
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SMPM Shrouds

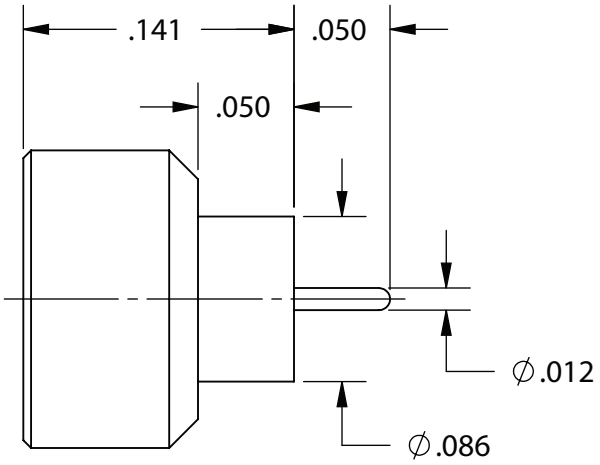
Straight Male Thread-In

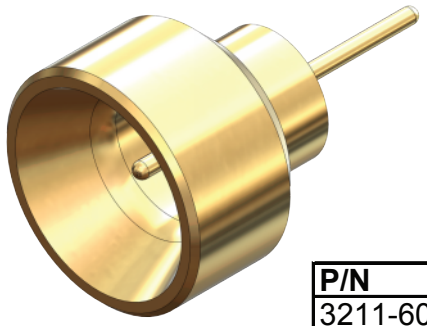




P/N	Detent	L
SF3211-60009	FD	.015
SF3211-60010	FD	.065
SF3211-60011	SB	.015
SF3211-60012	SB	.065

Straight Male Hermetic Solder-In

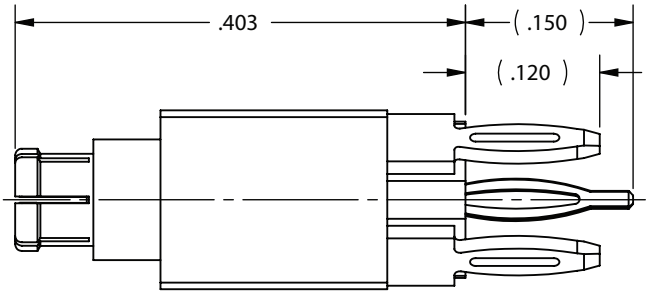


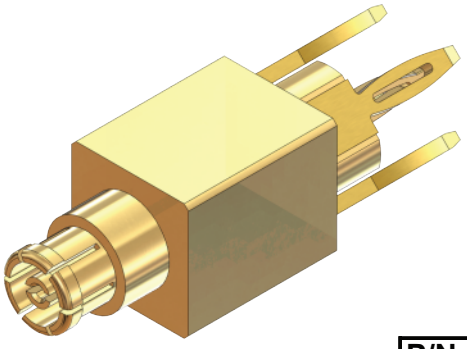


P/N	Detent
3211-60028	SB
3211-60027	FD

SMPM PCB Mounts

Straight Female Compliant Pin

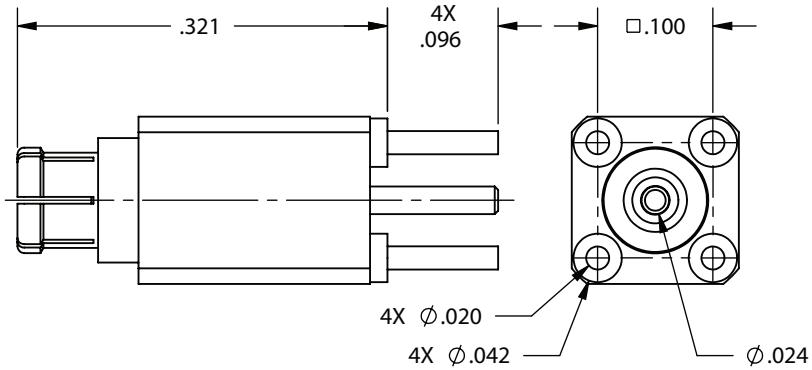


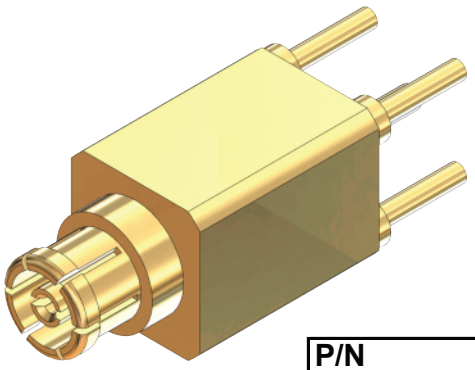


P/N
3221-40008

SMPM PCB Mounts

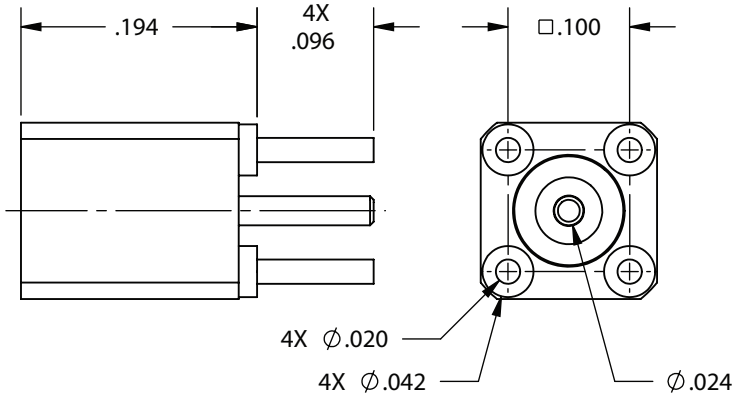
Straight Female Four Leg

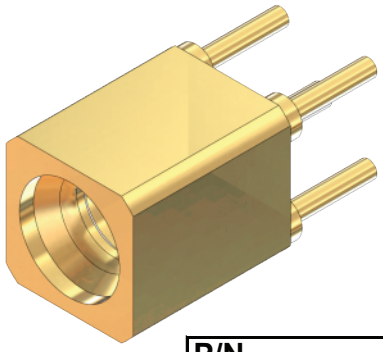




P/N
3286-4100

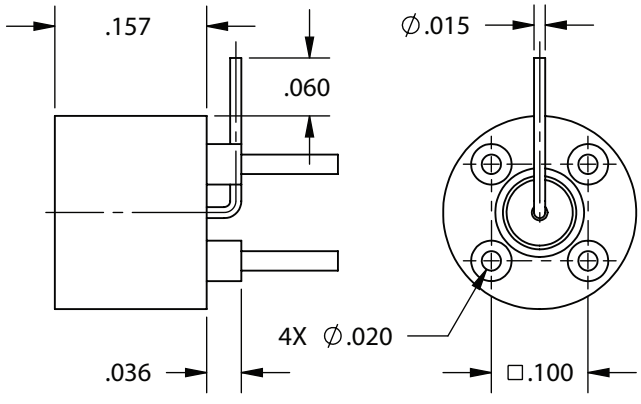
Straight Male Four Leg

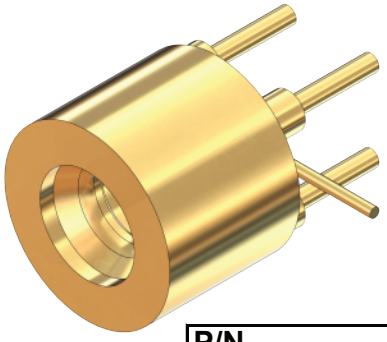




P/N	Detent
3287-4100	FD
3287-4101	SB

Straight Male Four Leg R/A Contact





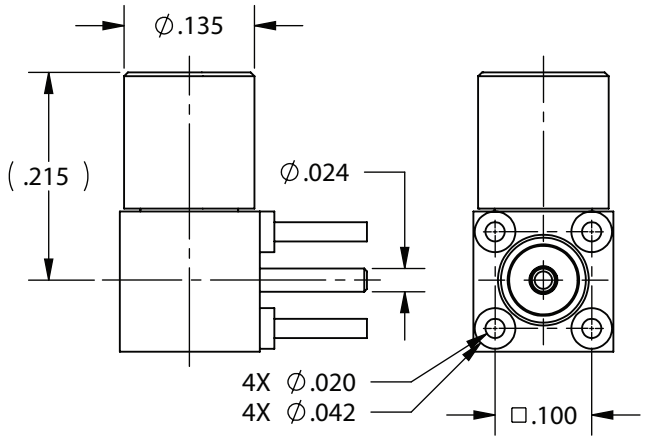
P/N	Detent
3211-60033	FD
3211-60034	SB

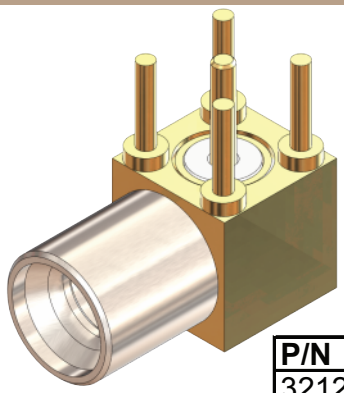
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SMPM PCB Mounts

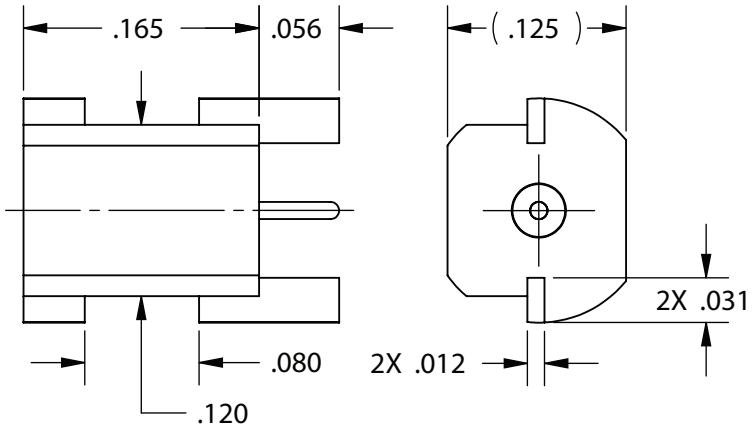
Right Angle Male Four Leg

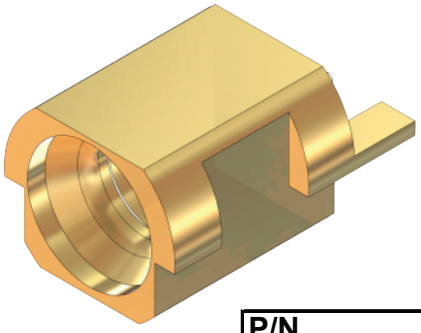




P/N	Detent
3212-40002	FD
3212-40003	SB

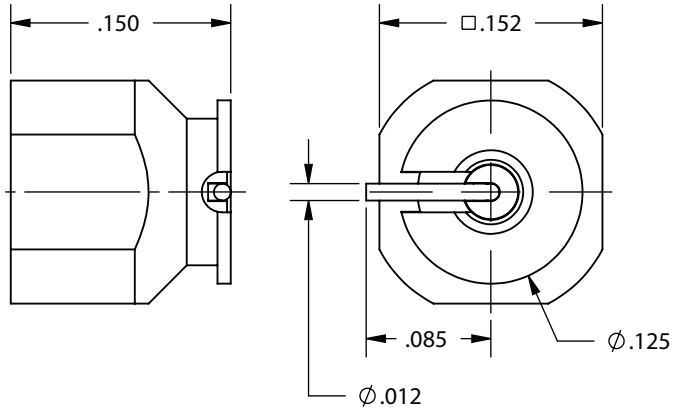
Straight Male Edge Launch

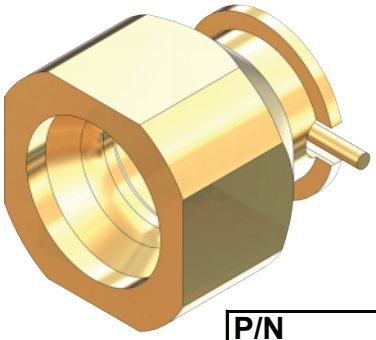




P/N	Detent
3285-6001	FD
3211-60035	SB

Straight Male Surface R/A Contact





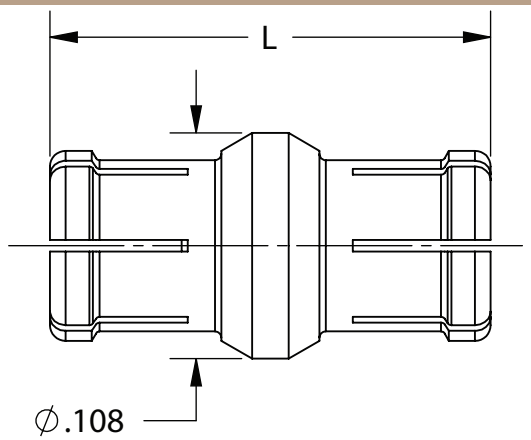
P/N	Detent
3287-6100	FD
3287-6101	SB

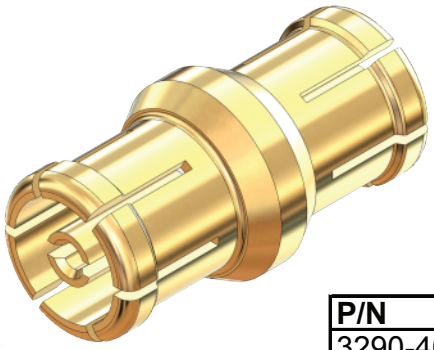
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SMPM In-Series Adapters

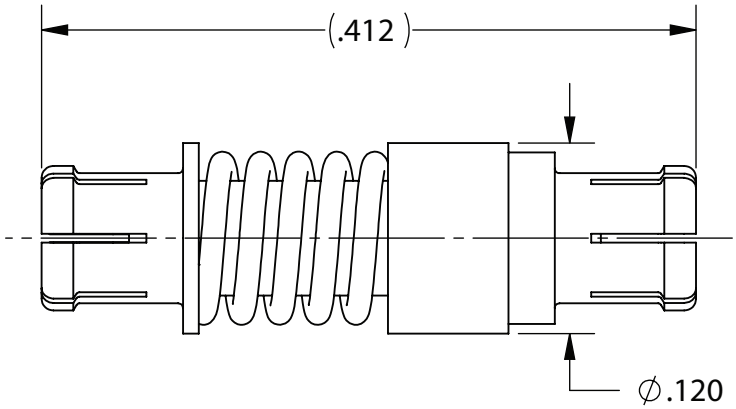
Female to Female Bullet

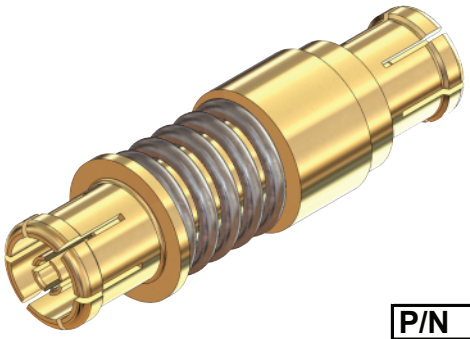




P/N	L
3290-4002	.211
3290-4003	.327

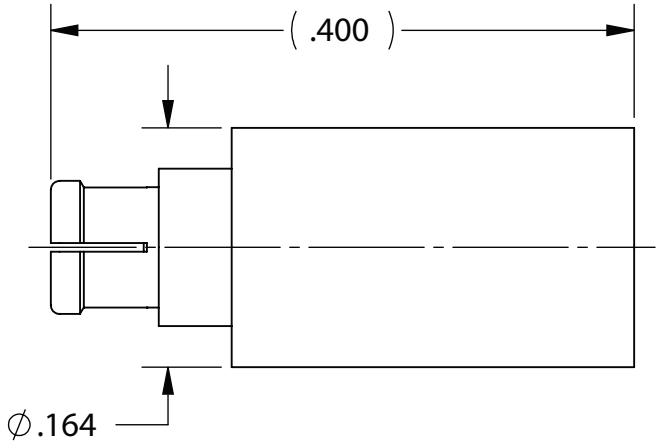
Female to Female Bullet Spring Loaded

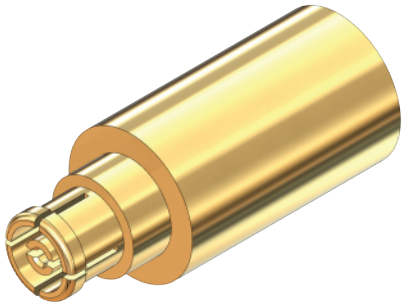




P/N
1132-4006

Male to Female Adapter

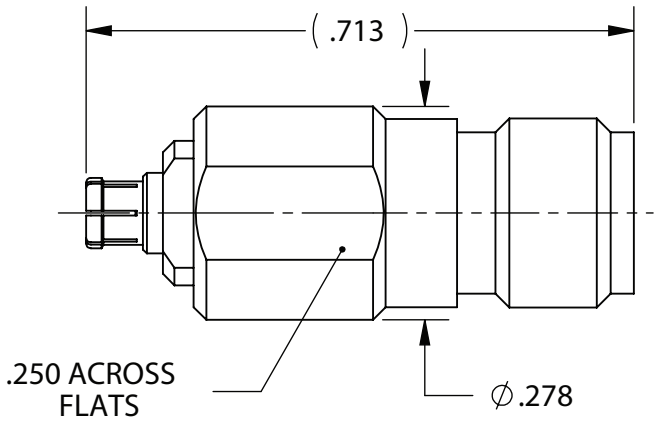




P/N
1132-4005

SMPM Between Series Adapters

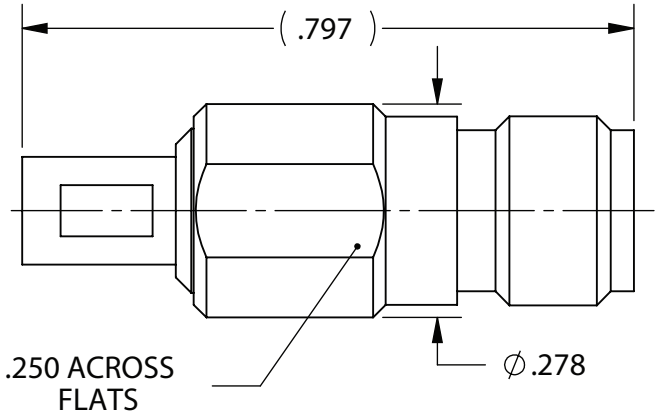
Female SMPM





P/N	Series
1132-6025	SMA Female
1132-4003	SMA Male

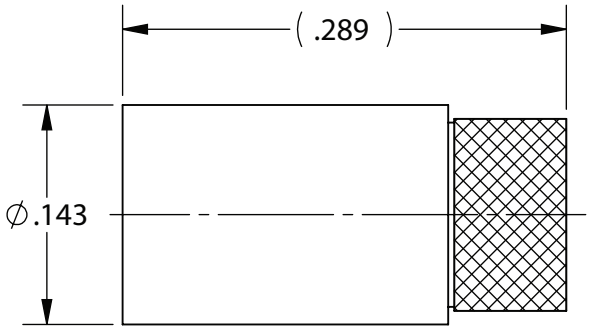
Male SMPM

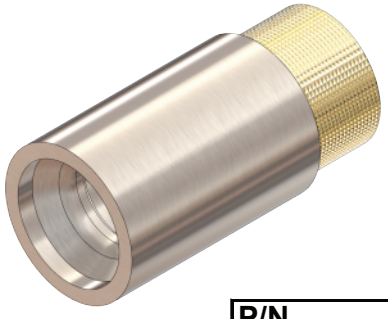


P/N	Series	Detent
SF1132-6027	SMA Female	FD
SF1132-6026	SMA Female	SB
SF1080-6005	SMA Male	FD
SF1080-6004	SMA Male	SB
SF1132-6031	To 2.92 mm Female	SB
SF1132-6032	To 2.4 mm Female	SB

SMPM Resistive Components

Male 1/2 Watt Termination

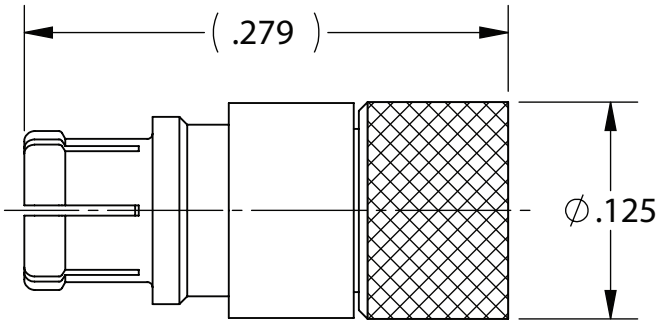


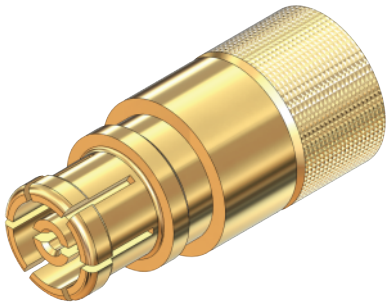


P/N	Detent
8032-6002	SB
8032-6001	FD

SMPM Resistive Components

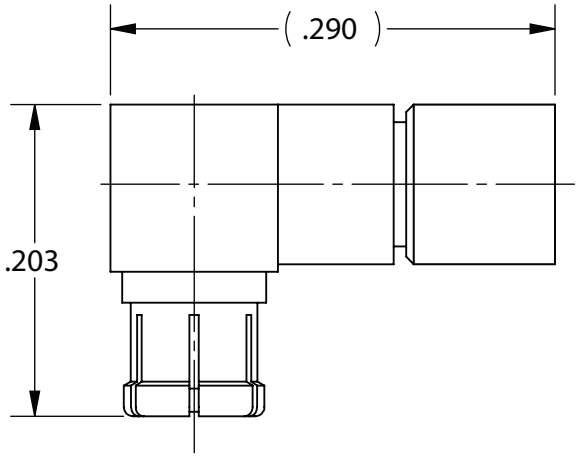
Female Termination and Short

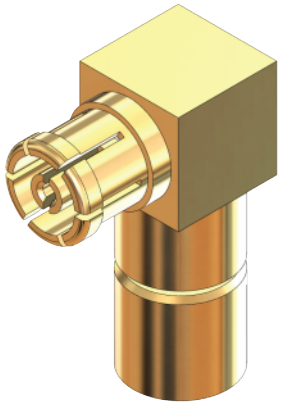




P/N	Description
8032-4003	1/2 W
8032-4007	Short

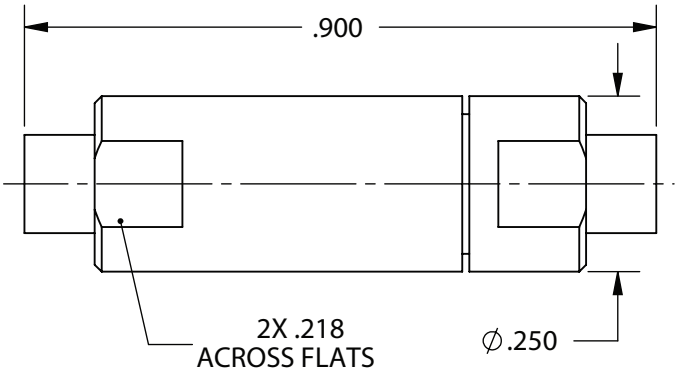
Female R/A Termination (1/2 W)

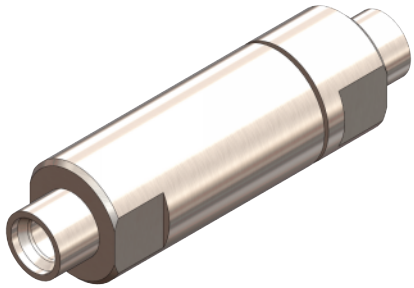




P/N
8032-4004

Attenuators





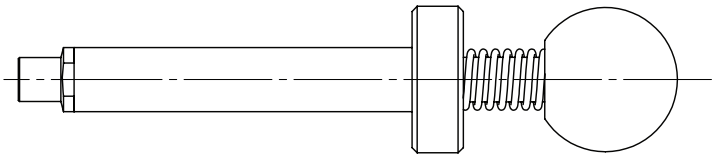
P/N	Description
SF0932-6200-XX	Male To Male

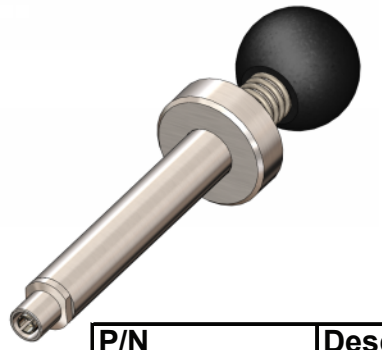
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SMPM Tools

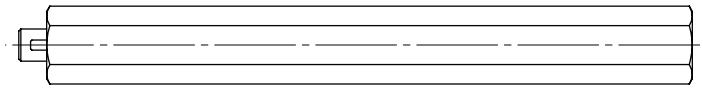
SMPM Removal Tools

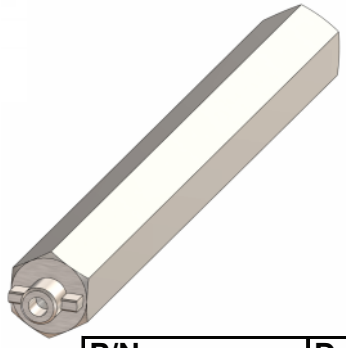




P/N	Description
500-32-007	Bullet Removal Tool
500-32-004	Male Panel Removal

SMPM Drivers

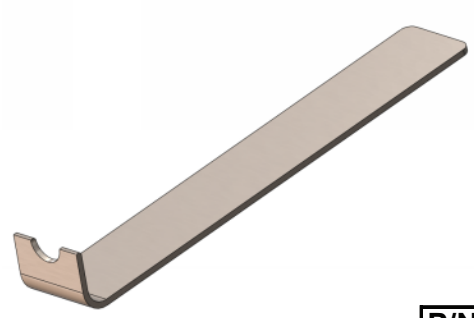




P/N	Description
500-32-009	Male Shroud Driver, CM
500-32-008	Male Shroud Driver, FD

SMPM Female Cable Removal Tool





P/N
500-32-010

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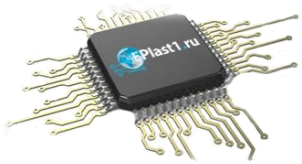
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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.