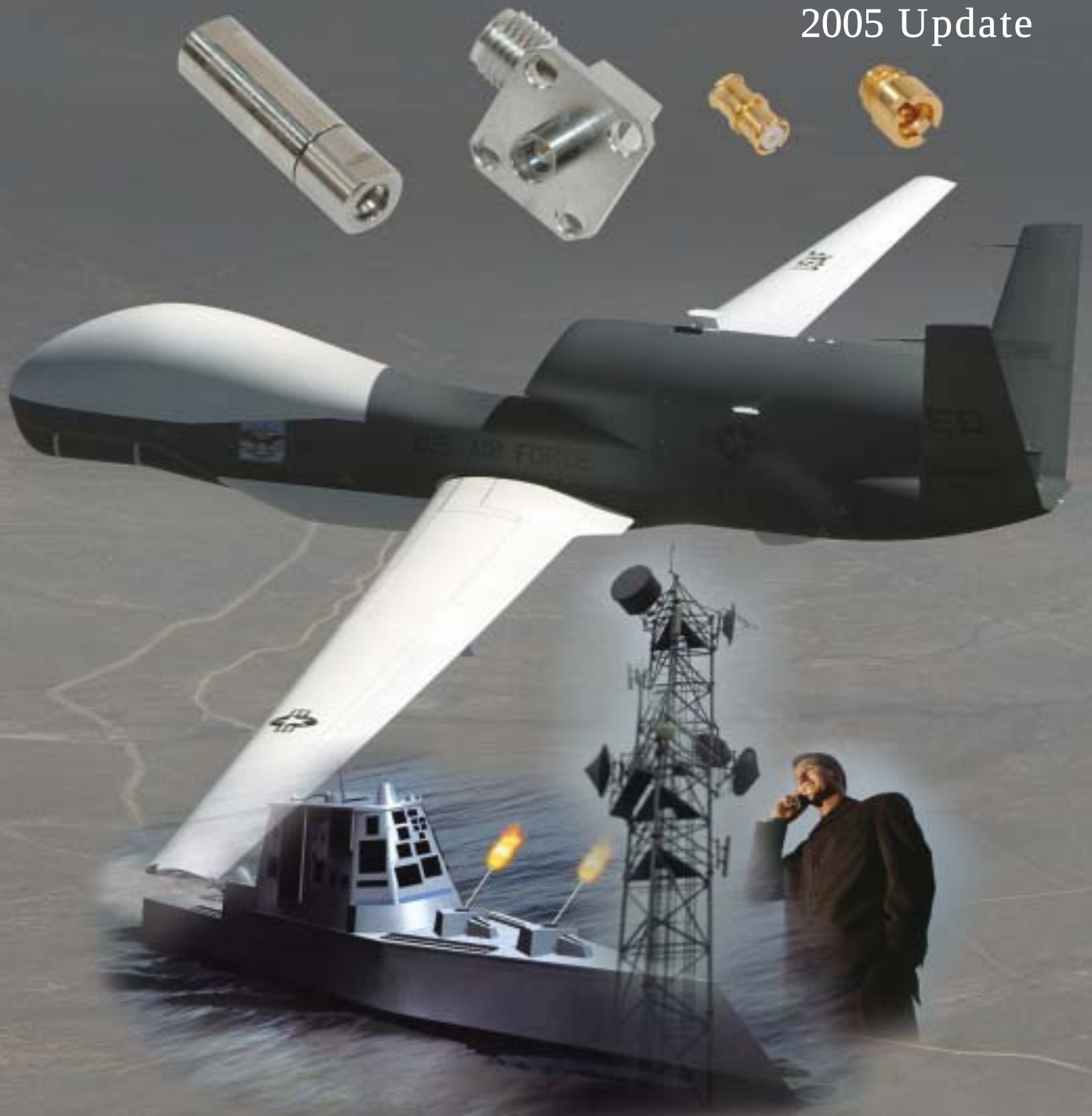


SV MICROWAVE®

SMP Coaxial Connectors

2005 Update



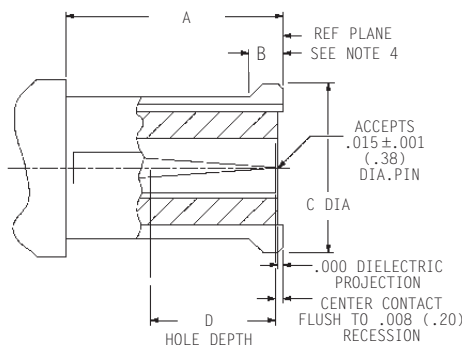
SMP CONNECTORS DC – 40 GHz

SV Microwave has introduced a complete line of SMP connectors which conform to DSCC 94007, 94008 and MIL-STD-348 specifications. SMP connectors provide microwave performance through 40 GHz and offer .170 inch center-to-center spacing for high-density, push-on mating to join two RF modules. A typical

mating configuration includes two shrouds joined by a bullet adapter. Shrouds with a full detent retain the bullet when modules are separated. The smooth bore (or limited detent) permits the shroud to separate from the bullet for consistent mating alignment.

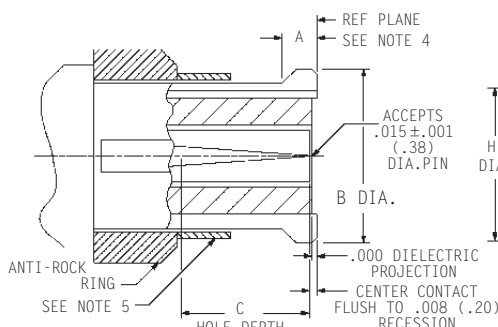
Interface Mating Dimensions

Socket (Adapter)



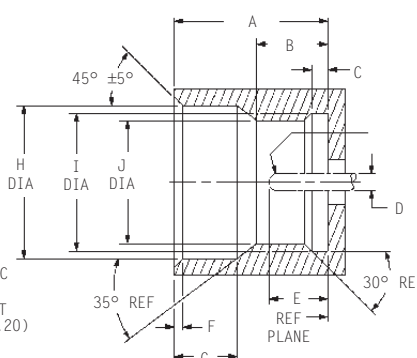
Ltr.	Inches (Millimeters)	
	Minimum	Maximum
A	.112 (2.84)	—
B	.018 (.46)	.025 (.64)
C	—	.135 (3.43)
D	.070 (1.78)	—

Socket (Cable)



Ltr.	Inches (Millimeters)	
	Minimum	Maximum
A	.025 (.64)	.035 (.89)
B	—	.135 (3.43)
C	.070 (1.78)	—

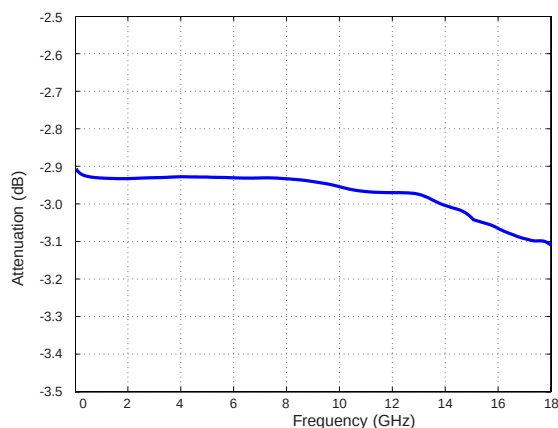
Shroud (Full Detent)



Ltr.	Inches (Millimeters)	
	Minimum	Maximum
A	.108 (2.74)	.112 (2.84)
B	.051 (1.30)	.057 (1.45)
C	.0205 (.521)	.0235 (.597)
D	.014 (.36)	.016 (.41)
E	.055 (1.40)	.045 (1.14)
F	.003 (.08)	.008 (.20)
G	.033 (.84)	.037 (.94)
H	.139 (3.53)	.145 (3.68)
I	.124 (3.15)	.126 (3.20)
J	.114 (2.90)	.118 (3.00)

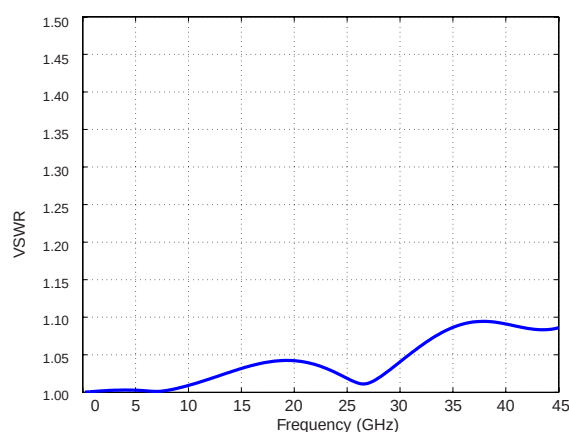
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Interface shall meet the force to engage and disengage requirements in accordance with the appropriate DSCC drawing.
4. Form and dimension of outer conductor to meet electrical and mechanical requirements.
5.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

Actual 3 dB Attenuation Performance



Attenuation (dB)

Actual Performance of SMP Mated Pairs



VSWR

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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 (Hermetically 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

Electrical

Frequency	DC to 40 GHz	
Nominal Impedance	50 Ohms	
VSWR	Bullets	Cabled Connectors
	1.10:1 max.: DC to 23 GHz	1:20:1 max.: DC to 18 GHz
	1.15:1 max.: 23 to 26.5 GHz	1.35:1 max.: 18 to 26.5 GHz
	1.70:1 max.: 26.5 to 40 GHz	1.70:1 max.: 26.5 to 40 GHz
Insertion Loss (Adapters)	.10 dB x $\sqrt{f}$ (where f = GHz) dB	
Insertion Loss (Cable Connectors)	.12 dB x $\sqrt{f}$ (where f = GHz) dB	
Voltage Rating	335 VRMS max. at sea level	
RF Leakage (fully mated)	-80 dB – f GHz dB min. to 3 GHz -65 dB min. from 3 to 26.5 GHz	
Temperature Rating	-65°C to +165°C	
Dielectric Withstanding Voltage	500 VRMS min. at sea level	
Insulation Resistance	5,000 megohms min.	
Center Contact (Socket) Resistance	6.0 milliohms max.	
Outer Contact Resistance	2.0 milliohms max.	

Mechanical

Captivation — Center Contacts (Adapters and Right Angle Connectors only)	
Axial Force	1.5 lbs. min.
Mating Forces	
Force to Engage	Full detent 15.0 lbs. max.; limited detent 10.0 lbs. max.; smooth bore 2.0 lbs. max.
Force to Disengage	Full detent 5.0 lbs. min.; limited detent 2.0 lbs. min.; smooth bore .5 lbs. min.
Durability (Mating Cycles)	
Adapters	Full detent 100 max.; limited detent 500 max.; smooth bore 1,000 max.
Cable Connectors	100 cycles
Axial Displacement	.000/.010 inch (.000/.254 mm)
Radial Misalignment	±.010 inch (.254 mm); ± .020 inch (.508 mm) DSCC 94007ZSP-6SC only

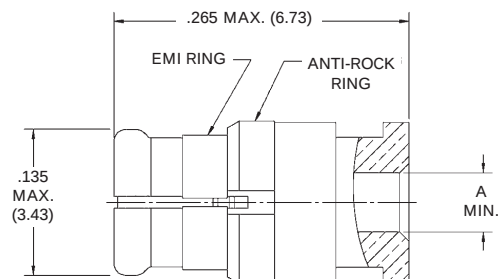
Environmental

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

SMP CONNECTORS DC – 40 GHz

Semi-Rigid Cable • Direct Solder Attachment

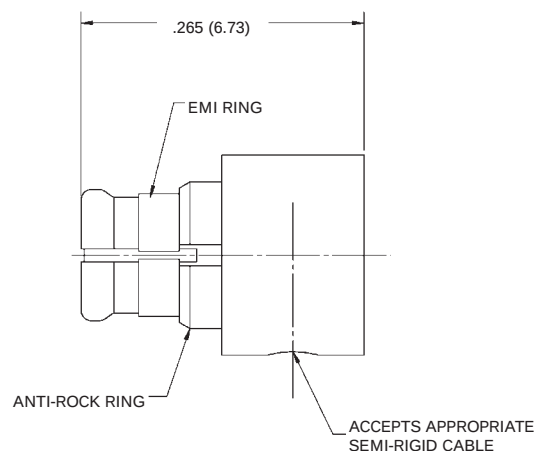
Straight Female



Cable	.085	.047
Part Number	1204-4000	1203-4000
DSCC Part No.	94008ZCG-1	94008CG-2
Dia. A	Inches (mm) 0.089 (2.26)	Inches (mm) 0.050 (1.27)

Finish: Gold plate.

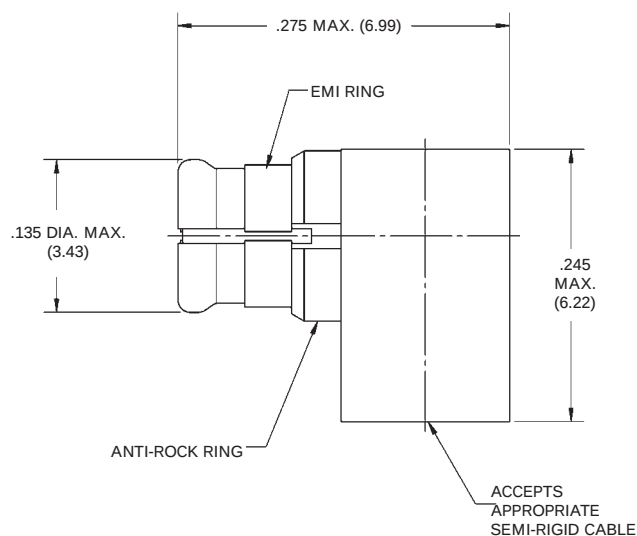
Right Angle Female • DC – 26.5 GHz



Cable	.085	.047
Part Number	1214-4002	1213-4008
DSCC Part No.	94008ZCG-5	97008ZCG-6

Finish: Gold plate.

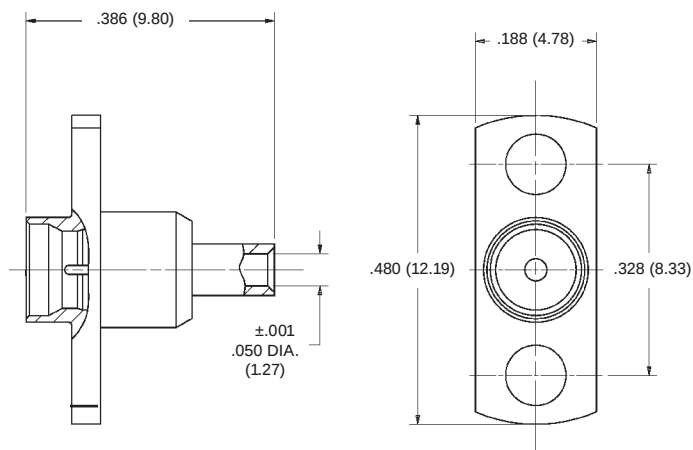
Right Angle Female • DC – 26.5 GHz



Cable	.085	.047
Part Number	1214-4001	1213-4007
DSCC Part No.	94008ZCG-3	94008ZCG-4

Finish: Gold plate.

2-Hole Flange Mount Male



Cable	.047
Part Number	1233-6000

Finish: Gold plate.

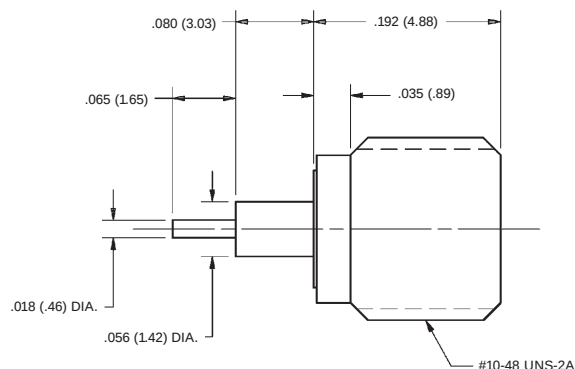
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SMP CONNECTORS DC – 40 GHz

Receptacles

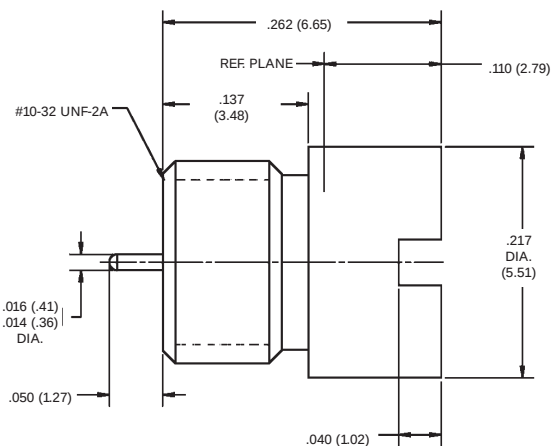
Full Detent Thread-In Male



Part Number **SF1279-6001**

Finish: Gold plate.

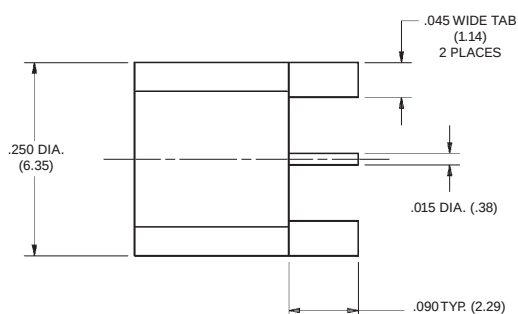
Limited Detent Feedthrough Male



Part Number **1279-4002**

Finish: Gold plate.

Full Detent Edge Mount Male

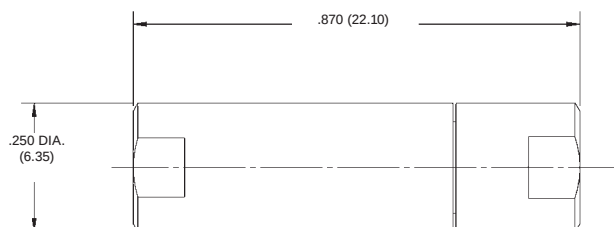


Part Number **1285-6001**

Finish: Gold plate.

Attenuators

SMP Full Detent Male • 0.5 Watt DC – 18 GHz



- 0.4 Watt @ +25°C derated linearly to 0.25 Watt @ +125°C (100 Watts peak power)
- Available in 0.5 dB increments from 0.5 to 20 dB
- VSWR: 1.20:1 max. DC – 4 GHz
1.35:1 max. 4 – 12.4 GHz
1.50:1 max. 12.4 – 18 GHz

Part Number	dB Value	Attenuation Accuracy
SF0912-6305-03	3	± 0.3 dB
SF0912-6305-06	6	± 0.3 dB
SF0912-6305-10	10	± 0.5 dB
SF0912-6305-20	20	± 1.0 dB

Material/Finish: Passivated stainless steel body and sleeves.

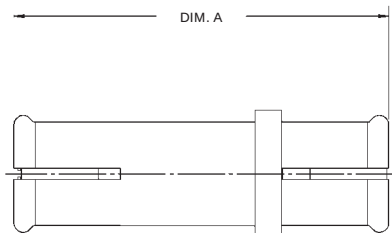
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SMP CONNECTORS DC – 40 GHz

Adapters

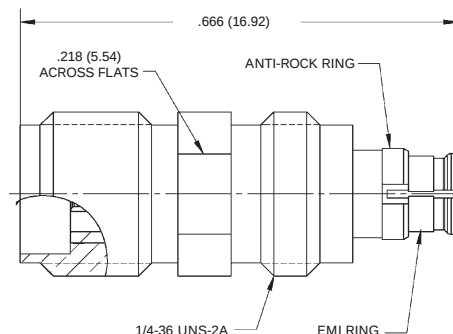
SMP Female to Female



Part Number	1290-4008	1290-4009
DSCC Part No.	94007ZCG-1	94007ZCG-2
DIM. A	Inches (mm) .254 (6.46)	Inches (mm) .395 (10.03)

Finish: Gold plate.

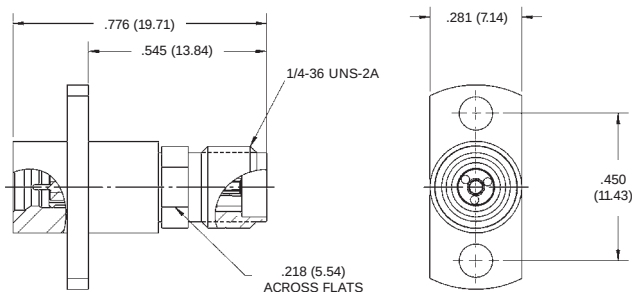
SVK 2.92mm Female to SMP Female



Part Number	1115-6016
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Finish: Gold plate.

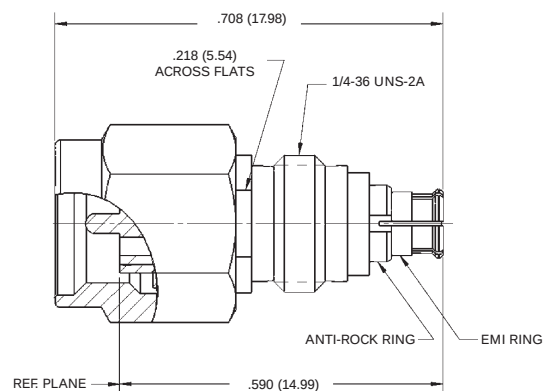
SVK 2.92mm Female to SMP Male Flange Mount



Part Number	1115-6018
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Finish: Gold plate.

SVK 2.92mm Male to SMP Female



Part Number	1115-6017
-------------	------------------

Finish: Gold plate.

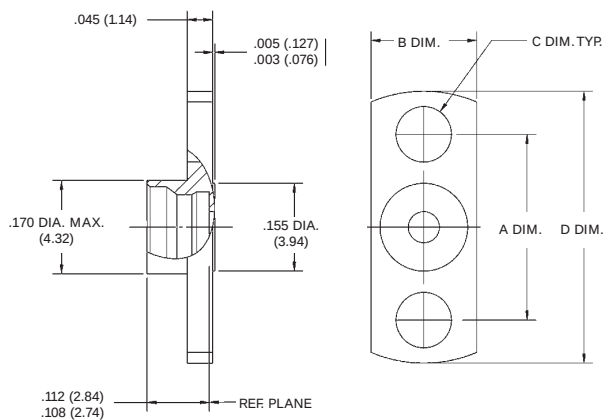
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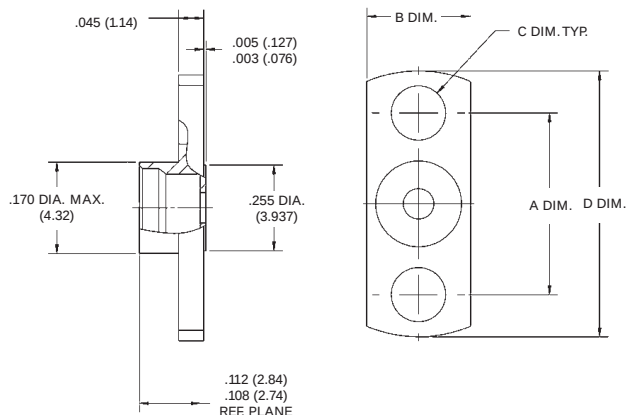
SMP CONNECTORS DC – 40 GHz

Shrouds

Full/Limited Detent



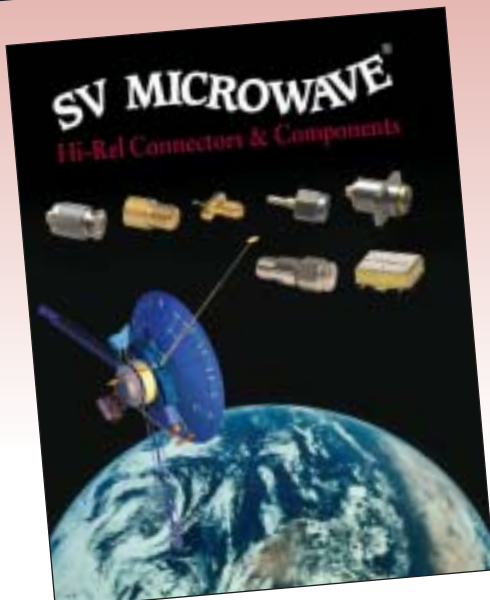
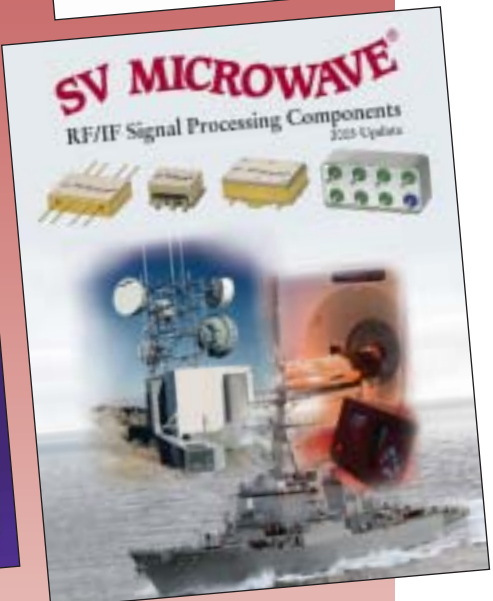
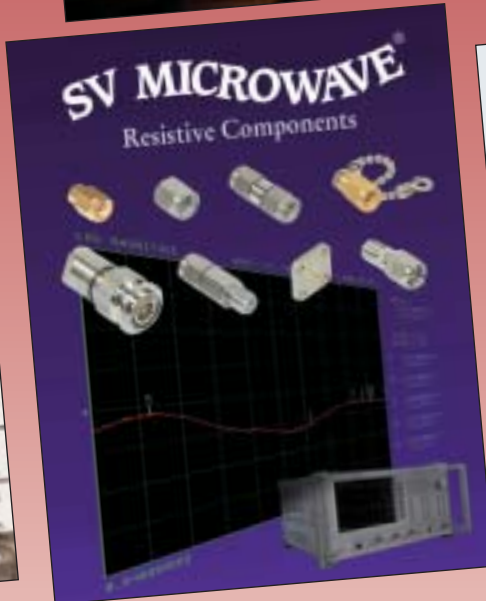
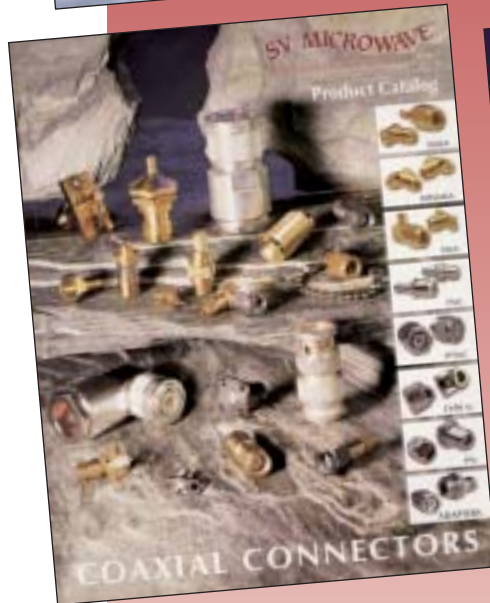
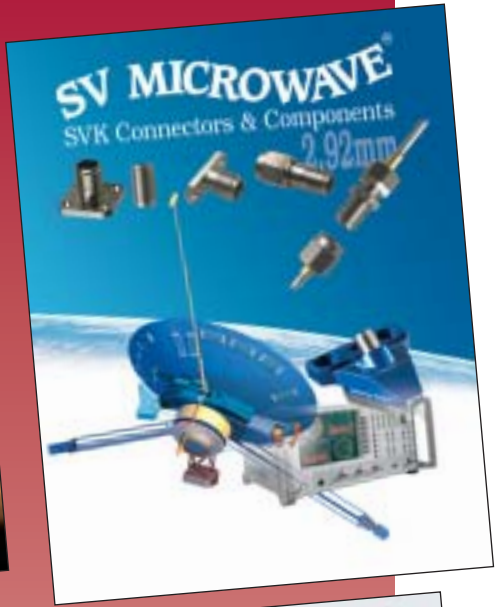
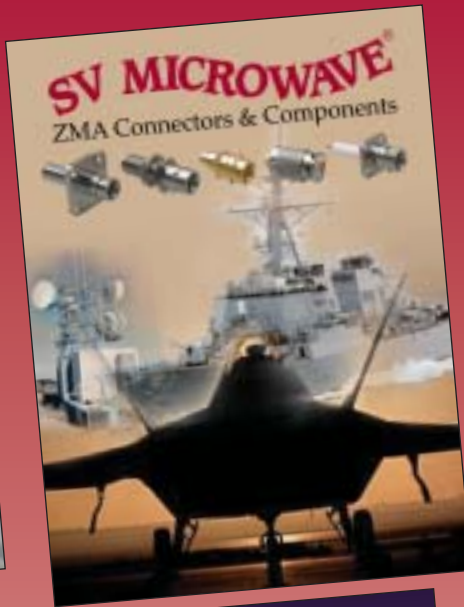
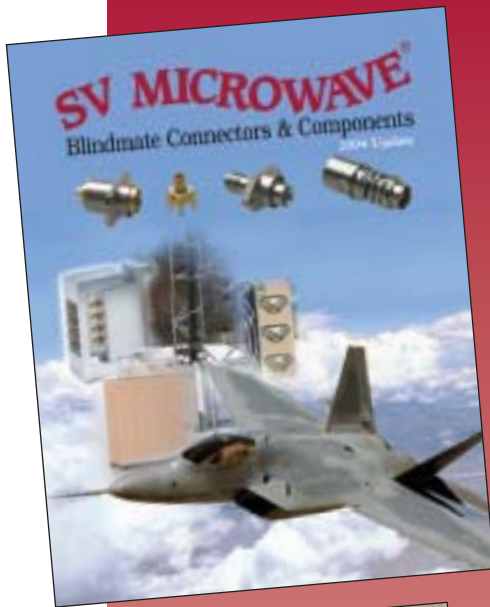
Smooth Bore



Part Number	DSCC Part No.	Detent	A DIM.		B DIM.		C DIM.		D DIM.	
			Inches	(mm)	Inches	(mm)	Inches	(mm)	Inches	(mm)
SF1254-6000	94007ZSP-3	Full	0.328	(8.33)	0.187	(4.75)	0.098	(2.49)	0.480	(12.19)
SF1254-6001	94007ZSP-3L	Limited	0.328	(8.33)	0.187	(4.75)	0.098	(2.49)	0.480	(12.19)
SF1254-6002	94007ZSP-3S	Smooth	0.328	(8.33)	0.187	(4.75)	0.098	(2.49)	0.480	(12.19)
SF1254-6003	94007ZSP-4	Full	0.481	(12.22)	0.223	(5.66)	0.102	(2.59)	0.625	(15.88)
SF1254-6004	94007ZSP-4L	Limited	0.481	(12.22)	0.223	(5.66)	0.102	(2.59)	0.625	(15.88)
SF1254-6005	94007ZSP-4S	Smooth	0.481	(12.22)	0.223	(5.66)	0.102	(2.59)	0.625	(15.88)
SF1254-6006	94007ZSP-5	Full	0.282	(7.16)	0.165	(4.19)	0.073	(1.85)	0.400	(10.16)
SF1254-6007	94007ZSP-5L	Limited	0.282	(7.16)	0.165	(4.19)	0.073	(1.85)	0.400	(10.16)
SF1254-6008	94007ZSP-5S	Smooth	0.282	(7.16)	0.165	(4.19)	0.073	(1.85)	0.400	(10.16)
SF1254-6009	94007ZSP-6SC	Smooth	0.352	(8.94)	0.235	(5.97)	0.073	(1.85)	0.470	(11.94)

Finish: Passivated stainless steel.

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