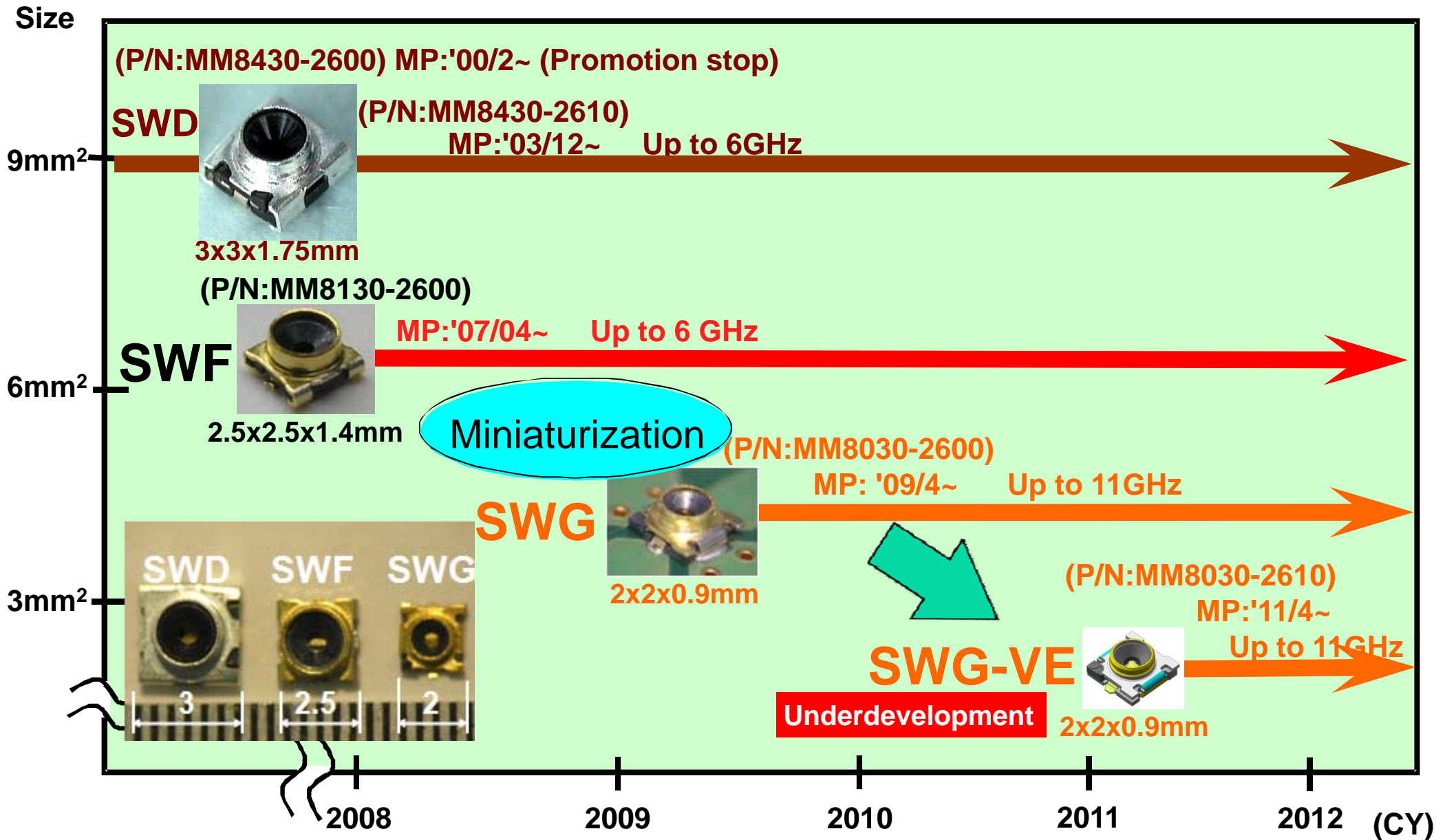


RF Test Switch SWG-VE Series



Roadmap for Switch Connector

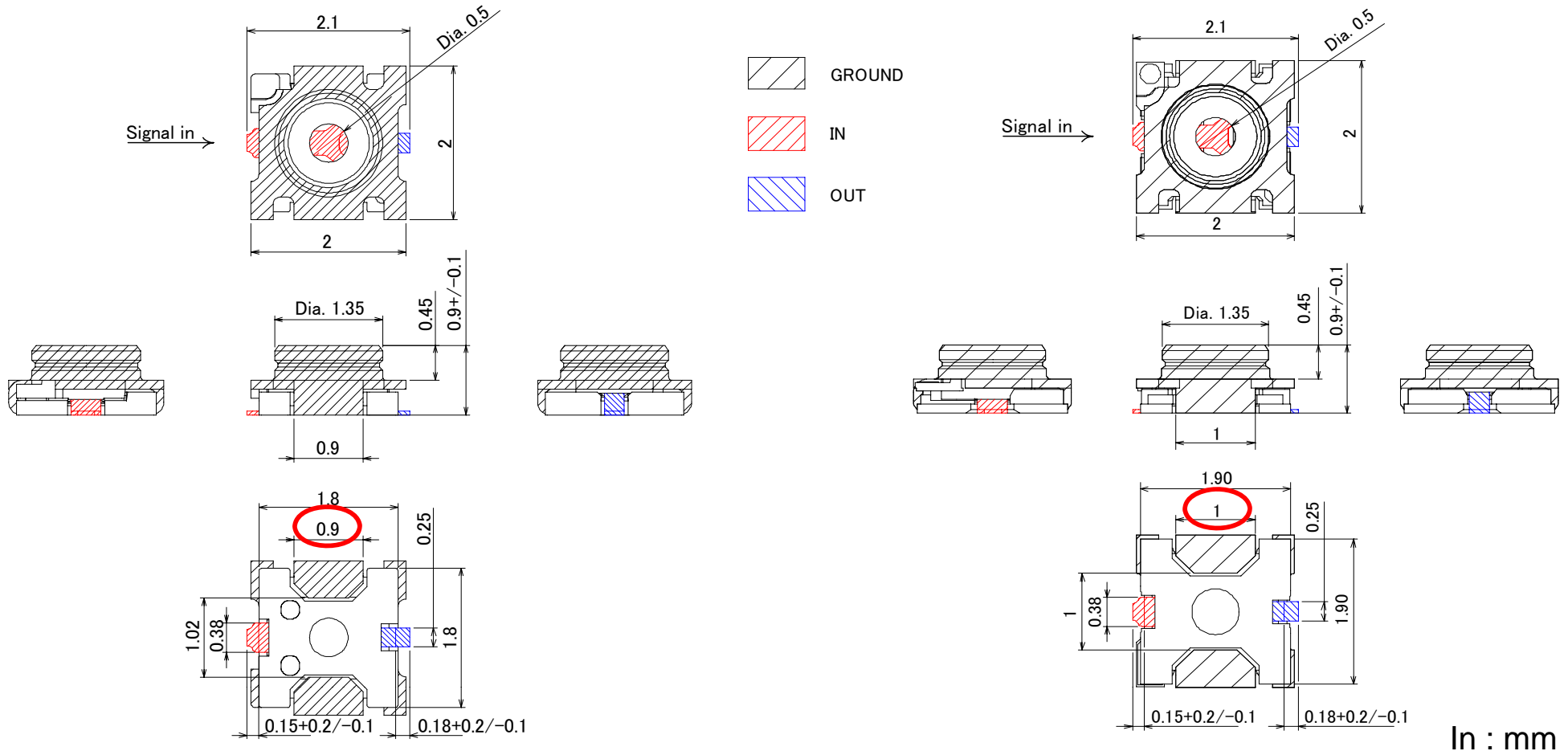


SWG-VE : MM8030-2610

SWG and SWG-VE Comparison

SWG : MM8030-2600

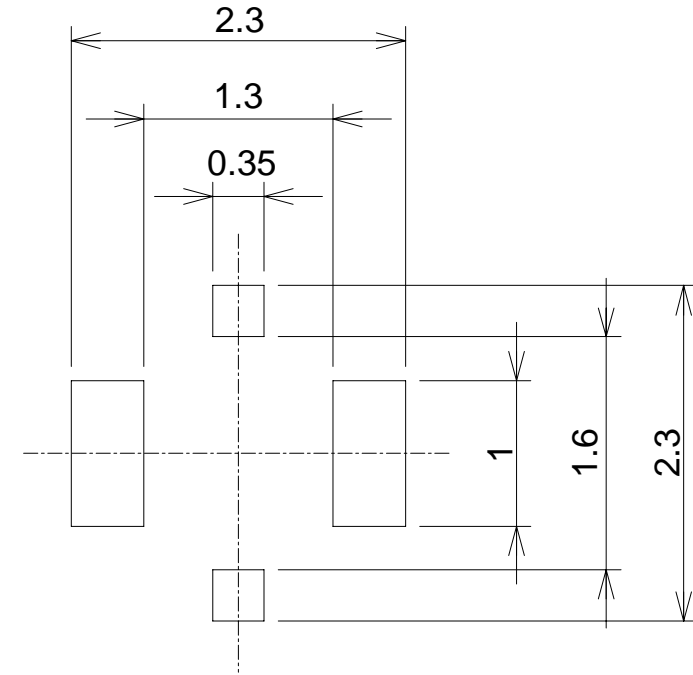
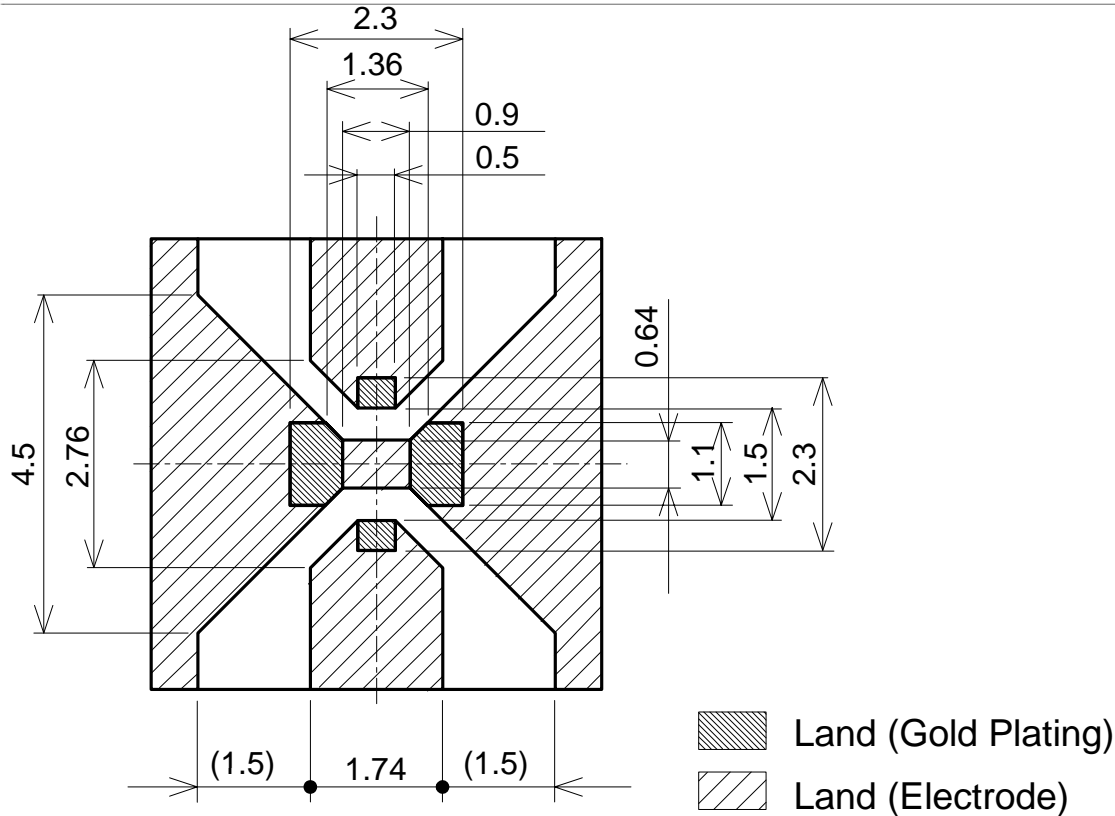
SWG-VE : MM8030-2610



- Same size : 2 x 2 x 0.9mm
- Outer conduct size : 0.9mm → 1.0mm (Adhered force of electrode terminal UP)

SWG-VE:MM8030-2610

Land Pattern and Stencil Mask Size



Thickness is 0.12mm

In : mm

- The material of PCB is the epoxy resin of glass fabric base. ($\epsilon_r=4.8$)
- Thickness is 1.0mm.
- The solder resist should be printed except for the land on the PCB.

- There is the possibility to have the contact failure by solder shifting into contact point, if the excess solder is used by non standard stencil mask pattern.

Standard land pattern

Standard stencil mask size

SWG-VE pattern is same as SWG.

SWG-VE:MM8030-2610

Specification

Item		Specification
Size W x D x H (mm)		2.0x2.0x0.9
Land Size (mm)		2.3x2.3
Frequency Rating		up to 11GHz
Impedance		50 ohm
Power Rating		2W max.
V.S.W.R.	to 3GHz	1.2 max.
	3 to 6GHz	1.3 max.
	6 to 11GHz	1.5 max.
Insertion Loss (at ON switch)	to 3GHz	0.1dB max.
	3 to 6GHz	0.2dB max.
	6 to 11GHz	0.5dB max.
Isolation (at OFF switch)	to 3GHz	20dB min.
	3 to 6GHz	15dB min.
	6 to 11GHz	10dB min.
Durability		100 cycles

SWG-VE specification is same as SWG.

SWG-VE Series

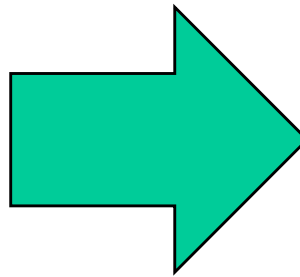
Measurement probe

Automatic Probe : MM126314



With floating function

SWD/SWF/SWG
common type



Underdevelopment

VE version
Target S/P : 1000JPY

Manual Probe : MXHQ87WA3000

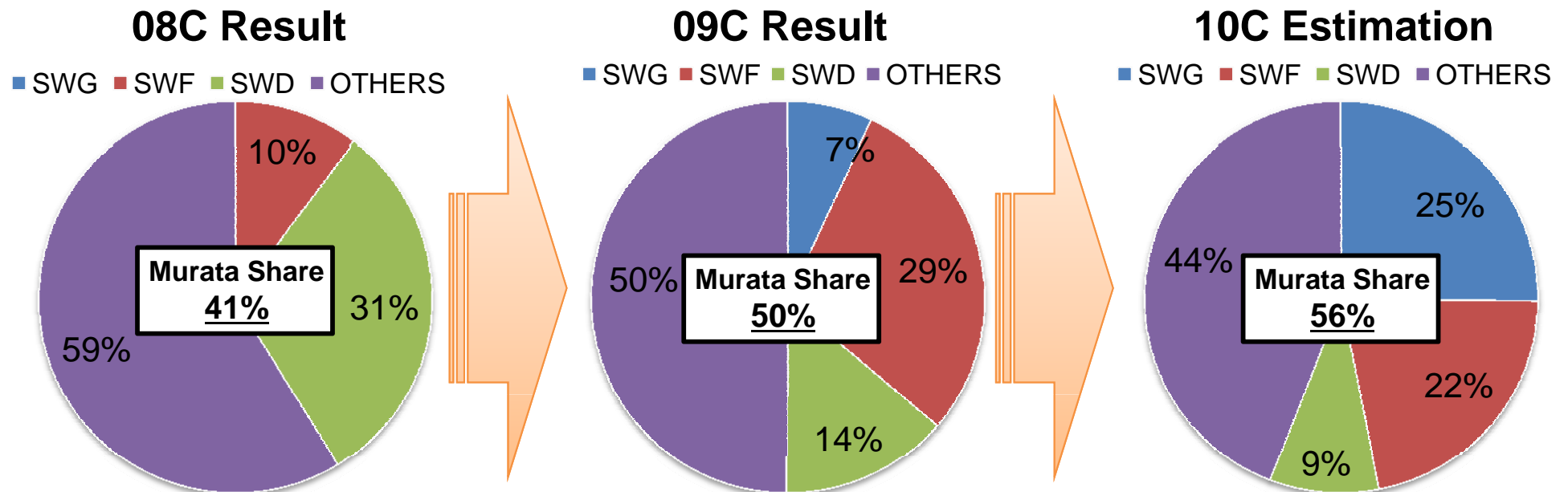


With cable type
(Standard)

Thank you very much!

Appendix

Market Share

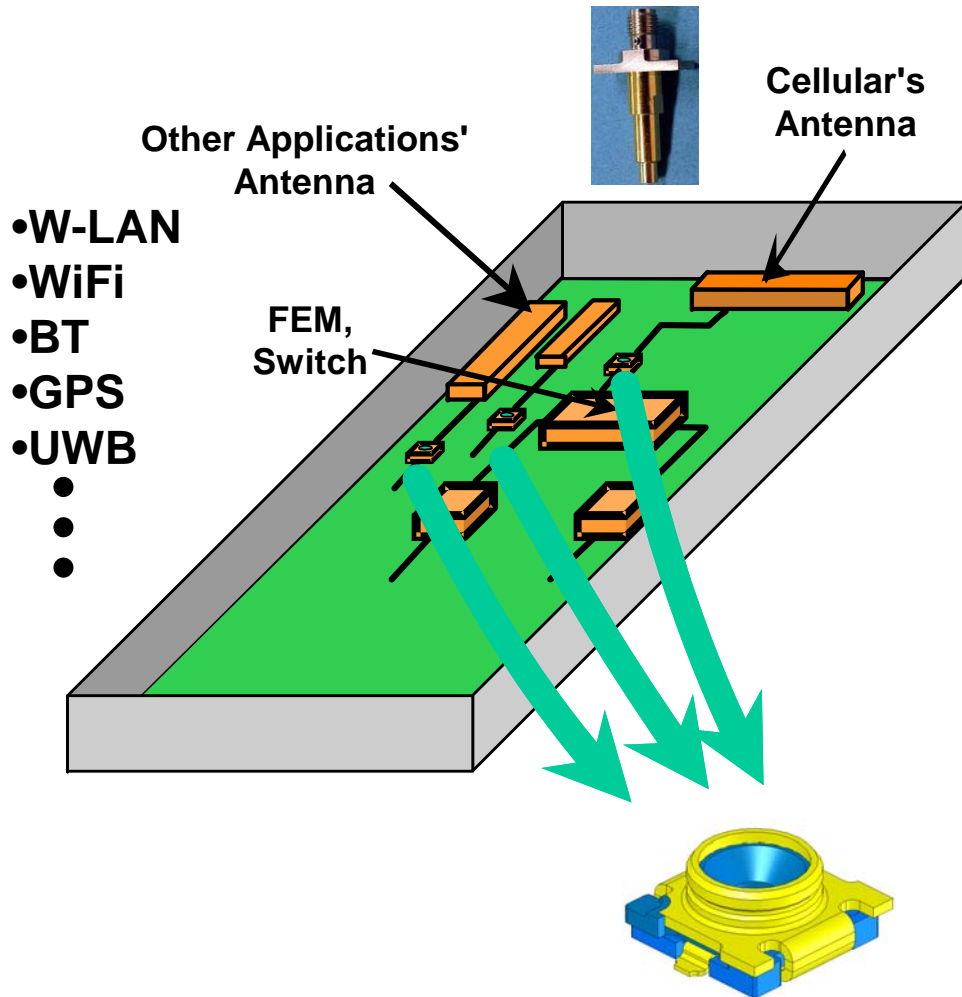


Global No.1 RF-test Switch Supplier

- Total sales volume: Over 2.5 billion (since 2000)
- SWG type will be a main item in 2010C.

SWG Series

Feature



- Suitable for inspection purpose
- 2 x 2mm, 0.9mm height
- **World smallest**
- Excellent RF performance.
 - **Insertion Loss: 0.1dB max. (up to 3GHz)**
 - **VSWR: 1.2 max. (up to 3GHz)**
- High frequency available: **up to 11 GHz**
- High durability: **100 cycles mating**
- Simple measurement mechanism
- Reliable conductivity
 - **Double contact mechanism**
 - **Simple Beam**
- Less flux penetration design
- Probe selection
 - **Automatic probe and Manual probe**

Contribute High Density Design!!

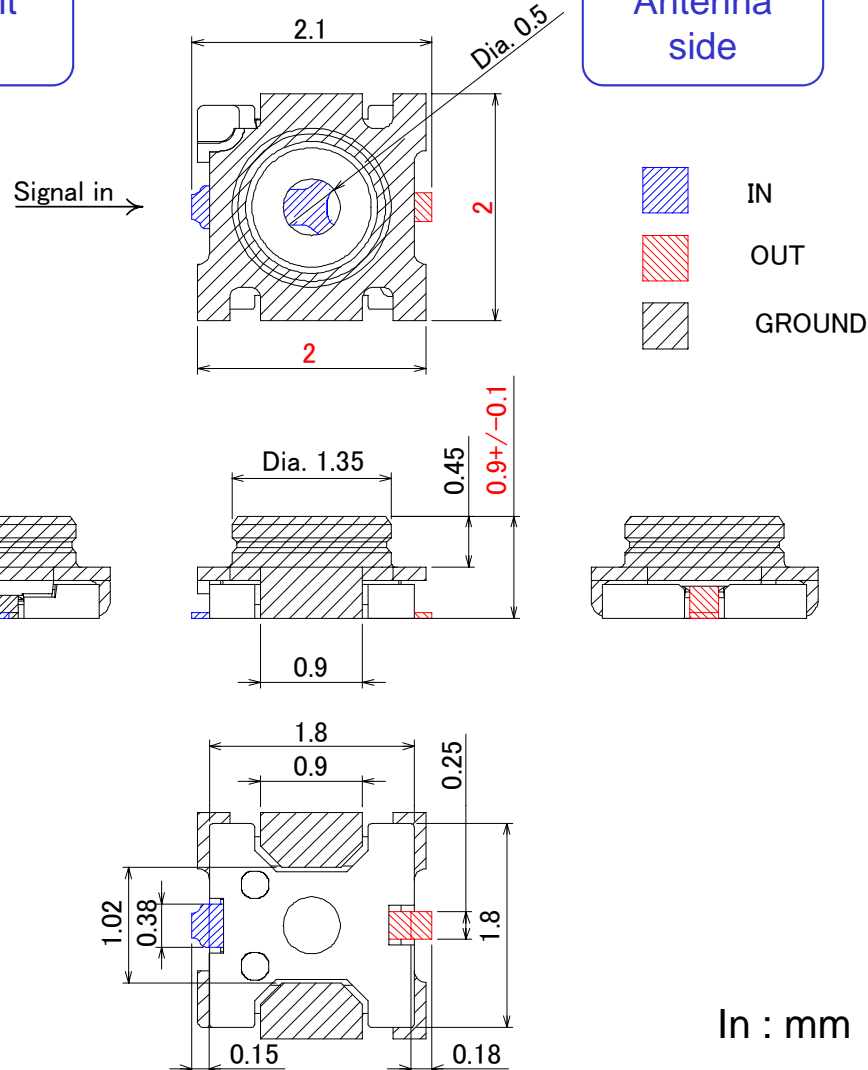
SWG Series

MM8030-2600RK0: Specification

Dimension

RF circuit side

Antenna side

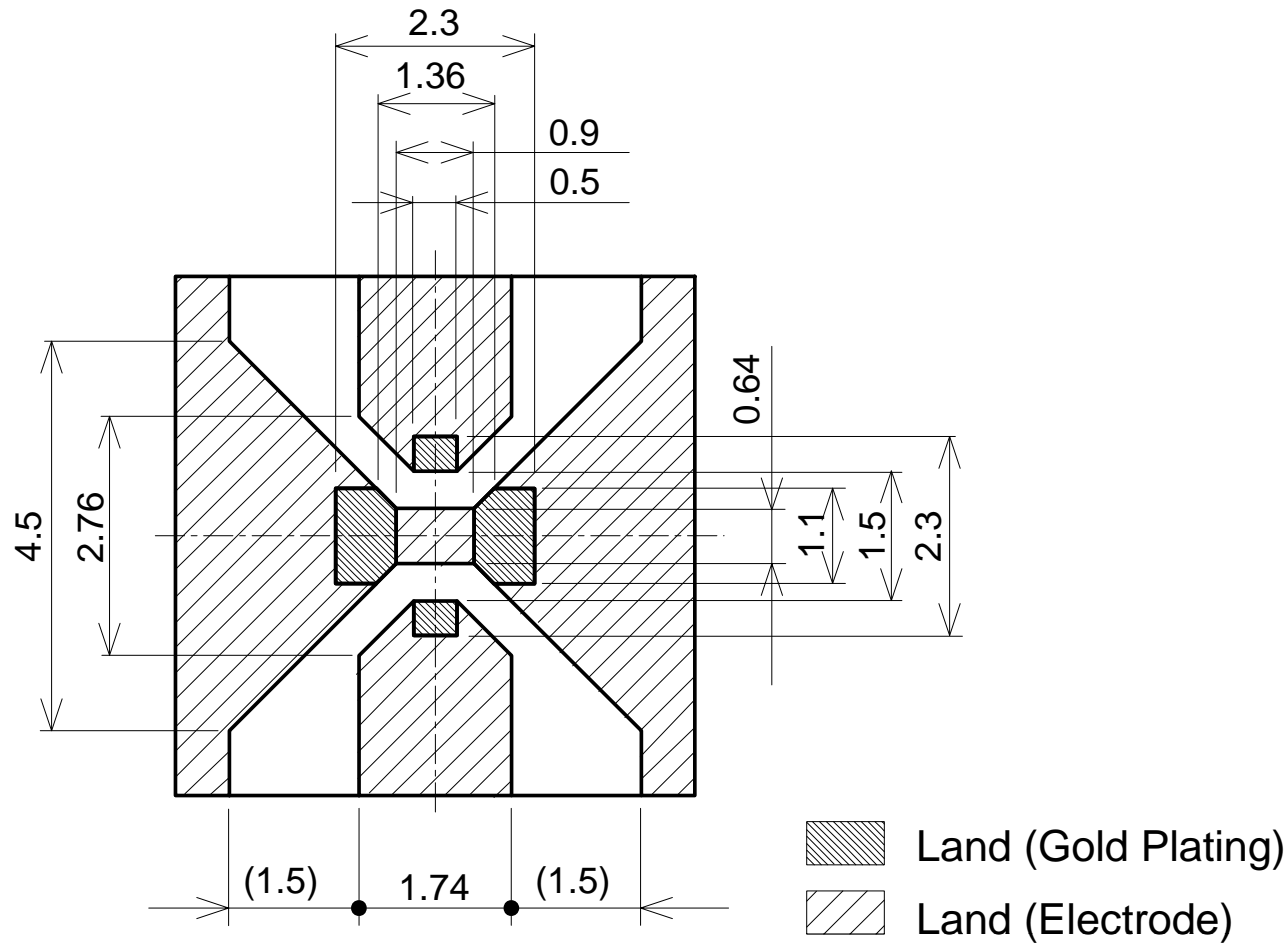


Performance

Item	Specification	
Size W x D x H (mm)	2.0x2.0x0.9	
Land Size (mm)	2.3x2.3	
Frequency Rating	up to 11GHz	
Impedance	50 ohm	
Power Rating	2W max.	
V.S.W.R.	to 3GHz	1.2 max.
	3 to 6GHz	1.3 max.
	6 to 11GHz	1.5 max.
Insertion Loss (at ON switch)	to 3GHz	0.1dB max.
	3 to 6GHz	0.2dB max.
	6 to 11GHz	0.5dB max.
Isolation (at OFF switch)	to 3GHz	20dB min.
	3 to 6GHz	15dB min.
	6 to 11GHz	10dB min.
Durability	100 cycles	

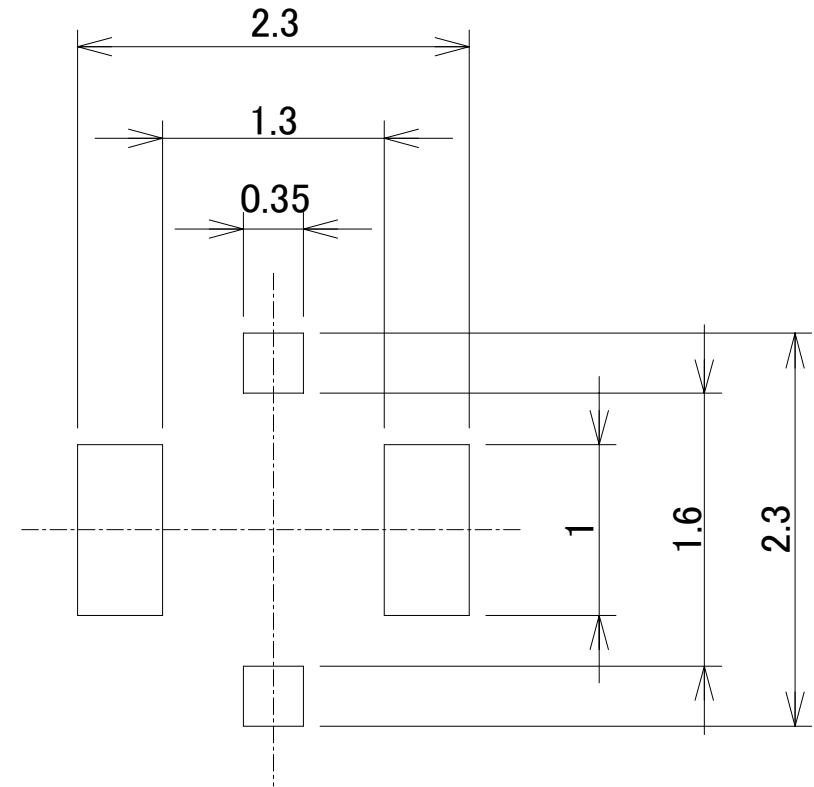
SWG Series

MM8030-2600RK0: Land Pattern and Stencil Mask Size



- The material of P.C.B. is the epoxy resin of glass fabric base. (Dielectric constant = 4.8)
- Thickness is 1.0mm
- The solder resist should be printed except for the land on the PCB

Standard land pattern



Thickness is 0.12mm

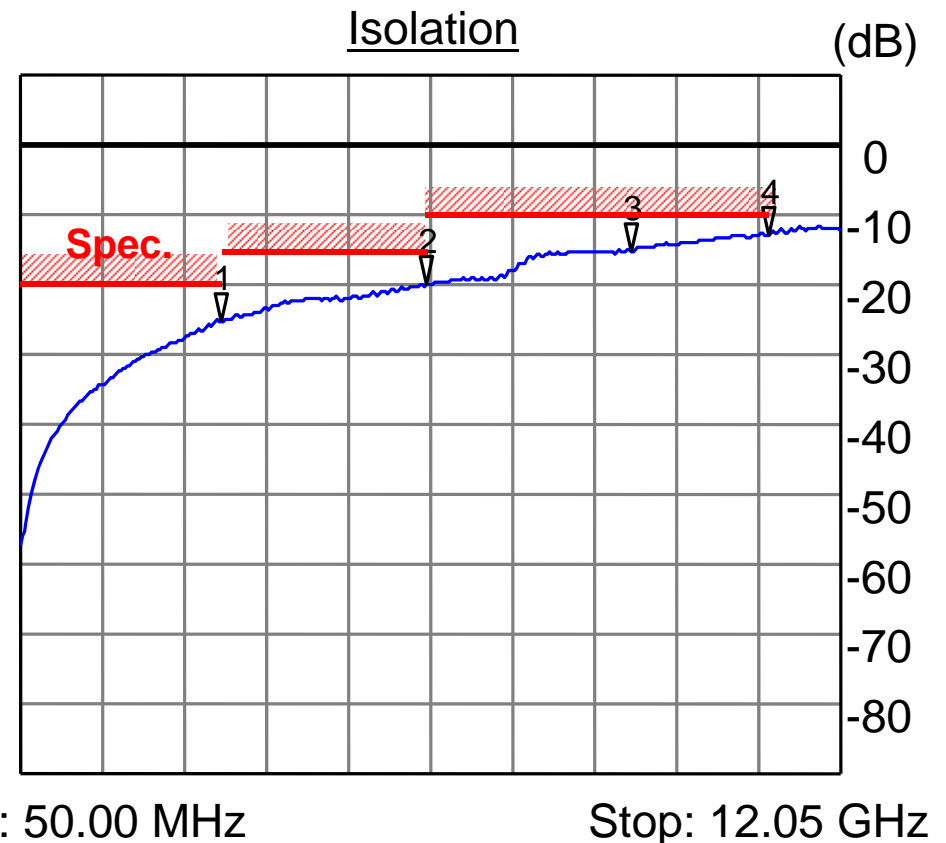
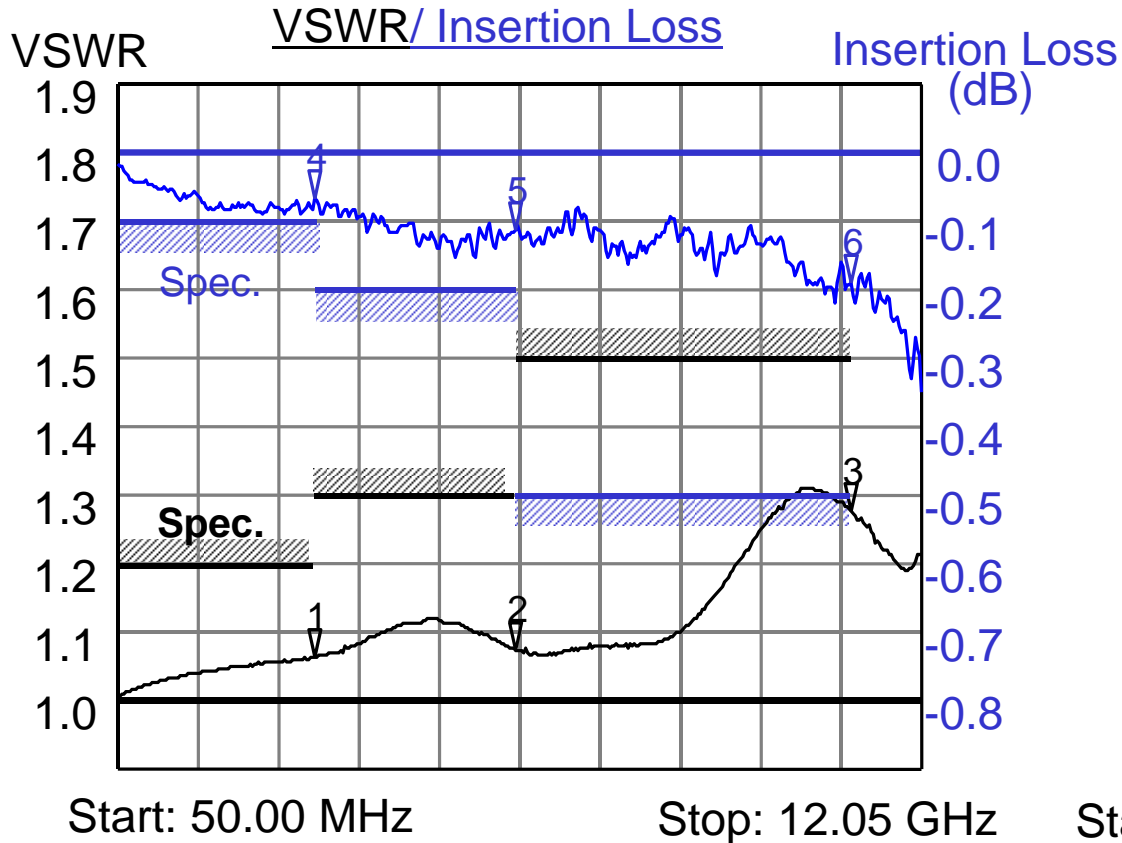
Standard stencil mask size

In : mm

SWG Series



MM8030-2600RK0: VSWR, Insertion Loss Data and Isolation

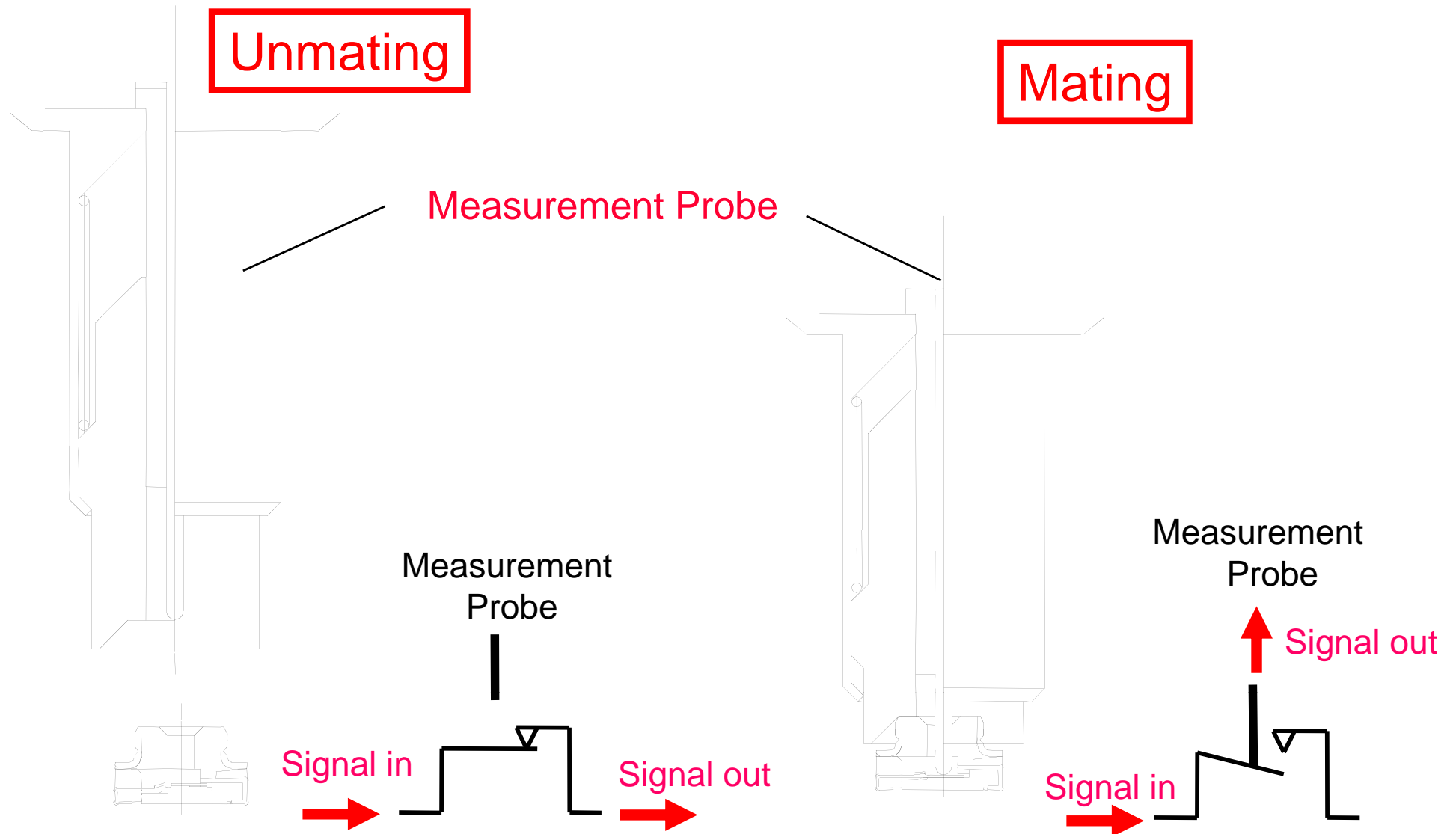


VSWR		Insertion Loss	
1	3 GHz: 1.06	4	3 GHz: -0.07 dB
2	6 GHz: 1.07	5	6 GHz: -0.11 dB
3	11 GHz: 1.28	6	11 GHz: -0.19 dB

1	3 GHz: -25.4 dB	3	9 GHz: -15.2 dB
2	6 GHz: -20.1 dB	4	11 GHz: -12.9 dB

SWG Series

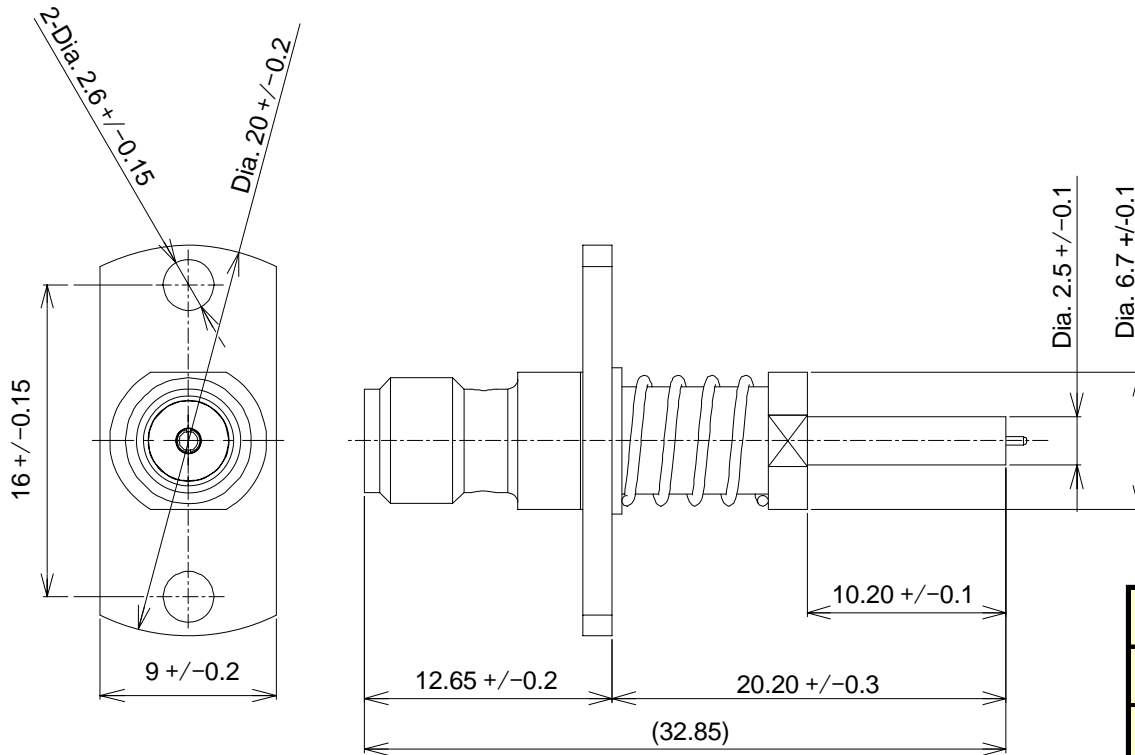
Switch mechanism



Simple measurement mechanism !!

SWG Series

Automatic Probe: MM126314



Performance

Item	Specification	
Frequency Rating	Up to 11GHz	
Impedance	50 ohm	
Voltage Rating	250V r.m.s.	
VSWR	to 3GHz	1.6 max.
	3 to 6GHz	1.7 max.
	6 to 11GHz	2.1 max.
Insertion Loss	to 3GHz	0.4dB max.
	3 to 6GHz	0.85dB max.
	6 to 11GHz	1.4dB max.
Durability	1000000 cycles	

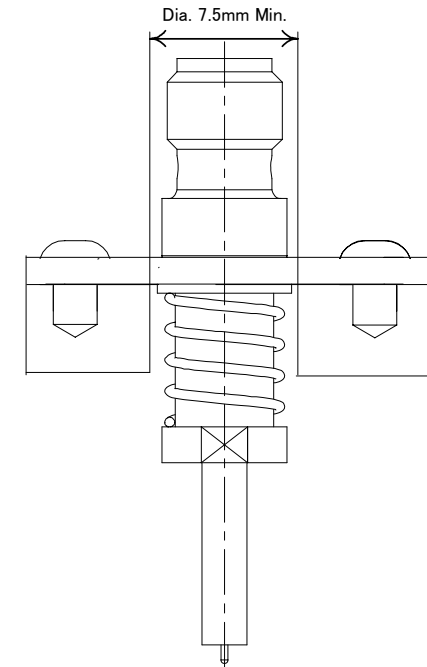
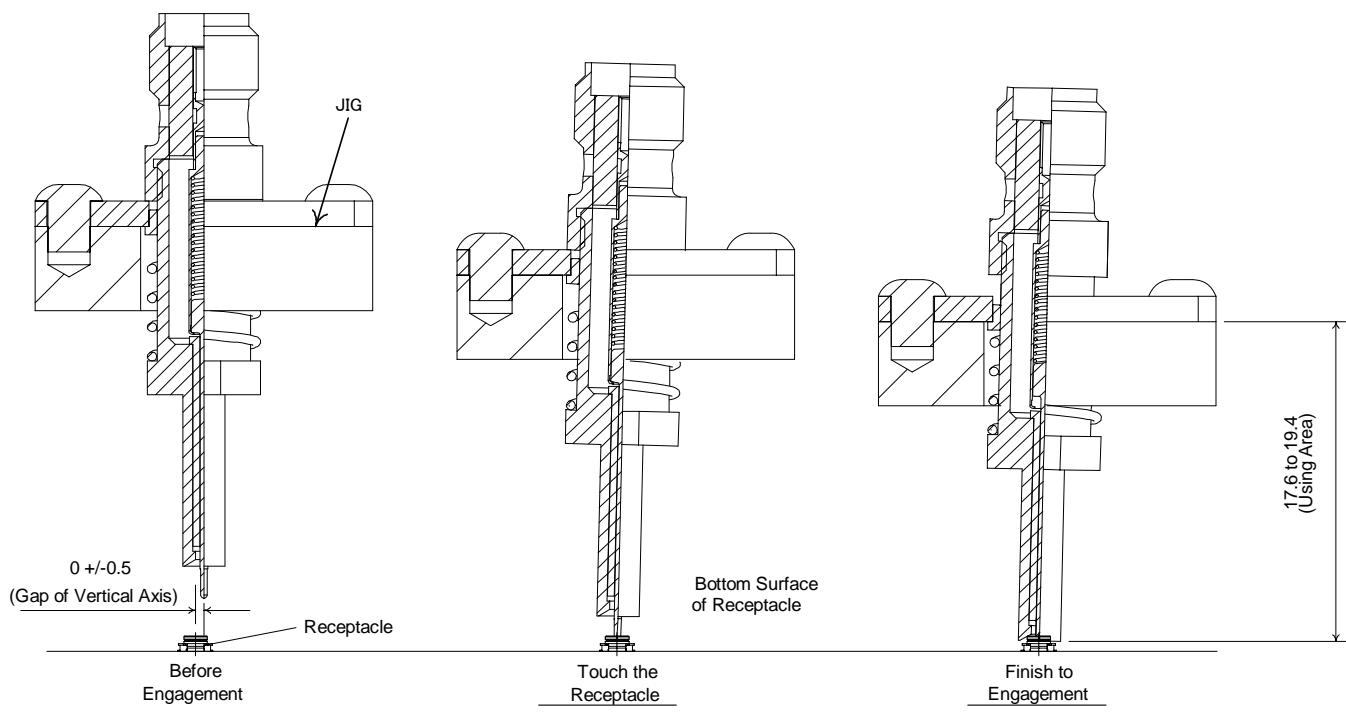
In : mm

SWD/SWF/SWG
common type

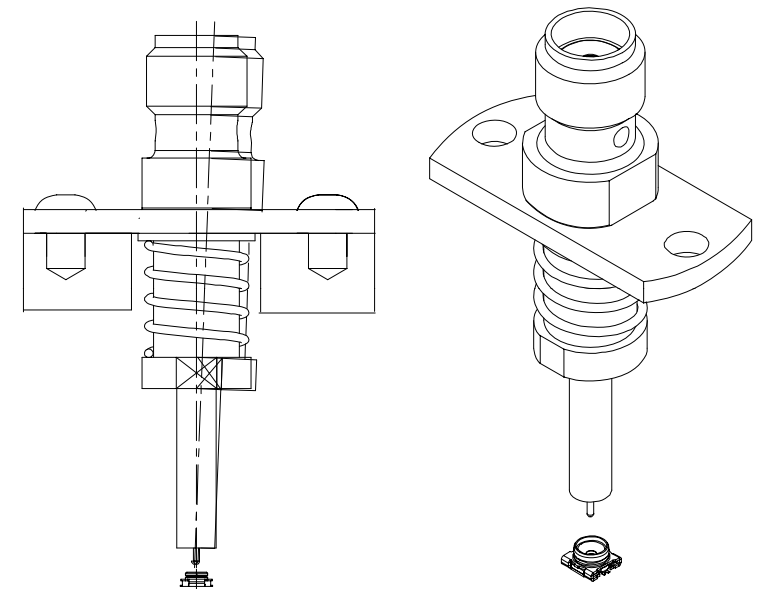
With floating function

SWG Series

Probe Instruction: MM126314

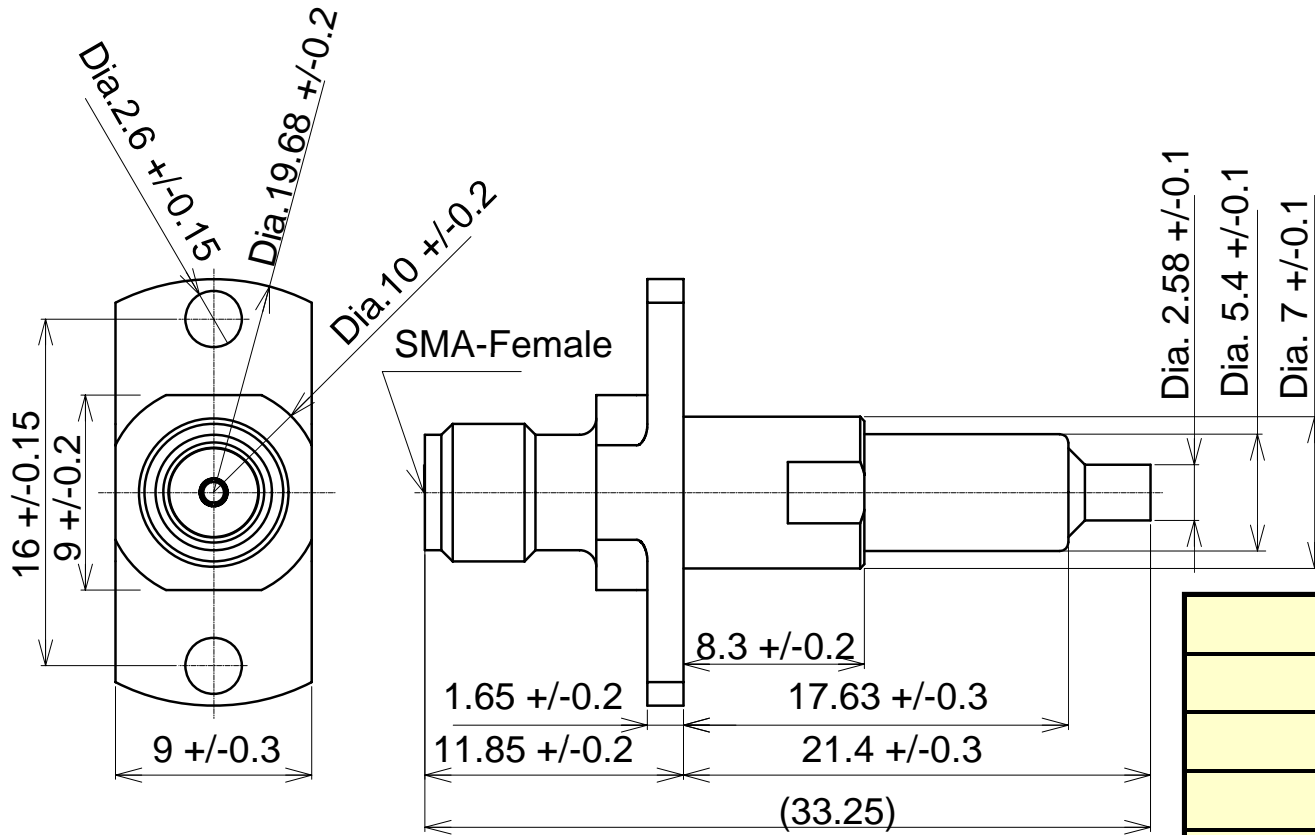


- To get stable RF performance, the engagement strokes from the flange to the tip of probe is 17.6mm to 19.4mm.
- To have the stable measurement, slant angle must be +/-2degree.



SWG Series

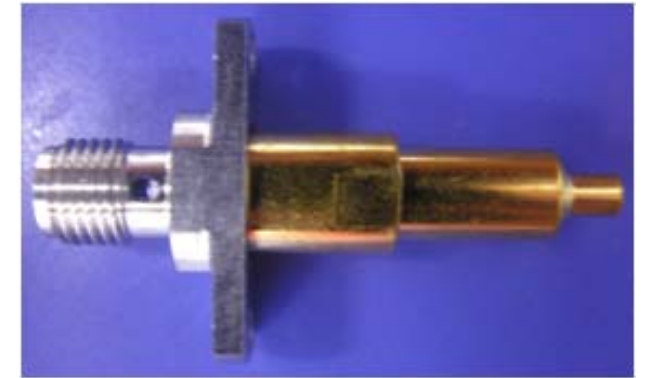
Automatic Probe: MM126310



In : mm

**High durability type
(Standard)**

Without floating function



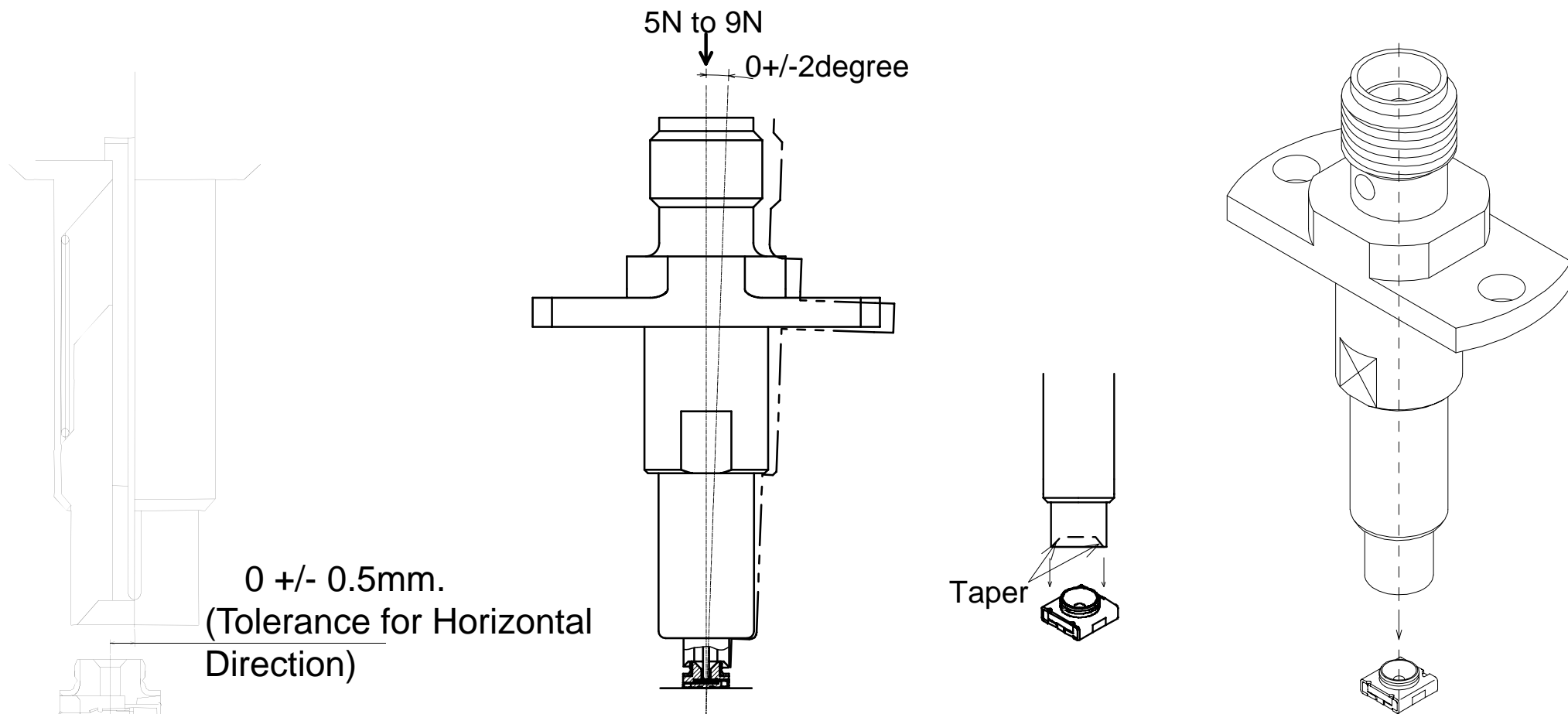
Adobe Acrobat 7.0
Document

Performance

Item	Specification	
Frequency Rating	Up to 11GHz	
Impeadance	50 ohm	
Voltage Rating	250V r.m.s.	
VSWR	to 3GHz	1.6 max.
	3 to 6GHz	1.8 max.
	6 to 11GHz	2.2 max.
Insertion Loss	to 3GHz	0.6dB max.
	3 to 6GHz	1.0dB max.
	6 to 11GHz	2.0dB max.
Durability	1000000 cycles	

SWG Series

Probe Instruction: MM126310



- Floating mechanism, shift to horizontal direction, shall be installed into Jig if there is tolerance between probe and connector.
- 0 +/- 0.5mm tolerance can be utilized by using the taper, located at tip of probe, if the floating mechanism is set to the Jig.
- To get stable RF performance, pressure force shall be 5-9N.

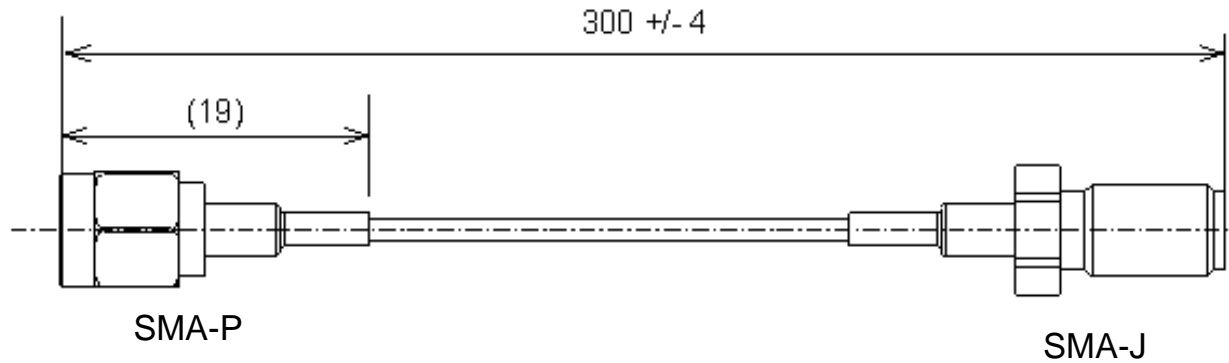
SWG Series

Cable for Probe: MXHQ87HR3000/MXHR87HR3000

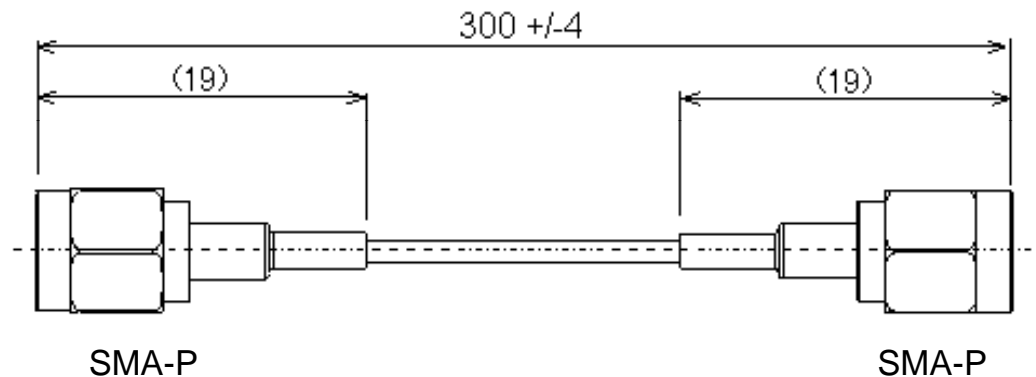


MXHR87HR3000

MXHQ87HR3000



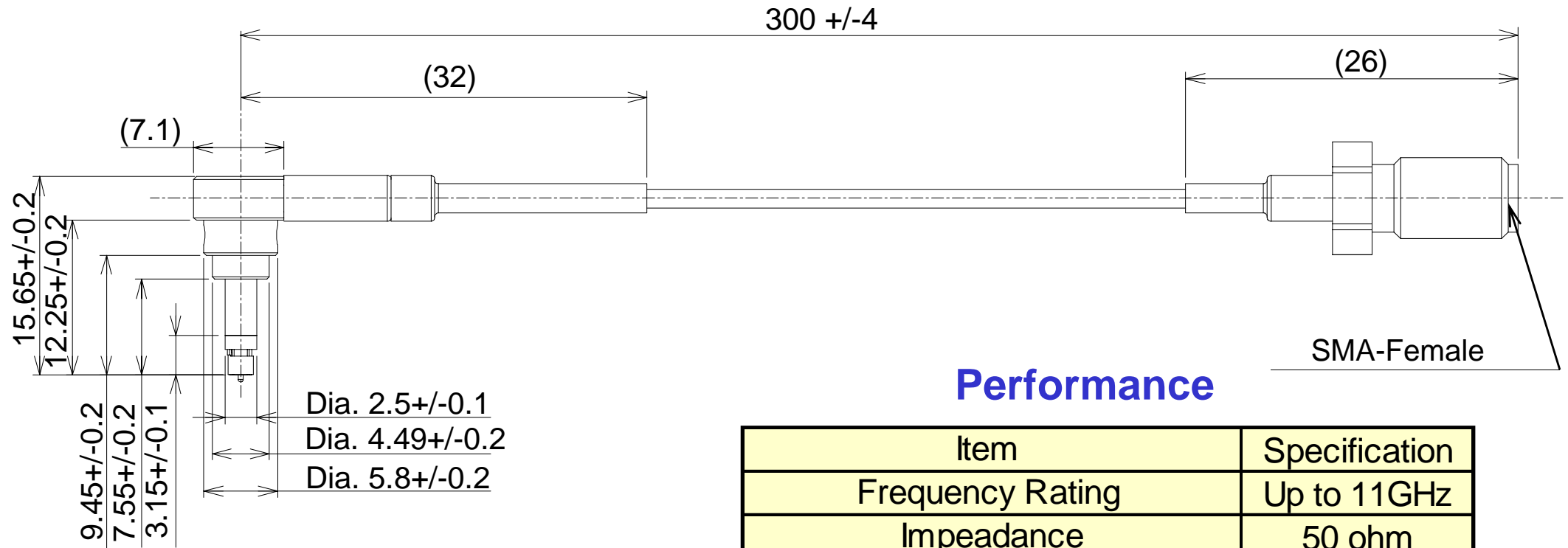
MXHR87HR3000



Scale:Free
In mm

SWG Series

Manual Probe: MXHQ87WA3000



In : mm



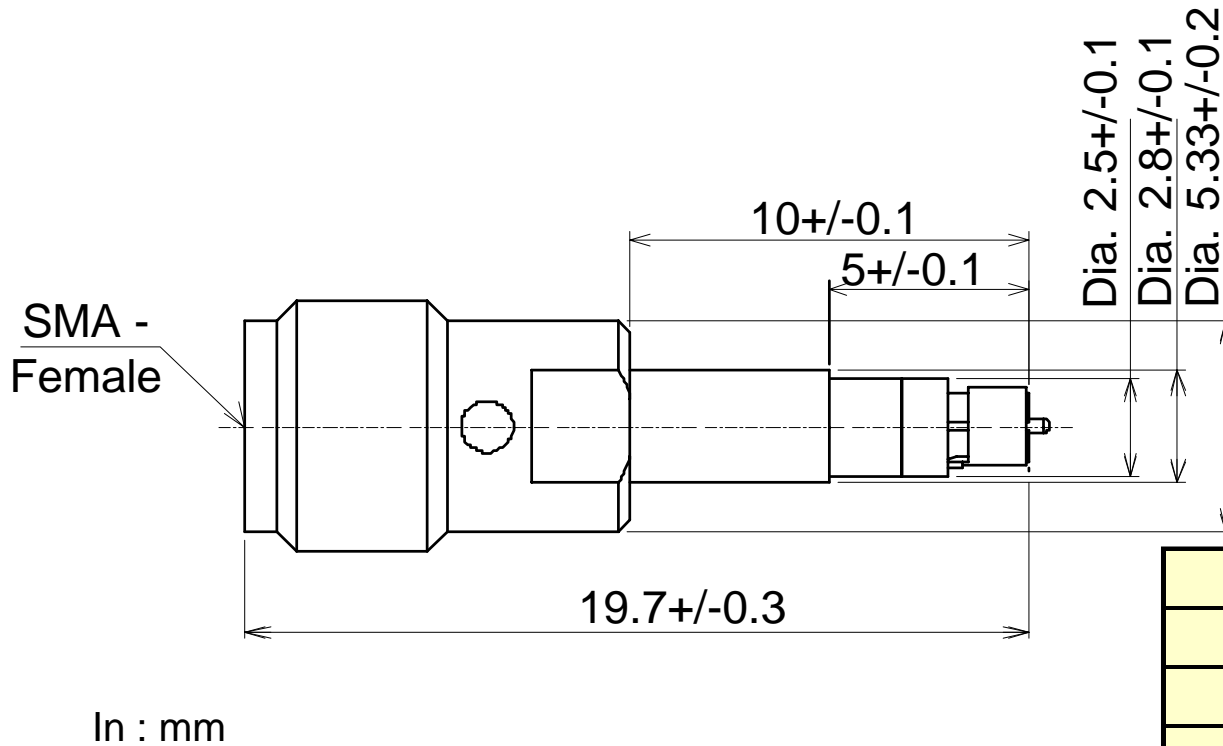
**With cable type
(Standard)**

Performance

Item	Specification	
Frequency Rating	Up to 11GHz	
Impedance	50 ohm	
Voltage Rating	250V r.m.s.	
VSWR	to 3GHz	1.5 max.
	3 to 6GHz	1.8 max.
	6 to 11GHz	3.5 max.
Insertion Loss	to 3GHz	1.5dB max.
	3 to 6GHz	2.5dB max.
	6 to 11GHz	4.5dB max.
Durability	2000 cycles	

SWG Series

Manual Probe: MM126311



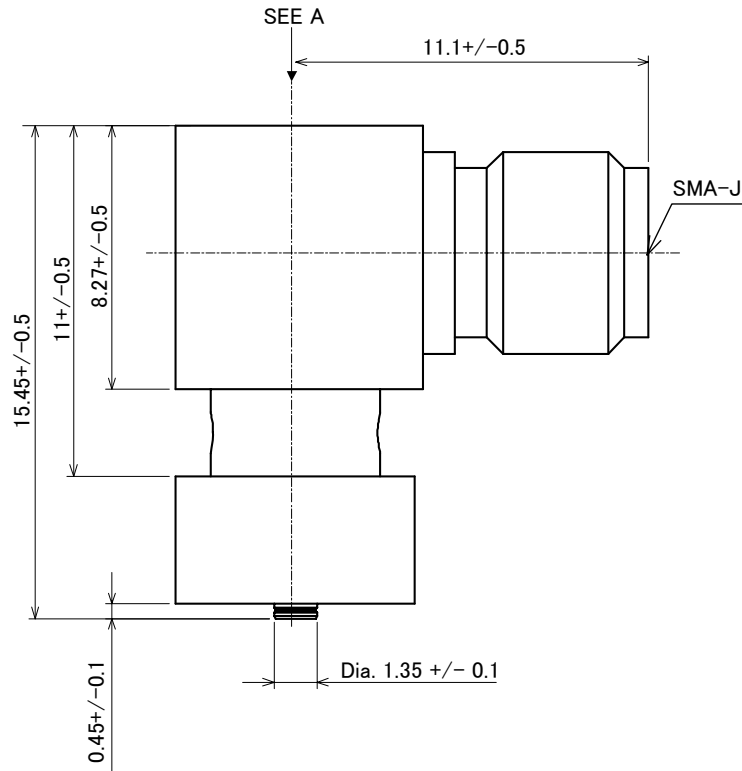
Performance

Item	Specification	
Frequency Rating	Up to 11GHz	
Impeadance	50 ohm	
Voltage Rating	250V r.m.s.	
VSWR	to 3GHz	1.3 max.
	3 to 6GHz	1.6 max.
	6 to 11GHz	2.0 max.
Insertion Loss	to 3GHz	0.4dB max.
	3 to 6GHz	0.6dB max.
	6 to 11GHz	1.0dB max.
Durability	2000 cycles	

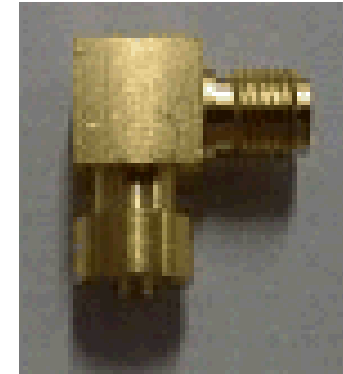
Without cable type

SWG Series

Adaptor for probe : MM126312



In : mm



Performance

Item		Specification
Frequency Rating		Up to 11GHz
Impeadance		50 ohm
Voltage Rating		250V r.m.s.
VSWR	to 3GHz	1.4 max.
	3 to 6GHz	1.6 max.
	6 to 11GHz	1.7 max.
Insertion Loss	to 3GHz	0.2dB max.
	3 to 6GHz	0.3dB max.
	6 to 11GHz	0.4dB max.
Durability		1000 cycles