Milimeter Wave Products Introduce 2018

Over the last ten years Tuyue has developed a line of millimeter wave coaxial connectors which include but are not limited to: connectors, adapters, cable assemblies and loads, attenuators, and DC Blocks. There is also a great variety of test products available upon request. These products have been improved upon to meet customer requirements for programs such as 5G communication systems, millimeter wave radars etc.

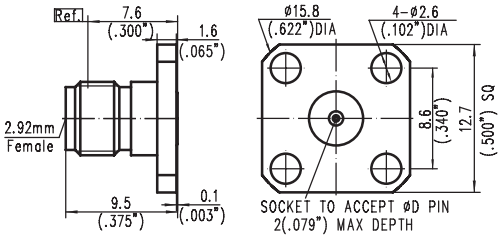
The coaxial MMW connector interface including 1.85mm, 2.4mm, 2.92mm, SMP, SMPM and other series are some of the key products that can work within the DC-43GHz frequency range, covering 5G communication 28GHz and 39GHz frequency bands.

1. MMW connectors

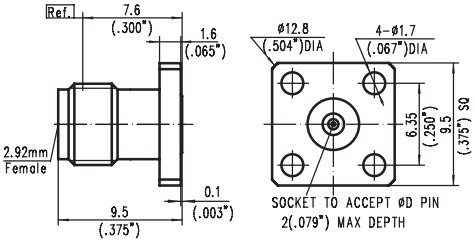
1.1 2.92mm

a. Field Replaceables

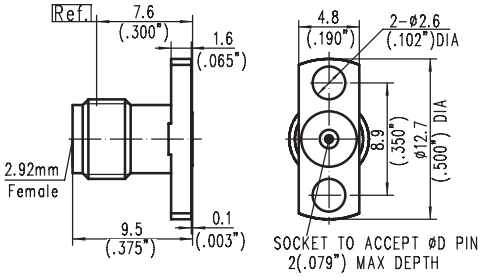
The field replaceable connector is the most commonly used connector for system or module panel installation, Matching hermetic seal or PIN, the diameter has 0.30mm, 0.38mm, 0.51mm and so on. It features excellent performance, high reliability and convenient maintenance. The VSWR is 1.15 typ.



Model	Frequency	D	Installation
2.92mm-KFD1G	DC-43GHz	0.30mm	Panel



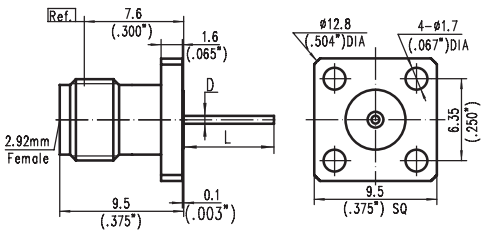
Model	Frequency	D	Installation
2.92mm-KFD1SG	DC-43GHz	0.30mm	Panel



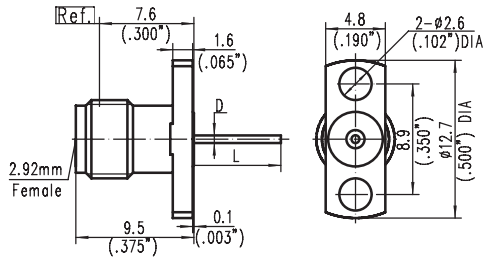
Model	Frequency	D	Installation
2.92mm-KFD1CG	DC-43GHz	0.30mm	Panel

b.The waveguide connectors

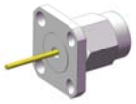
This kind of connector is used for waveguide coaxial conversion and other applications. The PIN diameter out of the body is 0.64mm, The typical VSWR is 1.15.

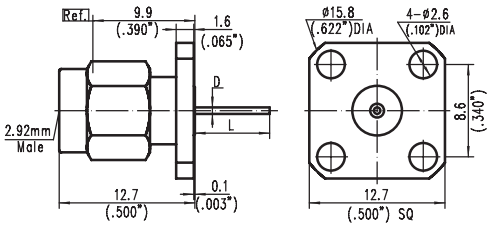


Model	Frequency	D	L
2.92mm-KFD15SG	DC-43GHz	0.64mm	10.92mm



Model	Frequency	D	L
2.92mm-KFD15CG	DC-43GHz	0.64mm	10.92mm

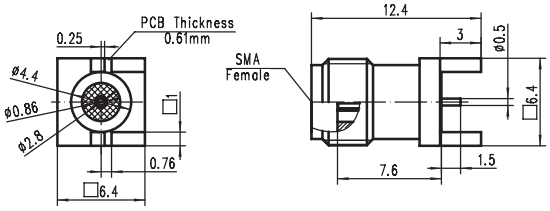




Model	Frequency	D	L
2.92mm-KFD16G	DC-43GHz	0.64mm	6.84mm

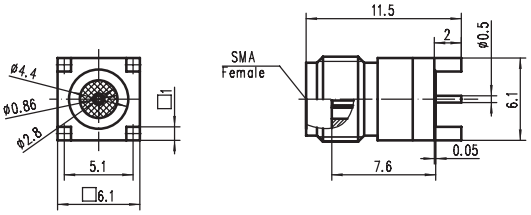
c. PCB Mounting

Right Angle Panel Jiack, edge mount. It has two kind of connectors, such as 2.92mm and 2.4mm.



Model	Frequency
2.92mm-KED16	DC-43GHz
2.4mm-KED16	DC-43GHz

Solder Pin, Straight Jack. It has 2.92mm and 2.4mm etc.

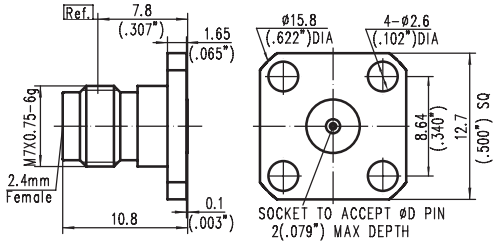


Model	Frequency
2.92mm-KHD15	DC-43GHz
2.4mm-KHD15	DC-43GHz

1.2 2.4mm connectors

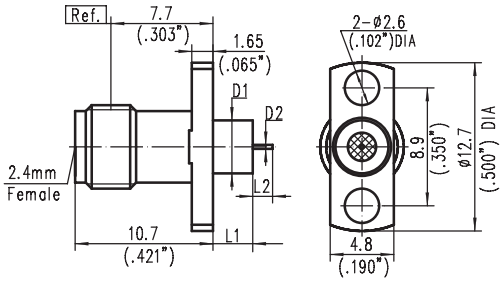
a. Field Replaceables

The socket to match hermetic seal or PIN diameter is 0.30mm， VSWR 1.15 typ.



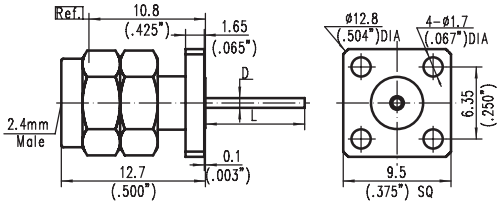
Model	Frequency	D	Installation
2.4mm-KFD3G	DC-50GHz	0.30mm	Panel

b. Bushing Feed Thru



Model	Frequency	D1	D2	L1	L2
2.4mm-KFD9CG	DC-50GHz	4.0 (.158")	0.3 (.012")	1.4 (.055")	1.5 (.059")
2.4mm-KFD10CG	DC-50GHz	4.0 (.158")	0.3 (.012")	3.0 (.118")	1.5 (.059")

c. The waveguide connector

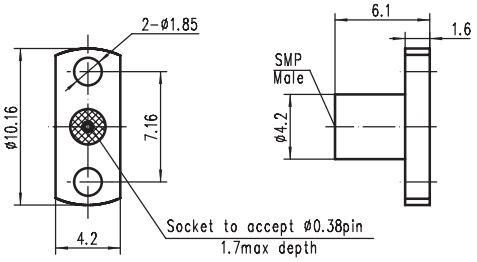


Model	Frequency	D	L
2.4mm-JFD16SG	DC-50GHz	0.86mm	8.75mm

1.3 SMP Connectors

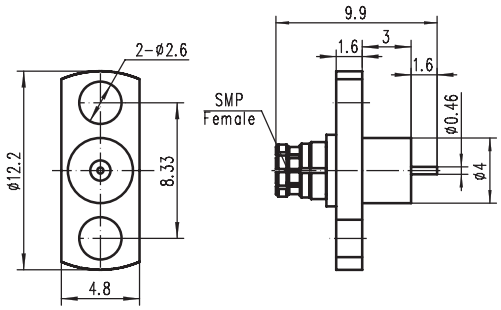
SMP is a small snap-on connector, which has the advantages of small size, light weight and broadband. There are three structures which is full Detent, Limited Detent and Smooth Bore. Transcend SMP model suffix add –F show full detent, -L and –S show limited detent and the smooth bore.

a. Field Replaceables SMP male



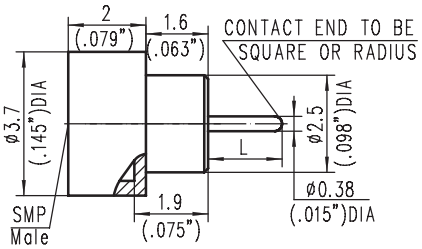
Model	Frequency	D
SMP-JFD3G-F	DC-40GHz	0.38mm

b. Bushing Feed Thru SMP Female



Model	Frequency	D
SMP-KFD3G	DC-40GHz	0.46mm

c. Hermetics SMP



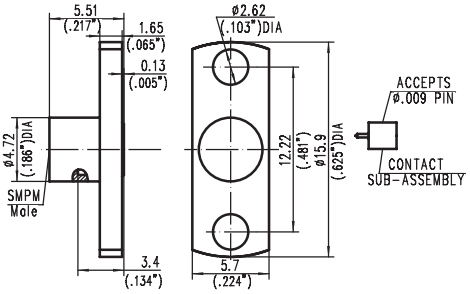
Model	Frequency	D
SMP-JYD-XX-L	DC-40GHz	0.38mm
SMP-JYD-XX-F	DC-40GHz	0.38mm

XX show the length of L, and 1.6mm, 1.8mm are commonly used, it can be customized.

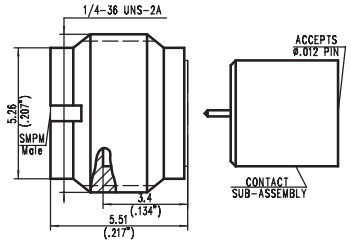
1.4 SMPM Connectors

SMPM, or SSMP, is an ultra-mini snap-on connector similar to SMP, but with a smaller size, light weight, Broadband features. There are two kinds of structures, full detent and smooth bore.

a. Field Replaceables SMPM

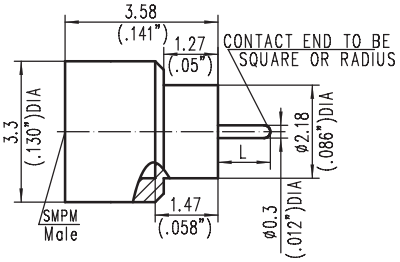


Model	Frequency	D
SMPM-JFD13-F	DC-40GHz	0.23mm



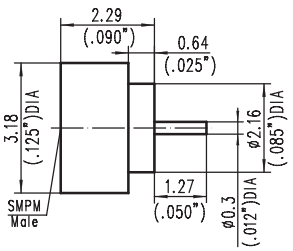
Model	Frequency	D
SMPM-JYD5-F	DC-40GHz	0.23mm

b. Hermetics SMPM



Model	Frequency	D
SMPM-JYD-X-F	DC-40GHz	0.3mm

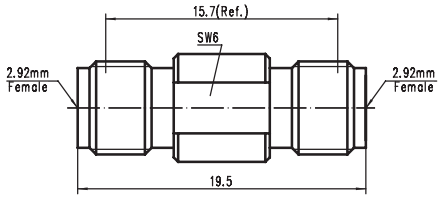
XX show the length of L, and 1.27mm, 1.6mm are commonly used, it can be customized.



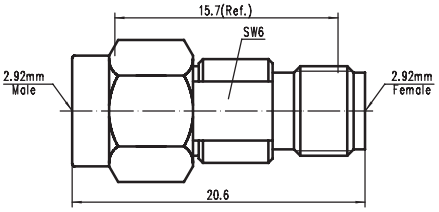
Model	Frequency	D
SMPM-JYD11-X-F	DC-40GHz	0.3mm

2. MMW Adaptors

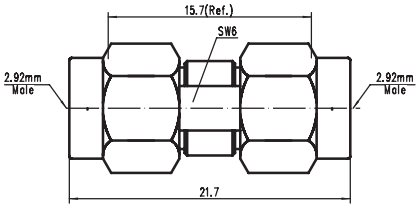
2.1 2.92mm Adatpors



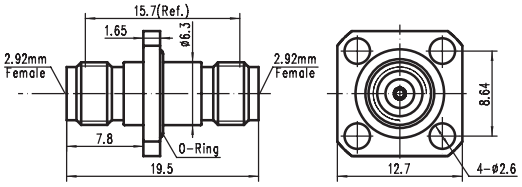
Model	Frequency	VSWR
2.92mm-KKG	DC-43GHz	1.15



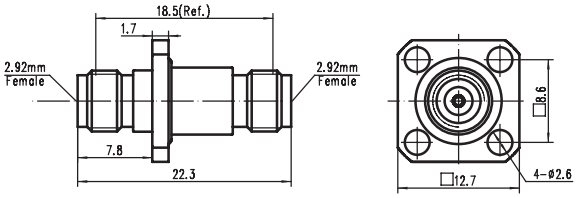
Model	Frequency	VSWR
2.92mm-JKG	DC-43GHz	1.15



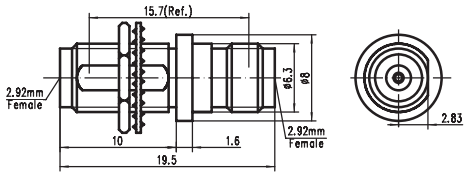
Model	Frequency	VSWR
2.92mm-JJG	DC-43GHz	1.15



Model	Frequency	VSWR
2.92mm-KFKG	DC-43GHz	1.15

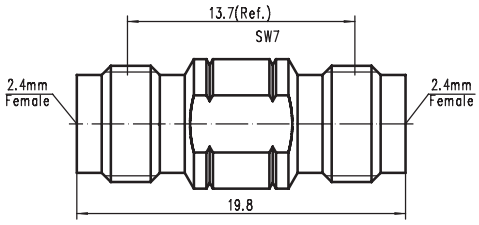


Model	Frequency	VSWR
2.92mm-KFK1G	DC-43GHz	1.15

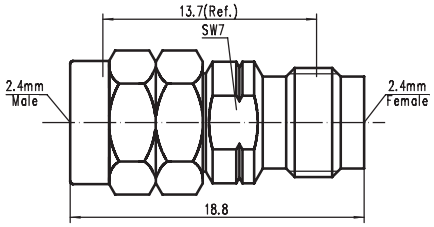


Model	Frequency	VSWR
2.92mm-KYKG	DC-43GHz	1.15

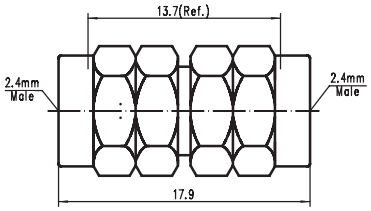
2.4mm Adaptors



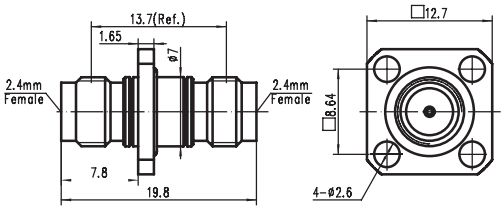
Model	Frequency	VSWR
2.4mm-KKG	DC-50GHz	1.18



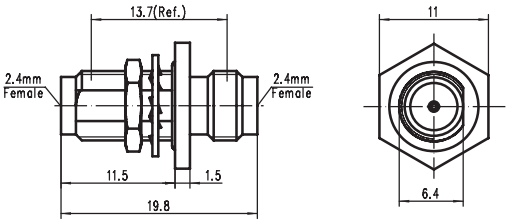
Model	Frequency	VSWR
2.4mm-JKG	DC-50GHz	1.18



Model	Frequency	VSWR
2.4mm-JJG	DC-50GHz	1.18

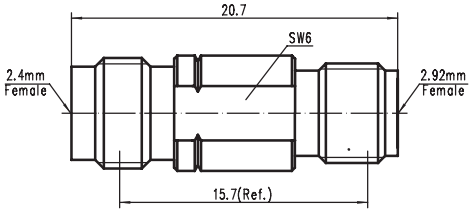


Model	Frequency	VSWR
2.4mm-KFKG	DC-50GHz	1.18

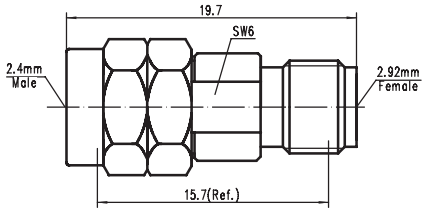


Model	Frequency	VSWR
2.4mm-KYKG	DC-50GHz	1.18

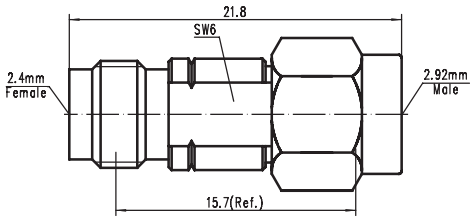
2.4mm to 2.92mm Adaptors



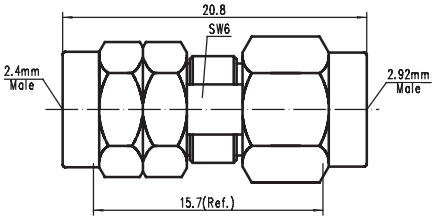
Model	Frequency	VSWR
2.4/2.92mm-KKG	DC-43GHz	1.15



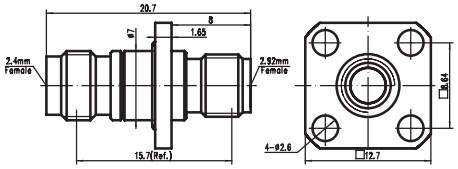
Model	Frequency	VSWR
2.4/2.92mm-KJG	DC-43GHz	1.15



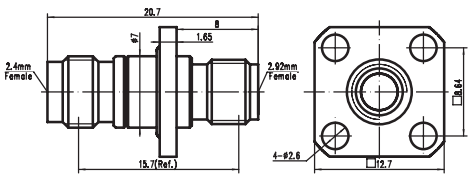
Model	Frequency	VSWR
2.4/2.92mm-JKG	DC-43GHz	1.15



Model	Frequency	VSWR
2.4/2.92mm-JJG	DC-43GHz	1.15

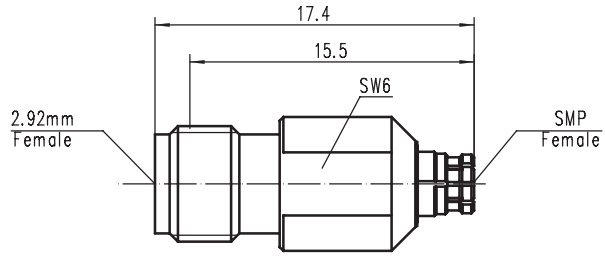


Model	Frequency	VSWR
2.4/2.92mm-KFKG	DC-43GHz	1.15

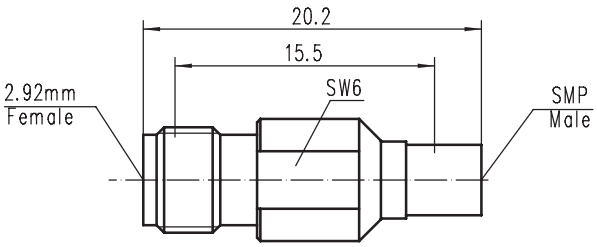


Model	Frequency	VSWR
2.4/2.92mm-KYKG	DC-43GHz	1.15

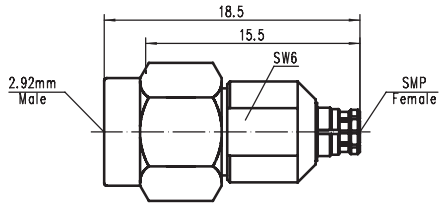
2.92mm to SMP Adaptors



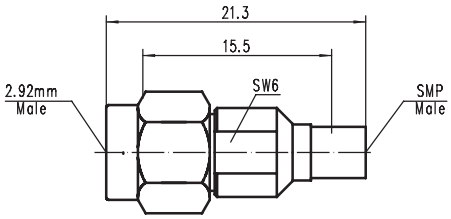
Model	Frequency	VSWR
2.92mm/SMP-KKG	DC-40GHz	1.35



Model	Frequency	VSWR
2.92mm/SMP-KJG	DC-40GHz	1.35

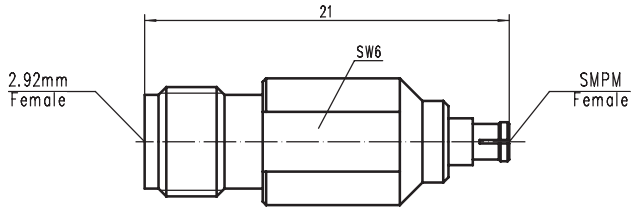


Model	Frequency	VSWR
2.92mm/SMP-JKG	DC-40GHz	1.35

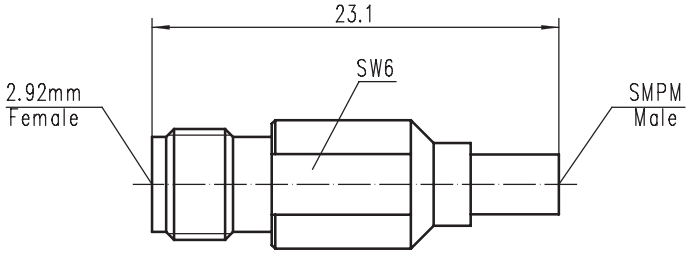


Model	Frequency	VSWR
2.92mm/SMP-JJG	DC-40GHz	1.35

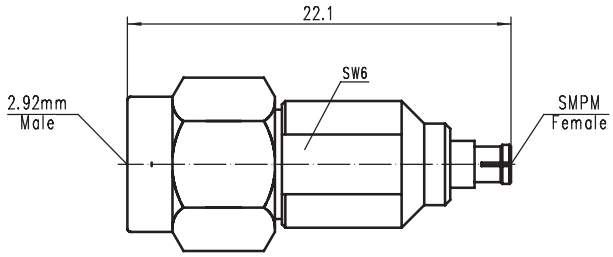
2.92mm to SMPM Adaptors



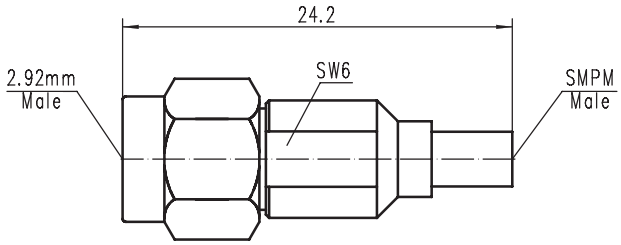
Model	Frequency	VSWR
2.92mm/SMPM-KKG	DC-43GHz	1.35



Model	Frequency	VSWR
2.92mm/SMPM-KJG	DC-43GHz	1.35



Model	Frequency	VSWR
2.92mm/SMPM-JKG	DC-43GHz	1.35



Model	Frequency	VSWR
2.92mm/SMPM-JJG	DC-43GHz	1.35

3. MMW Cable Assemblies

3.1 VNA Test Cables

This series of cables is specially used to connect the input and output ports of the vector network analyzer.
There are interfaces such as NMD 3.5mm, NMD2.4mm and NMD 1.85mm, the frequency is Respectively 26.5ghz, 50GHz, 67GHz. Meet high precision laboratory and production testing.
Model: V50-NMD24mNmD24m-25 ', Show the test cable of 50GHz.

3.2 PT Series Test Cables

This series of cables is specially used to connect the VNA, SP,and signal Source etc. equipments. There are 2.92, 2.4mm and 1.85mm etc. interface, the frequency is Respectively 43GHz, 50GHz, 67GHz. Meet high precision laboratory and production testing.
Model: V43-29m29m-610, Show the test cable of 43GHz, 610mm.

3.3 PS Series Test Cables

This series of cables can be used for various tests, with interfaces such as 2.92mm and 2.4mm. It reaches 43GHz and 50GHz.
Model no. : PS147A-29m29m-xxxx, up to 43GHz, length optional.
It is characterized by softness, durability, low resilience and cost advantages.

3.4 Phase-Q Series CA

This series of cable assemblies are characterized by precision, excellent stability in amplitude, phase, and ultra low loss. Excellent consistency, repeatability and comprehensive performance are guaranteed. Connectors such as 2.92mm, 2.4mm, and 1.85mm can be connected.
Model no. : P07-29m29m-xxxx, up to 43GHz, length optional
P07-29m29m-xxxnG, up to 43GHz, Short connectors
P07-24m24m-xxxx, up to 50GHz

3.5 S-flex Series CA

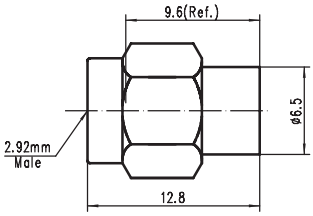
This series of cable assemblies are characterized by precision, excellent stability in amplitude, phase, and low loss. Excellent consistency, repeatability and comprehensive performance are guaranteed. Connectors such as 2.92mm, 2.4mm can be connected.
Model: BLU50-24m24f-1000, show DC-50GHz and 1m cable length
BLU360A-29m29m-500, up to 43GHz, 0.5m cable assemblies,
BLU147A-29m29m-500, up to 43GHz, 0.5m cable assemblies.

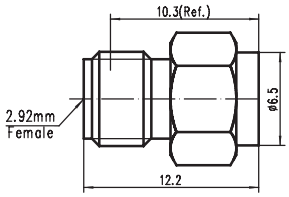
3.6 SS Series CA

It is a flexible cable which can replace semi-rigid and semi-flexible cable. Matching connectors include SMP, SMPM, 2.92mm, 2.4mm etc. it's suitable for connection and testing of 5G systems and mobile phones, etc.
Model : SS550-24m24f-300nG, Show DC-50GHz, 0.3m short connector;
SS543-29m29f-300nG, up to 43GHz, 0.3m short connector.

4. Milimeter Terminations

4.1 2.92mm Terminations

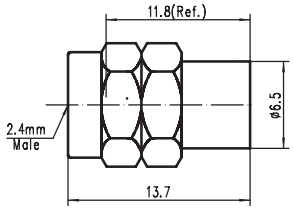




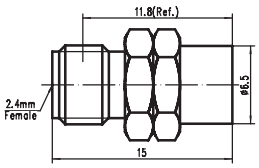
Model	Frequency	VSWR	Power
TP40-29m-0.5WG	DC-40GHz	1.20	0.5W
TP40-29m-1WG	DC-40GHz	1.25	1W
TP43-29m-0.5WG	DC-43GHz	1.30	0.5W
TP43-29m-1WG	DC-43GHz	1.35	1W

Model	Frequency	VSWR	Power
TP40-29f-0.5WG	DC-40GHz	1.20	0.5W
TP40-29f-1WG	DC-40GHz	1.25	1W
TP43-29f-0.5WG	DC-43GHz	1.30	0.5W
TP43-29f-1WG	DC-43GHz	1.35	1W

4.2 2.4mm Terminations



Model	Frequency	VSWR	Power
TP40-24m-0.5WG	DC-40GHz	1.25	0.5W
TP40-24m-1WG	DC-40GHz	1.30	1W
TP43-24m-0.5WG	DC-43GHz	1.30	0.5W
TP43-24m-1WG	DC-43GHz	1.35	1W
TP50-24m-0.5WHG	DC-50GHz	1.35	0.5W
TP50-24m-1WHG	DC-50GHz	1.40	1W



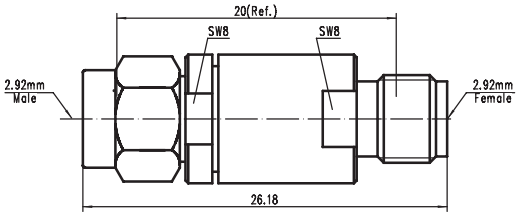
Model	Frequency	VSWR	Power
TP40-24f-0.5WG	DC-40GHz	1.25	0.5W
TP40-24f-1WG	DC-40GHz	1.30	1W
TP43-24f-0.5WG	DC-43GHz	1.30	0.5W
TP43-24f-1WG	DC-43GHz	1.35	1W
TP50-24f-0.5WHG	DC-50GHz	1.35	0.5W
TP50-24f-1WHG	DC-50GHz	1.40	1W

5. Milimeter Wave DC BLOCK

5.1 2.92mm DC Block **Model：BLK43-292-JKG**

Frequency range：0.2-43GHz

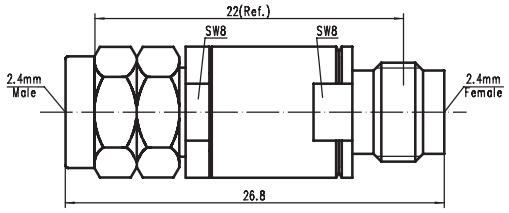
V S W R：≤1.35 0.2-43GHz



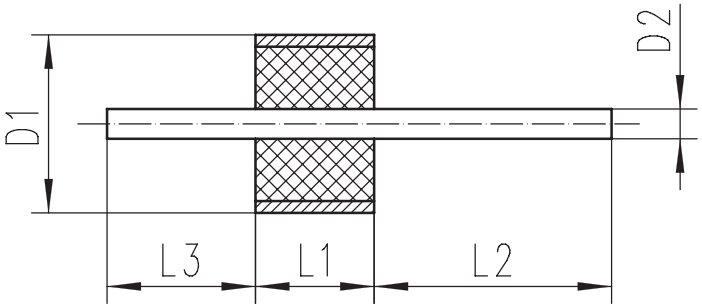
5.2 2.4mm DC Block **Model：BLK43-24-JKG**

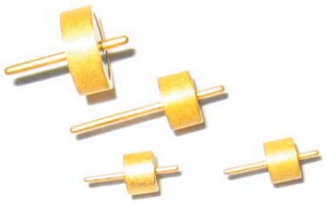
Frequency range：0.2-43GHz

V S W R：≤1.35 0.2-43GHz



6.MMW Hermetic Seal





1. Plating: Gold meet MIL-G-45204(0.5um min.)over(2um min.) electroless Ni.
2. Impeadance: 50 ohms
3. All size unit is millimeter, and the tolerance is +0/-0.127.

Model No.	D1	D2	L1	L2	L3
171423	1.727	0.23	1.397	0.762	3.048
191430	1.930	0.30	1.397	2.032	1.016
251638	2.489	0.38	1.575	4.572	1.270
G 201430 -4.4/1.5	2.0	0.3	1.4	1.5	1.5
G 201430 -8/4.6	2.0	0.3	1.4	2	4.6
G 201630 -3.9/0.4	2.0	0.3	1.6	1.9	0.4
G 201630 -8/4.6	2.0	0.3	1.6	1.8	4.6
G 251638 -8/4.6	2.5	0.38	1.6	1.8	4.6
G 251638 -12/2	2.5	0.38	1.6	8.4	2
G 252038 -9/2	2.5	0.38	2	5	2
G 253038 -12/2.2	2.5	0.38	3	6.8	2.2