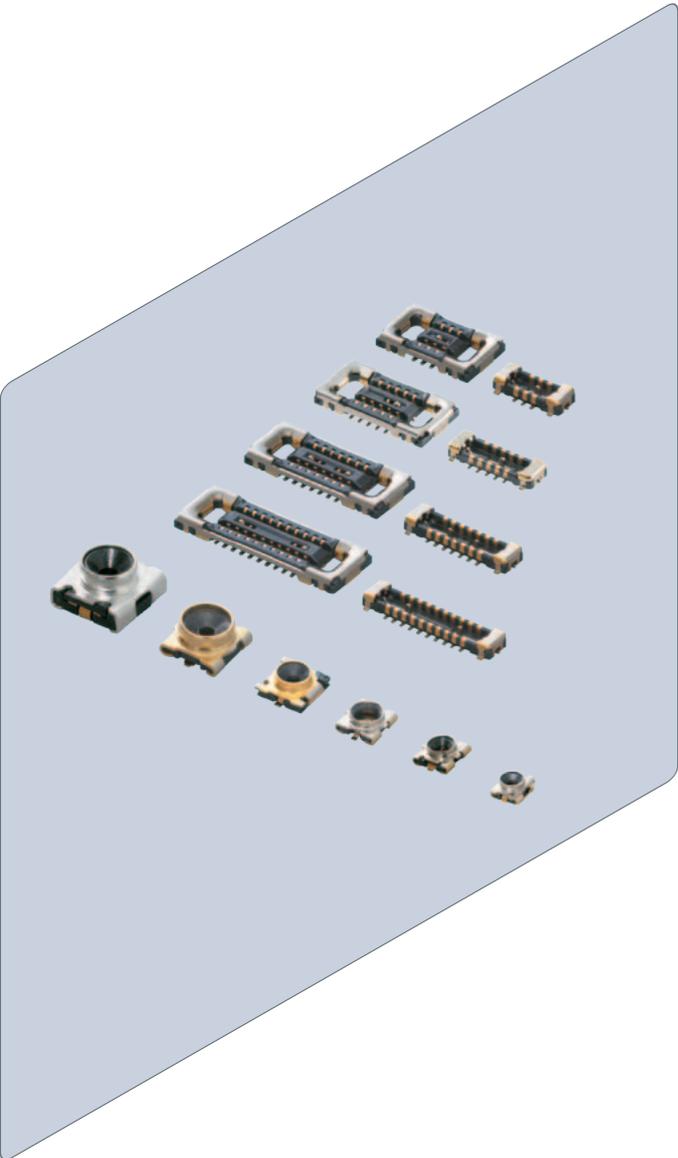


Microwave Connectors





EU RoHS Compliant

- All the products in this catalog comply with EU RoHS.
- EU RoHS is "the European Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment."
- For more details, please refer to our web page, "Murata's Approach for EU RoHS" (<https://www.murata.com/en-eu/support/compliance/rohs>).

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Product specifications are as of December 2025.

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Mechanical Performance Measurement System (Engagement/Disengagement Force)	p25
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Please check the MURATA website (<https://www.murata.com/>) if you cannot find a part number in this catalog.

● Part Numbering

Microwave Coaxial Connectors/Multi Line Connectors

(Part Number)

MM	8930	-26	00	R	K0
----	------	-----	----	---	----

① ② ③ ④ ⑤ ⑥

① Product ID

Code	
MM	Microwave Coaxial Connectors/Multi Line Connectors (Chip Type Receptacle)

② Series

Code	Series
8130	SWF Type
8030	SWG Type
8930	SWH Type
8830	SWJ Type
3529	MLF-Male (Plug) Type
3531	MLF-Female (Plug Receptacle) Type

③ Individual Specification Code (1)

Code	Individual Specification Code (1)
-26	Switch Connector SMD Type
-27	Connector SMD Type

④ Individual Specification Code (2)

Code	Individual Specification Code (2)
**	Expressed by two figure

⑤ Package Product ID

Code	Package Product ID
B	Bulk
R	Reel

*You cannot order with Bulk for MP items.

⑥ Package Detail

Code	Package Detail
A2	SWF Type, 2000pcs./Reel (ø180mm)
B8	SWF Type, 8000pcs./Reel (ø330mm)
J3	SWG Type, 3000pcs./Reel (ø180mm)
J4	SWH, SWJ Type, 4000pcs./Reel (ø180mm)
K0	SWG, SWH Type, 10000pcs./Reel (ø330mm)
K15	SWJ Type, 15000pcs./Reel (ø330mm)
A5	MLF-Male (Plug), MLF-Female (Plug Receptacle), 5000pcs./Reel (ø180mm)
B18	MLF-Male (Plug), MLF-Female (Plug Receptacle), 18000pcs./Reel (ø330mm)
E5/G5	MLF-Female (Plug Receptacle), 5000pcs./Reel (Clear emboss, ø180mm)
F18/H18	MLF-Female (Plug Receptacle), 18000pcs./Reel (Clear emboss, ø330mm)

Type of Connectors

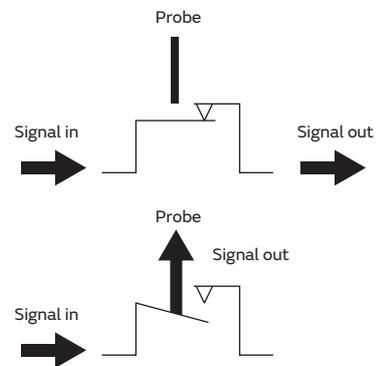
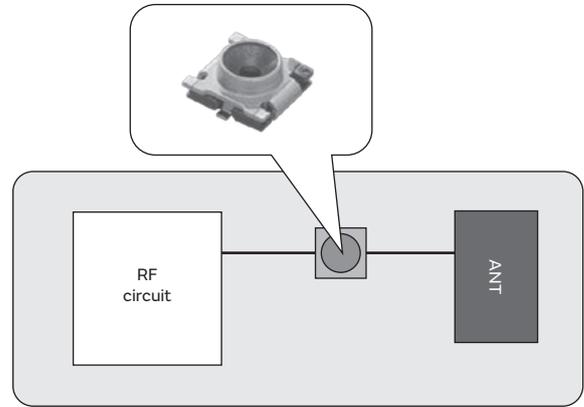
Murata offers a variety of connectors:

- Switch connector to measure RF circuit.
- Board to Board connector to transmit high frequency signals from board to board with low loss.

Microwave Coaxial Connectors with Switch

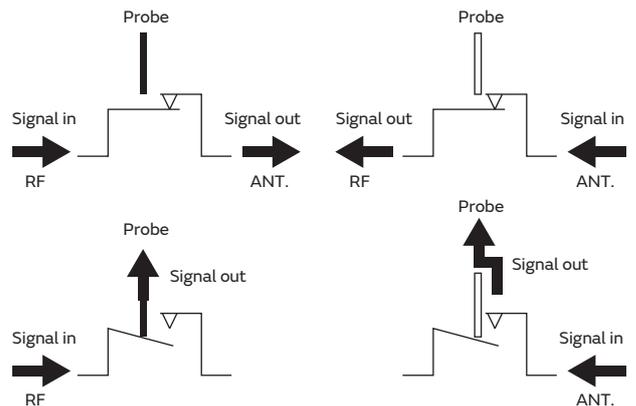
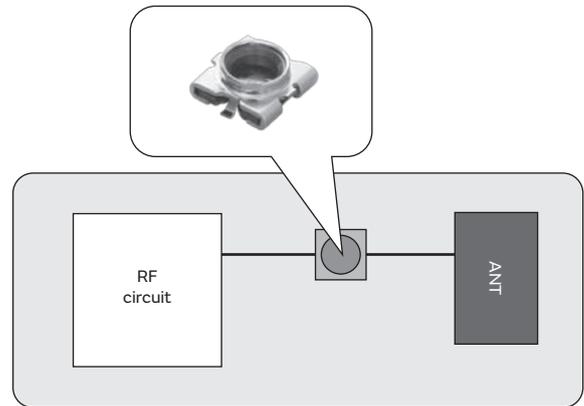
The RF circuit and ANT characteristics can be measured by mounting in an RF transmission line.

The internally built-in mechanical switch separates the RF circuit and ANT circuit, so that the circuit can be measured without any mutual effect using a dedicated probe made by Murata. Except when measuring with probe, internal mechanical switch is connected, so RF circuit and Antenna circuit are connected.



Microwave Coaxial Connectors with Switch (bi-direction)

RF circuit and Antenna circuit can be measured by using special probe without remounting switch connector.



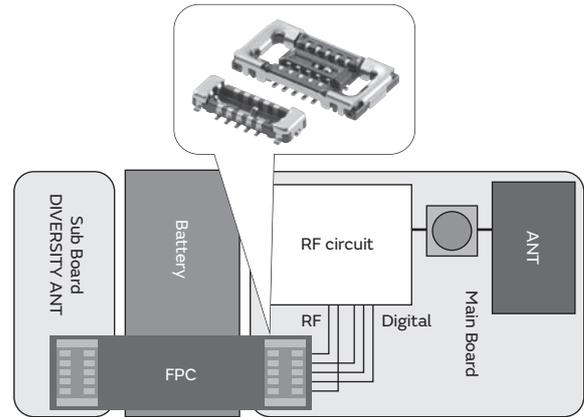
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Type of Connectors

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Microwave Multi Line Connector (Board-to-board/board to-FPC connectors)

Multi line connector transmit signals from board to board.
 The connectors can transmit not only digital signals but also RF signals.
 It contributes to save space for the various devices such as mobile phone and wearable device mainly.



Connector Applications

We introduce just some utilization examples here. Please feel free to ask about other applications.



Communication devices

- Modems
- CPEs
- Gateways
- WiFi routers
- Range extenders (repeaters)
- BTSs
- Satellite communications (Ground receivers)



PC & tablets

- Notebooks
- Tablets
- Smart pens
- Game consoles



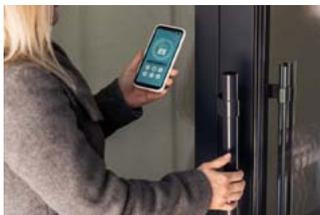
Smartphones & wearables

- AR/VR/smart glasses
- Smartphones
- Smartwatches
- Wireless earphones



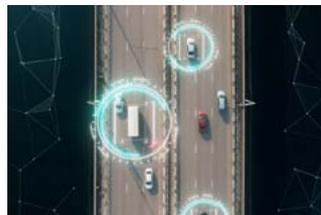
Smart homes (*)

- Smart speakers
- Smart TVs
- Smart doors
- Smart thermostats
- Smart switches
- Pet cameras
- Robotic vacuum cleaners
- Smart meters



Security (*)

- Security cameras
- Smart locks



Tracking (*)

- Pet tracking
- Package tracking
- Loss prevention tags



Healthcare & medical (*)

- Electronic thermometers
- Electrocardiograms monitors
- Hearing aids
- Breast pumps



POS (*)

(*) Microwave coaxial connectors with switches and microwave multi line connectors (board-to-board/board-to-FPC connectors) are consumer products. Therefore, they may not be compatible with these applications. If you are considering these products for such applications, please contact us.

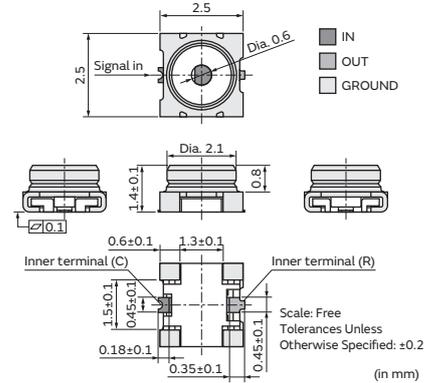
Microwave Coaxial Connectors with Switch

1

Microwave Coaxial Connectors with Switch SWF Type

Features

1. The microwave coaxial connector with switch is very useful for electrical characteristics measurement of microwave circuit for PC, tablet and cellular phone.
2. Size 2.5x2.5x1.4mm (LxWxH), Occupation area 6.25mm²
3. Excellent characteristics, low IL 0.2dB max. (@6GHz)
 V.S.W.R. 1.3 max. (DC to 6GHz)
4. Connector durability is 100 cycles with probe.



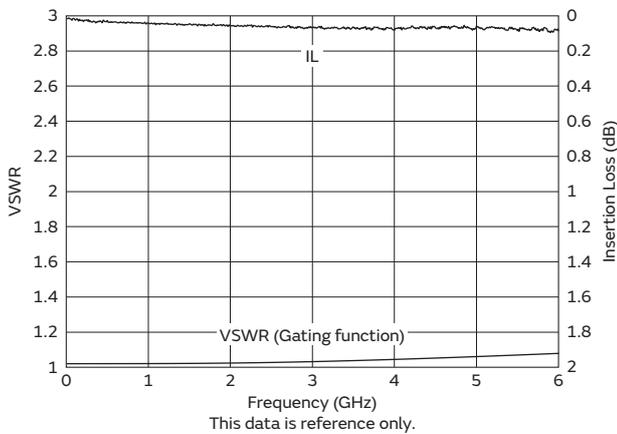
Applications

PC, Tablet, Cellular phone and other wireless equipment

Part Number	Center Contact Resistance (mΩ max.)	Withstanding Voltage (Vrms)	Insulation Resistance (MΩ)	Durability (Cycle)	Nominal Frequency Range (GHz)	VSWR (dB max.)	Insertion Loss (On) (dB max.)	Isolation (Off) (dB min.)
MM8130-2600	70	300	500	100	up to 6	1.2 (DC to 3GHz) 1.3 (3GHz to 6GHz)	0.1 (DC to 3GHz) 0.2 (3GHz to 6GHz)	20 (DC to 3GHz) 15 (3GHz to 6GHz)

Nominal Impedance: 50Ω
 Rated Voltage: 30Vrms
 Temperature Rating: -40 to 85°C

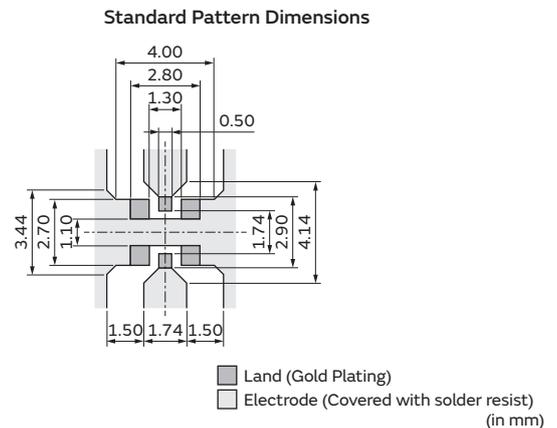
Specification (Insertion Loss & VSWR)



Measurement system: Refer to Electrical performance measurement system (p. 24)

Standard Pattern Dimension, Stencil Mask Pattern

- I/O pattern should be designed to be the impedance match 50 ohm.
- The material of PWB is the epoxy resin of glass fabric base. (εr=4.3@1GHz). Thickness is 1.0mm.
- The solder resist should be printed except for the land pattern on the PWB
- Land pattern and solder resist pattern must be followed to avoid soldering defects.

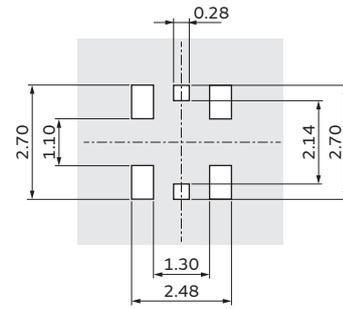


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- There is the possibility to have the contact failure by flux shifting into contact point, if the excess solder is used by non-standard stencil mask pattern. Stencil mask pattern must be followed to avoid soldering defects.

Standard Stencil Mask Pattern

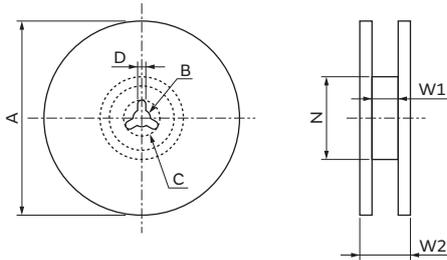


(Thickness: 0.12mm)

The standard solder cream stencil mask drawing

(in mm)

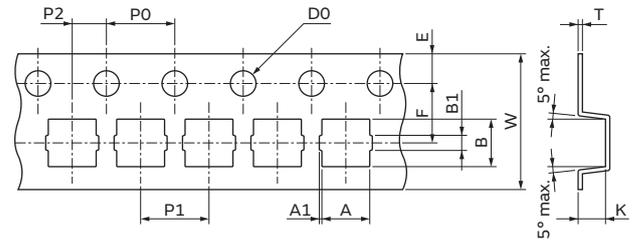
Dimensions of Reel



Part Number	A	B	C	D	N	W1	W2
MM8130-2600RA2	180+0/-3	13±0.5	21±0.8	2±0.5	Dia. 60+1/-0	9±0.3	11.4±1.0
MM8130-2600RB8	330±2.0	13±0.5	21±0.8	2±0.5	Dia. 100±1.0	9.4±1.0	13.4±1.0

(in mm)

Dimensions of Taping



A	A1	B	B1	W	D0
2.8±0.1	0.15±0.1	2.8±0.1	0.85±0.1	8±0.2	Dia. 1.5±0.1

E	F	K	P0	P1	P2	T
1.75±0.1	3.5±0.1	1.6±0.1	4±0.1	4±0.1	2±0.1	0.25±0.05

(in mm)

Minimum Quantity

MM8130-2600RA2: 180 mm dia. reel/2000 pcs.

MM8130-2600RB8: 330 mm dia. reel/8000 pcs.

SWF probe lineup

Type of Probes	Auto probe with floating mechanism	Manual probe with cable
	SMA type	With cable
Part Number	MM126320	MXHS83QE3000 (SMA-Female, 300mm)

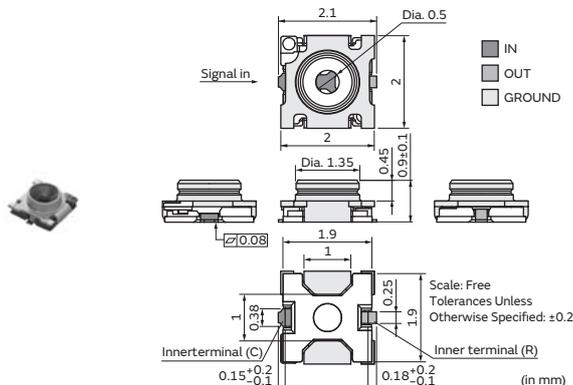
Please refer to page 23 for information on the types of probes.

Microwave Coaxial Connectors with Switch

Microwave Coaxial Connectors with Switch SWG Type

Features

1. The microwave coaxial connector with switch is very useful for electrical characteristics measurement of microwave circuit for PC, tablet and cellular phone.
2. Nominal Frequency Range is DC to 11GHz.
3. Size 2x2x0.9mm (LxWxH), Occupation area 4mm²
4. Excellent characteristics, low IL 0.2dB max. (@6GHz) and 0.5dB max. (@11GHz) V.S.W.R. 1.3 max. (DC to 6GHz) and 1.5 max. (6GHz to 11GHz)
5. Connector durability is 100 cycles with probe.



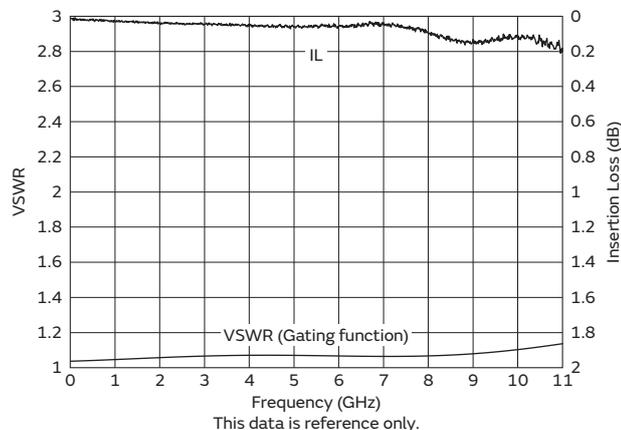
Applications

PC, Tablet, Cellular phone and other wireless equipment

Part Number	Center Contact Resistance (mΩ max.)	Withstanding Voltage (Vrms)	Insulation Resistance (MΩ)	Durability (Cycle)	Nominal Frequency Range (GHz)	VSWR (dB max.)	Insertion Loss (On) (dB max.)	Isolation (Off) (dB min.)
MM8030-2610	70	300	500	100	up to 11	1.2 (DC to 3GHz) 1.3 (3GHz to 6GHz) 1.5 (6GHz to 11GHz)	0.1 (DC to 3GHz) 0.2 (3GHz to 6GHz) 0.5 (6GHz to 11GHz)	20 (DC to 3GHz) 15 (3GHz to 6GHz) 10 (6GHz to 11GHz)

Nominal Impedance: 50Ω
 Rated Voltage: 30Vrms
 Temperature Rating: -40 to 85°C

Specification (Insertion Loss & VSWR)

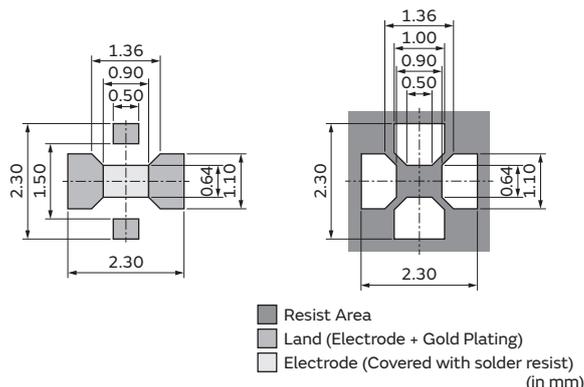


Measurement system: Refer to Electrical performance measurement system (p. 24)

Standard Pattern Dimension, Stencil Mask Pattern

- I/O pattern should be designed to be the impedance match 50 ohm.
- The material of PWB is the epoxy resin of glass fabric base. ($\epsilon_r=4.3@1\text{GHz}$). Thickness is 1.0mm.
- The solder resist should be printed except for the land pattern on the PWB
- Land pattern and solder resist pattern must be followed to avoid soldering defects.

Standard Pattern Dimensions

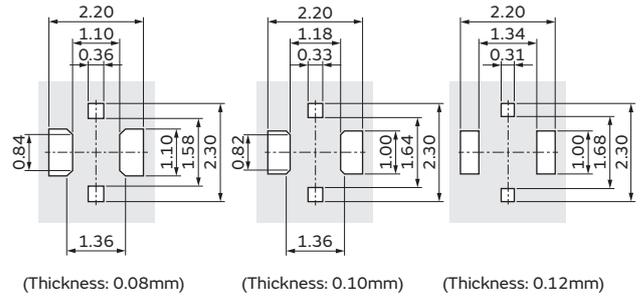


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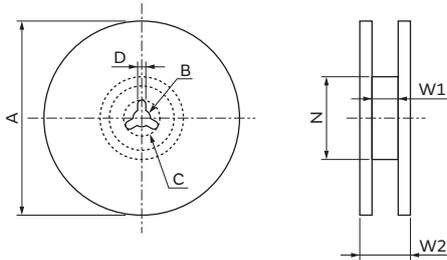
- There is the possibility to have the contact failure by flux shifting into contact point, if the excess solder is used by non-standard stencil mask pattern. Stencil mask pattern must be followed to avoid soldering defects.

Standard Stencil Mask Pattern



The standard solder cream stencil mask drawing (in mm)

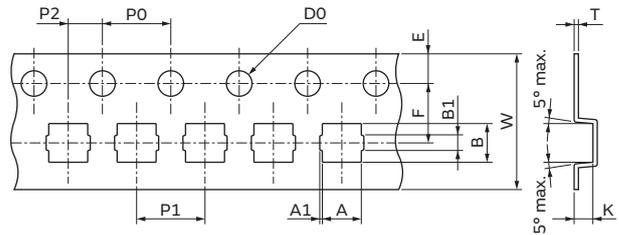
Dimensions of Reel



Part Number	A	B	C	D	N	W1	W2
MM8030-2610RJ3	180+0/-3	13±0.5	21±0.8	2±0.5	Dia. 60+1/-0	9±0.3	11.4±1.0
MM8030-2610RK0	330±2.0	13±0.5	21±0.8	2±0.5	Dia. 100±1.0	9.4±1.0	13.4±1.0

(in mm)

Dimensions of Taping



A	A1	B	B1	W	D0
2.28±0.1	0.15±0.1	2.28±0.1	0.85±0.1	8±0.2	Dia. 1.5±0.1

E	F	K	P0	P1	P2	T
1.75±0.1	3.5±0.1	1.1±0.1	4±0.1	4±0.1	2±0.1	0.25±0.05

(in mm)

Minimum Quantity

- MM8030-2610RJ3: 180 mm dia. reel/3000 pcs.
- MM8030-2610RK0: 330 mm dia. reel/10000 pcs.

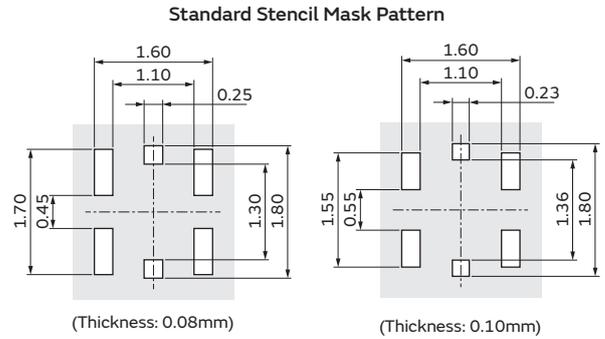
SWG probe lineup

Type of Probes	Auto probe with floating mechanism		Manual probe with cable
Prat Number	SMA type MM126330	SMPM type MM206417	With cable MXHQ87WJ3000 (SMA-Female, 300mm)

Please refer to page 23 for information on the types of probes.

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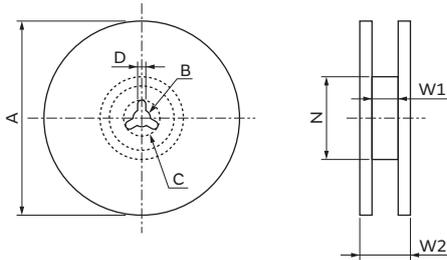
- There is the possibility to have the contact failure by flux shifting into contact point, if the excess solder is used by non-standard stencil mask pattern. Stencil mask pattern must be followed to avoid soldering defects.



The standard solder cream stencil mask drawing

(in mm)

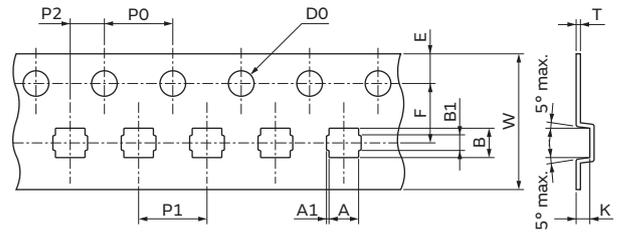
Dimensions of Reel



Part Number	A	B	C	D	N	W1	W2
MM8930-2600RJ4	180+0/-3	13±0.5	21±0.8	2±0.5	Dia. 60+1/-0	9±0.3	11.4±1.0
MM8930-2600RK0	330±2.0	13±0.5	21±0.8	2±0.5	Dia. 100±1.0	9.4±1.0	13.4±1.0

(in mm)

Dimensions of Taping



A	A1	B	B1	W	D0
1.73±0.1	0.14±0.1	1.73±0.1	0.8±0.2	8±0.2	Dia. 1.5±0.1

E	F	K	P0	P1	P2	T
1.75±0.1	3.5±0.1	0.8±0.1	4±0.1	4±0.1	2±0.1	0.25±0.05

(in mm)

Minimum Quantity

MM8930-2600RJ4: 180 mm dia. reel/4000 pcs.
 MM8930-2600RK0: 330 mm dia. reel/10000 pcs.

SWH probe lineup

Type of Probes	Auto probe with floating mechanism		Manual probe with cable
	SMA type	SMPM type	With cable
Part Number	MM126515	MM206621	MXHQ87PA3000 (SMA-Female, 300mm)

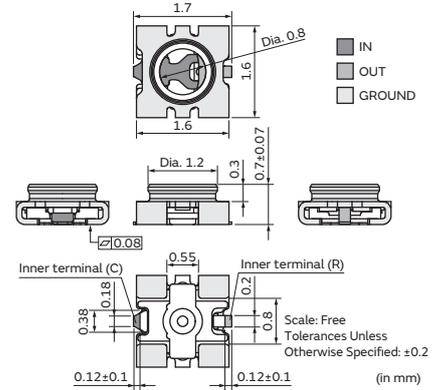
Please refer to page 23 for information on the types of probes.

Microwave Coaxial Connectors with Switch

Microwave Coaxial Connectors with Switch SWH-2Way Type

Features

1. The microwave 2way (bi-directional) coaxial connector with switch is very useful for electrical characteristics measurement of microwave circuit for cellular phone and small wireless equipment such as wearable equipment.
2. It is possible to measure ANT circuit and RF circuit with designated probe.
3. Size 1.6x1.6x0.7mm (LxWxH), Occupation area 2.56mm²
4. Excellent characteristics, low IL 0.35dB max. (@12GHz)
 V.S.W.R. 1.6 max. (DC to 12GHz)
5. Connector durability is 50 cycles with probe.



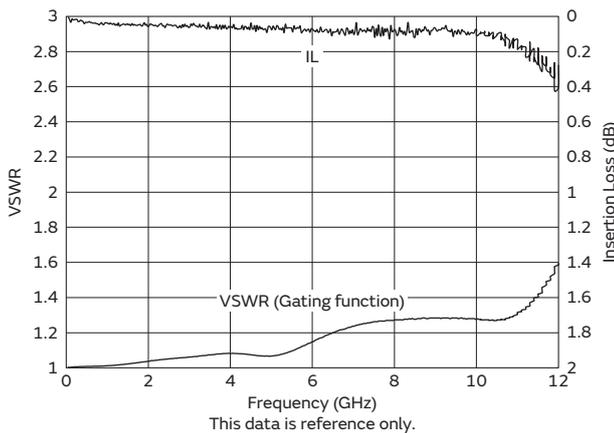
Applications

Cellular phone, Wearable equipment and other wireless equipment

Part Number	Center Contact Resistance (mΩ max.)	Withstanding Voltage (Vrms)	Insulation Resistance (MΩ)	Durability (Cycle)	Nominal Frequency Range (GHz)	VSWR (dB max.)	Insertion Loss (On) (dB max.)	Isolation (Off) (dB min.)
MM8930-2620	70	200	500	50	up to 12	1.2 (DC to 3GHz) 1.2 (3GHz to 6GHz) 1.4 (6GHz to 9GHz) 1.6 (9GHz to 12GHz)	0.10 (DC to 3GHz) 0.20 (3GHz to 6GHz) 0.25 (6GHz to 9GHz) 0.35 (9GHz to 12GHz)	RF: 20 (DC to 3GHz) RF: 15 (3GHz to 6GHz) RF: 15 (6GHz to 9GHz) RF: 13 (9GHz to 12GHz) ANT: 18 (DC to 3GHz) ANT: 13 (3GHz to 6GHz) ANT: 11 (6GHz to 9GHz) ANT: 9 (9GHz to 12GHz)

Nominal Impedance: 50Ω
 Rated Voltage: 30Vrms
 Temperature Rating: -40 to 85°C

Specification (Insertion Loss & VSWR)

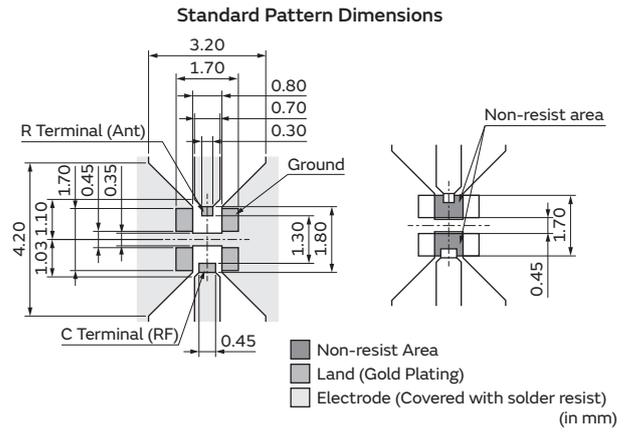


Measurement system: Refer to electrical performance measurement system (p. 24)

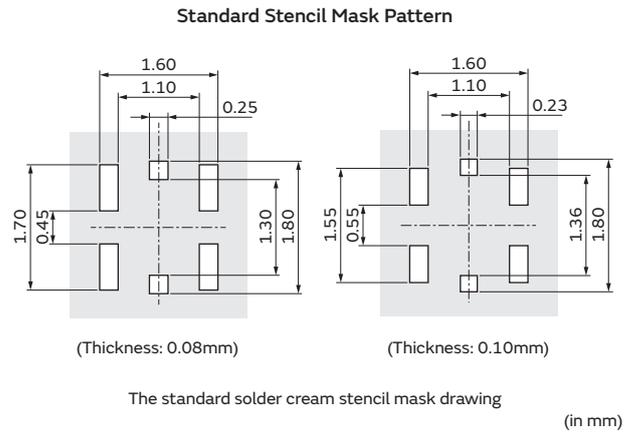
This data is reference only.

Standard Pattern Dimension, Stencil Mask Pattern

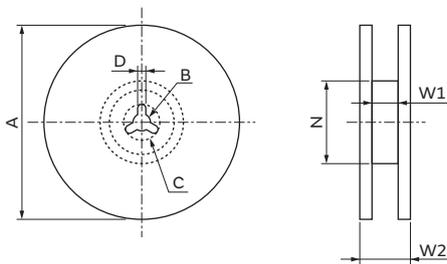
- I/O pattern should be designed to be the impedance match 50 ohm.
- The material of PWB is the epoxy resin of glass fabric base. ($\epsilon_r=3.4@1\text{GHz}$). Thickness is 0.4mm.
- The solder resist should be printed except for the land pattern on the PWB
- Land pattern and solder resist pattern must be followed to avoid soldering defects.



- There is the possibility to have the contact failure by flux shifting into contact point, if the excess solder is used by non-standard stencil mask pattern. Stencil mask pattern must be followed to avoid soldering defects.



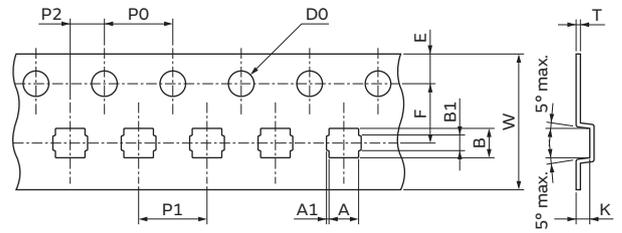
Dimensions of Reel



Part Number	A	B	C	D	N	W1	W2
MM8930-2620RJ4	180+0/-3	13±0.5	21±0.8	2±0.5	Dia. 60+1/-0	9±0.3	11.4±1.0
MM8930-2620RK15	330±2.0	13±0.5	21±0.8	2±0.5	Dia. 100±1.0	9.4±1.0	13.4±1.0

(in mm)

Dimensions of Taping



A	A1	B	B1	W	D0
1.73±0.1	0.14±0.1	1.73±0.1	0.8±0.2	8±0.2	Dia. 1.5±0.1

E	F	K	P0	P1	P2	T
1.75±0.1	3.5±0.1	0.8±0.1	4±0.1	4±0.1	2±0.1	0.25±0.05

(in mm)

Minimum Quantity

- MM8930-2620RJ4: 180 mm dia. reel/4000 pcs.
- MM8930-2620RK15: 330 mm dia. reel/15000 pcs.

SWH-2Way probe lineup

Type of Probes	Auto probe with floating mechanism		Manual probe with cable
	SMA type	SMPM type	With cable
Prat Number (For RF)	MM126526	MM206624	MXHQ87PN3000 (SMA-Female, 300mm)
Prat Number (For ANT)	MM126517	MM206625	MXHQ87PP3000 (SMA-Female, 300mm)

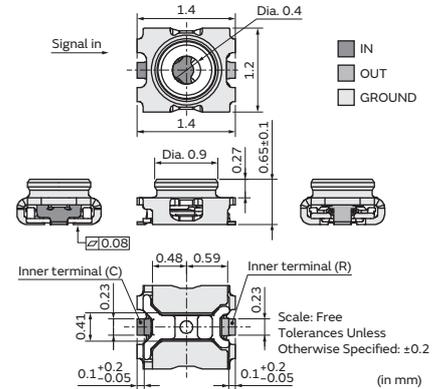
Please refer to page 23 for information on the types of probes.

Microwave Coaxial Connectors with Switch

Microwave Coaxial Connectors with Switch SWJ Type

Features

1. The worlds smallest level microwave coaxial connector with switch is very useful for electrical characteristics measurement of microwave circuit for cellular phone and small wireless equipment such as wearable equipment.
2. Size 1.4x1.2x0.65mm (LxWxH), Occupation area 1.68mm²
3. Excellent characteristics, low IL 0.4dB max. (@12GHz), 1.3dB max. (@20GHz) V.S.W.R. 1.5 max. (9GHz to 12GHz), 1.8 max. (18GHz to 20GHz)
4. Connector durability is 50 cycles with probe.



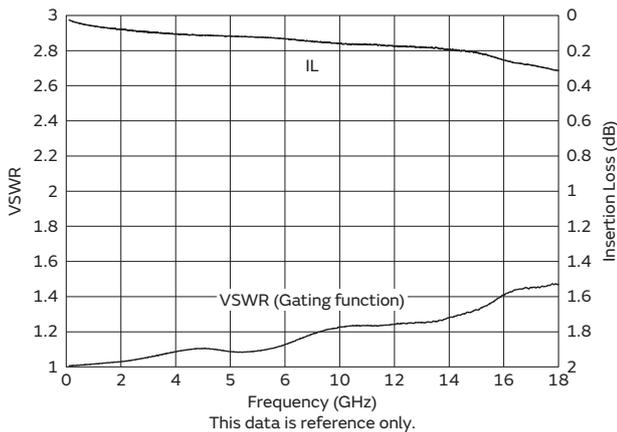
Applications

Cellular phone, Wearable equipment and other wireless equipment

Part Number	Center Contact Resistance (mΩ max.)	Withstanding Voltage (Vrms)	Insulation Resistance (MΩ)	Durability (Cycle)	Nominal Frequency Range (GHz)	VSWR (dB max.)	Insertion Loss (On) (dB max.)	Isolation (Off) (dB min.)
MM8830-2600	70	200	500	50	up to 20	1.2 (DC to 8GHz) 1.3 (8GHz to 9GHz) 1.5 (9GHz to 12GHz) 1.5 (12GHz to 15GHz) 1.6 (15GHz to 18GHz) 1.8 (18GHz to 20GHz)	0.1 (DC to 3GHz) 0.2 (3GHz to 6GHz) 0.3 (6GHz to 9GHz) 0.4 (9GHz to 12GHz) 0.5 (12GHz to 15GHz) 0.7 (15GHz to 18GHz) 1.3 (18GHz to 20GHz)	27 (DC to 3GHz) 21 (3GHz to 6GHz) 17 (6GHz to 9GHz) 15 (9GHz to 12GHz) 12 (12GHz to 15GHz) 11 (15GHz to 18GHz) 11 (18GHz to 20GHz)

Nominal Impedance: 50Ω
 Rated Voltage: 30Vrms
 Temperature Rating: -40 to 85°C

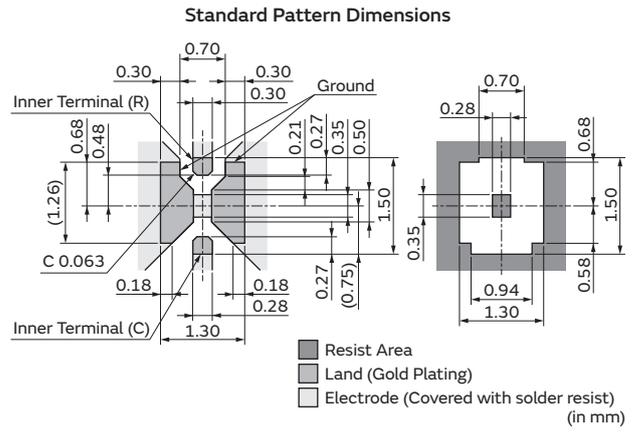
Specification (Insertion Loss & VSWR)



Measurement system: Refer to electrical performance measurement system (p. 24)

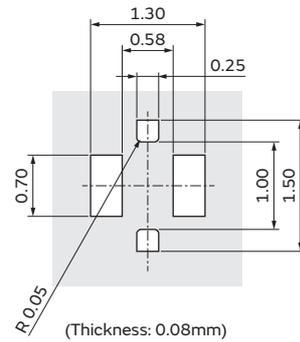
Standard Pattern Dimension, Stencil Mask Pattern

- I/O pattern should be designed to be the impedance match 50 ohm.
- The material of PWB is the epoxy resin of glass fabric base. ($\epsilon_r=3.4@1\text{GHz}$). Thickness is 0.5mm.
- The solder resist should be printed except for the land pattern on the PWB
- Land pattern and solder resist pattern must be followed to avoid soldering defects.



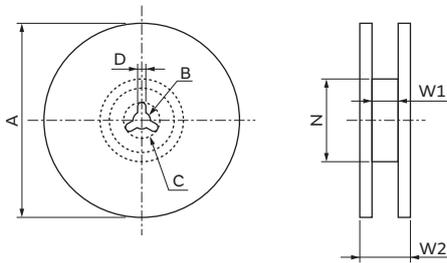
- There is the possibility to have the contact failure by flux shifting into contact point, if the excess solder is used by non-standard stencil mask pattern. Stencil mask pattern must be followed to avoid soldering defects.

Standard Stencil Mask Pattern



The standard solder cream stencil mask drawing (in mm)

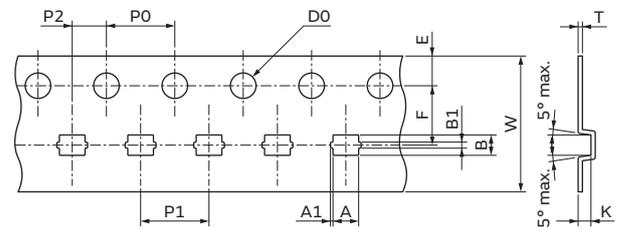
Dimensions of Reel



Part Number	A	B	C	D	N	W1	W2
MM8830-2600RJ4	180+0/-3	13±0.5	21±0.8	2±0.5	Dia. 60+1/-0	9±0.3	11.4±1.0
MM8830-2600RK15	330±2.0	13±0.5	21±0.8	2±0.5	Dia. 100±1.0	9.4±1.0	13.4±1.0

(in mm)

Dimensions of Taping



A	A1	B	B1	W	D0
1.5±0.1	0.14±0.1	1.3±0.1	0.29±0.1	8±0.2	Dia. 1.5±0.1

E	F	K	P0	P1	P2	T
1.75±0.1	3.5±0.1	0.75±0.1	4±0.1	4±0.1	2±0.1	0.25±0.05

(in mm)

Minimum Quantity

MM8830-2600RJ4: 180 mm dia. reel/4000 pcs.
 MM8830-2600RK15: 330 mm dia. reel/15000 pcs.

SWJ probe lineup

Type of Probes	Auto probe with floating mechanism	Manual probe with cable
	SMA type	SMPM type
Part Number	MM126715	MM206819
		With cable
		MXHQ87PK3000 (SMA-Female, 300mm)

Please refer to page 23 for information on the types of probes.

Microwave Multi Line Connectors (Board-to-board/board to-FPC connectors)

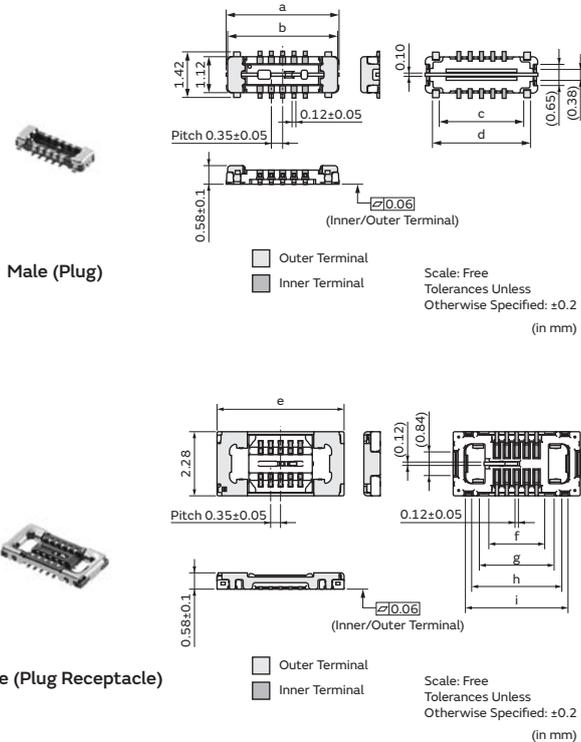
Multi Line Connectors MLF Type

Features

1. The multi line connector is small, thin and suitable for internal wiring such as celler phone and wearable device.
2. The connectors transmit not only digital signals but also RF signals. It can contribute to save the space.
3. Male (Plug) (10 pin type) size 3.49x1.42mm (LxW), Occupation area 4.96mm², Female (Plug Receptacle) (10 pin type) size 4.48x2.28mm (LxW), Occupation area 10.21mm²
4. Mating height is 0.60mm (typ.), which is the world lowest profile level, with Male (Plug) and Female (Plug Receptacle).
5. VSWR 1.65 max. (DC to 20GHz)
6. This has good lock feeling when Male (Plug) and Female (Plug Receptacle) are mated.

Applications

Cellular phone, Wearable device, and other wireless equipment

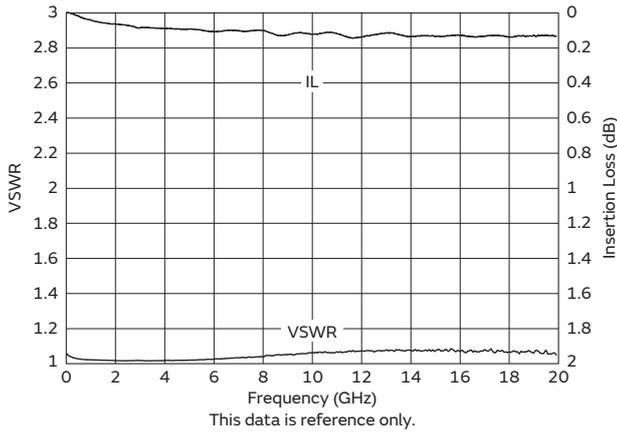


Type	Male (Plug)				Female (Plug Receptacle)				
	a	b	c	d	e	f	g	h	i
MLF06	2.79±0.15	2.70	(1.91)	(2.33)	3.78±0.15	(1.27)	(1.94)	(2.48)	(2.92)
MLF08	3.14±0.15	3.05	(2.26)	(2.68)	4.13±0.15	(1.62)	(2.29)	(2.83)	(3.27)
MLF10	3.49±0.15	3.40	(2.61)	(3.03)	4.48±0.15	(1.97)	(2.64)	(3.18)	(3.62)
MLF12	4.00±0.15	3.98	(3.12)	(3.54)	5.23±0.15	(2.22)	(3.39)	(3.93)	(4.37)
MLF14	4.35±0.15	4.33	(3.47)	(3.89)	5.58±0.15	(2.57)	(3.74)	(4.28)	(4.72)
MLF16	4.70±0.15	4.68	(3.82)	(4.24)	5.93±0.15	(2.92)	(4.09)	(4.63)	(5.07)
MLF18	5.05±0.15	5.03	(4.17)	(4.59)	6.28±0.15	(3.27)	(4.44)	(4.98)	(5.42)
MLF20	5.40±0.15	5.38	(4.52)	(4.94)	6.63±0.15	(3.62)	(4.79)	(5.33)	(5.77)
MLF22	5.75±0.15	5.73	(4.87)	(5.29)	6.98±0.15	(3.97)	(5.14)	(5.68)	(6.12)
MLF28	6.80±0.15	6.78	(5.92)	(6.34)	8.03±0.15	(5.02)	(6.19)	(6.73)	(7.17)

Type	Male (Plug) Part Number	Female (Plug Receptacle) Part Number (Mating Height (mm))	Center Contact Resistance (mΩ max.)	Withstanding Voltage (Vrms)	Insulation Resistance (MΩ)	Durability (Cycle)	Pitch (mm)	Nominal Frequency Range (GHz)	VSWR (dB max.)
MLF06	MM3529-2700A06	MM3531-270*A06 (0.60 typ.)	50	150	500	30	0.35 typ.	up to 20	1.2 (DC to 3GHz) 1.2 (3GHz to 6GHz) 1.3 (6GHz to 9GHz) 1.3 (9GHz to 12GHz) 1.35 (12GHz to 15GHz) 1.5 (15GHz to 18GHz) 1.65 (18GHz to 20GHz)
MLF08	MM3529-2700A08	MM3531-2700A08 (0.60 typ.)							
MLF10	MM3529-2700A10	MM3531-270*A10 (0.60 typ.)							
MLF12	MM3529-2700A12	MM3531-2700A12 (0.60 typ.)							
MLF14	MM3529-2700A14	MM3531-2700A14 (0.60 typ.)							
MLF16	MM3529-2700A16	MM3531-2700A16 (0.60 typ.)							
MLF18	MM3529-2700A18	MM3531-2700A18 (0.60 typ.)							
MLF20	MM3529-2700A20	MM3531-2700A20 (0.60 typ.)							
MLF22	MM3529-2700A22	MM3531-2700A22 (0.60 typ.)							
MLF28	MM3529-2700A28	MM3531-2700A28 (0.60 typ.)					up to 17	1.2 (DC to 3GHz) 1.2 (3GHz to 6GHz) 1.3 (6GHz to 9GHz) 1.3 (9GHz to 12GHz) 1.35 (12GHz to 15GHz) 1.45 (15GHz to 17GHz)	

Nominal Impedance: 50Ω
 Rated Voltage: 30Vrms
 Temperature Rating: -40 to 85°C

Specification: MLF10 (Insertion Loss & VSWR)



Measurement system: Refer to electrical performance measurement system (p. 24)

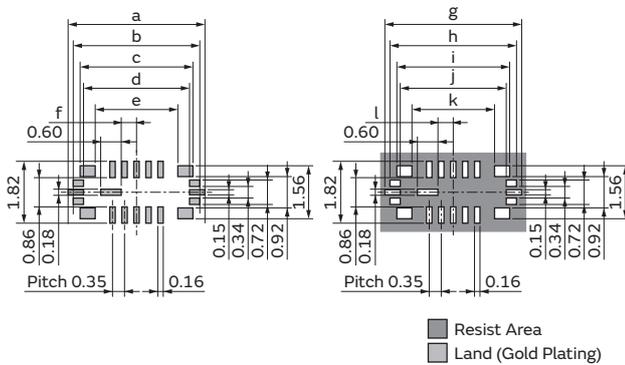
Measurement condition: Male (Plug) + Female (Plug Receptacle)

Standard Pattern Dimension, Stencil Mask Pattern

- I/O pattern should be designed to be the impedance match 50 ohm.
- The material of PWB is the epoxy resin of glass fabric base. ($\epsilon_r=3.4@1\text{GHz}$). Thickness is 0.1mm.
- The solder resist should be printed except for the land pattern on the PWB
- Land pattern and solder resist pattern must be followed to avoid soldering defects.

Standard Pattern Dimensions

MLF06/MLF08/MLF10 Male (Plug)
 (Below is MLF10 Male (Plug) for reference.)



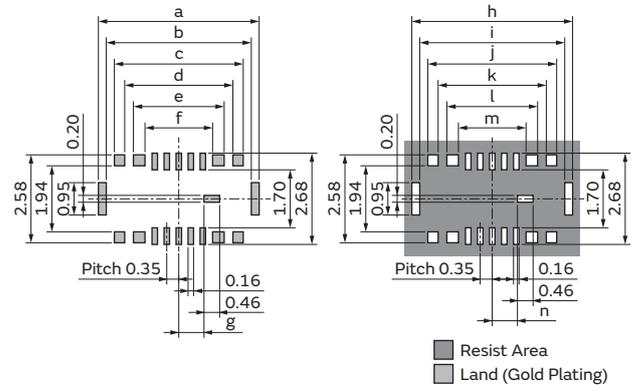
(in mm)

Male (Plug)

Type	a	b	c	d	e	f
MLF06	3.29	2.99	2.59	2.39	1.71	0.10
MLF08	3.64	3.34	2.94	2.74	2.06	0.27
MLF10	3.99	3.69	3.29	3.09	2.41	0.45

Type	g	h	i	j	k	l
MLF06	3.29	2.99	2.59	2.39	1.71	0.10
MLF08	3.64	3.34	2.94	2.74	2.06	0.27
MLF10	3.99	3.69	3.29	3.09	2.41	0.45

MLF06/MLF08/MLF10 Female (Plug Receptacle)
 (Below is MLF10 Female (Plug Receptacle) for reference.)



(in mm)

Female (Plug Receptacle)

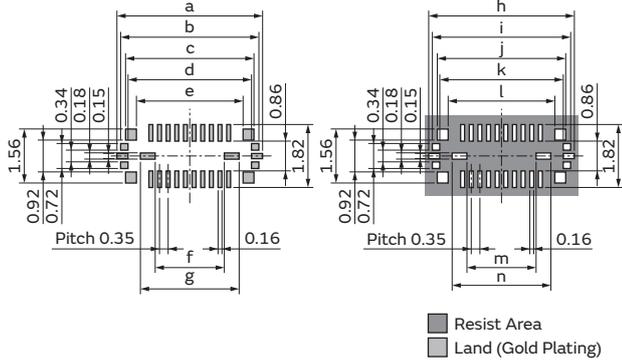
Type	a	b	c	d	e	f	g
MLF06	3.98	3.52	3.05	2.45	1.94	1.27	0.39
MLF08	4.33	3.87	3.40	2.80	2.29	1.62	0.56
MLF10	4.68	4.22	3.75	3.15	2.64	1.97	0.74

Type	h	i	j	k	l	m	n
MLF06	3.98	3.52	3.05	2.45	1.94	1.27	0.39
MLF08	4.33	3.87	3.40	2.80	2.29	1.62	0.56
MLF10	4.68	4.22	3.75	3.15	2.64	1.97	0.74

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MLF12/MLF14/MLF16/MLF18/MLF20/MLF22/MLF28 Male (Plug)
 (Below is MLF20 Male (Plug) for reference.)



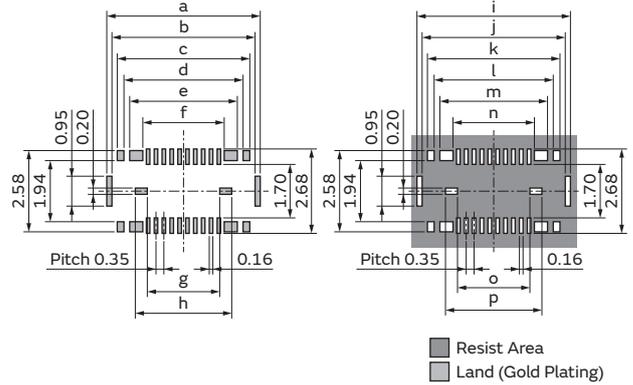
Male (Plug)

(in mm)

Type	a	b	c	d	e	f	g
MLF12	4.50	4.20	3.80	3.60	2.92	1.40	2.60
MLF14	4.85	4.55	4.15	3.95	3.27	1.75	2.95
MLF16	5.20	4.90	4.50	4.30	3.62	2.10	3.30
MLF18	5.55	5.25	4.85	4.65	3.97	2.45	3.65
MLF20	5.90	5.60	5.20	5.00	4.32	2.80	4.00
MLF22	6.25	5.95	5.55	5.35	4.67	3.15	4.35
MLF28	7.30	7.00	6.60	6.40	5.72	4.20	5.40

Type	h	i	j	k	l	m	n
MLF12	4.50	4.20	3.80	3.60	2.92	1.40	2.60
MLF14	4.85	4.55	4.15	3.95	3.27	1.75	2.95
MLF16	5.20	4.90	4.50	4.30	3.62	2.10	3.30
MLF18	5.55	5.25	4.85	4.65	3.97	2.45	3.65
MLF20	5.90	5.60	5.20	5.00	4.32	2.80	4.00
MLF22	6.25	5.95	5.55	5.35	4.67	3.15	4.35
MLF28	7.30	7.00	6.60	6.40	5.72	4.20	5.40

MLF12/MLF14/MLF16/MLF18/MLF20/MLF22/MLF28 Female (Plug Receptacle)
 (Below is MLF20 Female (Plug Receptacle) for reference.)



Female (Plug Receptacle)

(in mm)

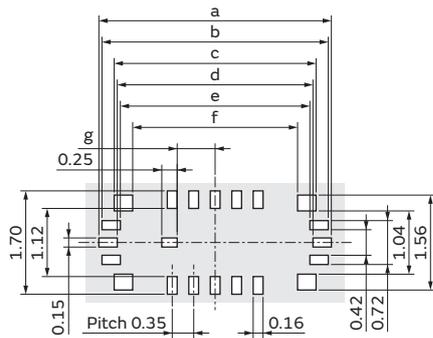
Type	a	b	c	d	e	f	g	h
MLF12	5.43	4.97	4.50	3.90	3.39	2.22	1.82	2.89
MLF14	5.78	5.32	4.85	4.25	3.74	2.57	2.17	3.24
MLF16	6.13	5.67	5.20	4.60	4.09	2.92	2.52	3.59
MLF18	6.48	6.02	5.55	4.95	4.44	3.27	2.87	3.94
MLF20	6.83	6.37	5.90	5.30	4.79	3.62	3.22	4.29
MLF22	7.18	6.72	6.25	5.65	5.14	3.97	3.57	4.64
MLF28	8.23	7.77	7.30	6.70	6.19	5.02	4.62	5.69

Type	i	j	k	l	m	n	o	p
MLF12	5.43	4.97	4.50	3.90	3.39	2.22	1.82	2.89
MLF14	5.78	5.32	4.85	4.25	3.74	2.57	2.17	3.24
MLF16	6.13	5.67	5.20	4.60	4.09	2.92	2.52	3.59
MLF18	6.48	6.02	5.55	4.95	4.44	3.27	2.87	3.94
MLF20	6.83	6.37	5.90	5.30	4.79	3.62	3.22	4.29
MLF22	7.18	6.72	6.25	5.65	5.14	3.97	3.57	4.64
MLF28	8.23	7.77	7.30	6.70	6.19	5.02	4.62	5.69

- There is the possibility to have the contact failure by flux shifting into contact point, if the excess solder is used by non-standard stencil mask pattern. Stencil mask pattern must be followed to avoid soldering defects.

Standard Stencil Mask Pattern

MLF06/MLF08/MLF10 Male (Plug)
 (Below is MLF10 Male (Plug) for reference.)



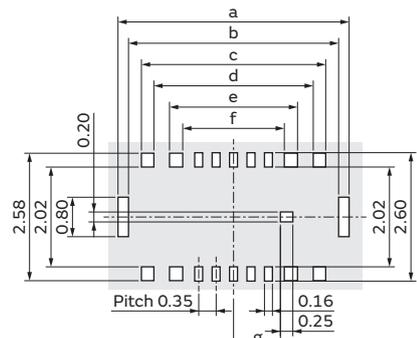
(Thickness: 0.08mm)
 The standard solder cream stencil mask drawing

(in mm)

Male (Plug)

Type	a	b	c	d	e	f	g
MLF06	3.09	2.99	2.59	2.49	2.39	1.99	0.27
MLF08	3.44	3.34	2.94	2.84	2.74	2.34	0.45
MLF10	3.79	3.69	3.29	3.19	3.09	2.69	0.62

MLF06/MLF08/MLF10 Female (Plug Receptacle)
 (Below is MLF10 Female (Plug Receptacle) for reference.)



(Thickness: 0.08mm)
 The standard solder cream stencil mask drawing

(in mm)

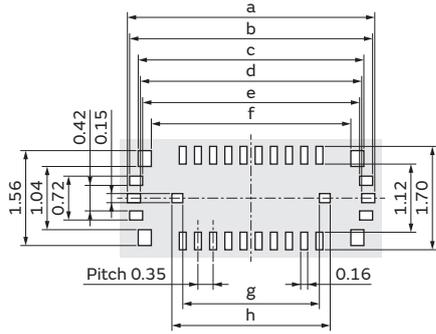
Female (Plug Receptacle)

Type	a	b	c	d	e	f	g
MLF06	3.94	3.52	3.00	2.50	1.87	1.34	0.59
MLF08	4.29	3.87	3.35	2.85	2.22	1.69	0.77
MLF10	4.64	4.22	3.70	3.20	2.57	2.04	0.94

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MLF12/MLF14/MLF16/MLF18/MLF20/MLF22/MLF28 Male (Plug)
 (Below is MLF20 Male (Plug) for reference.)

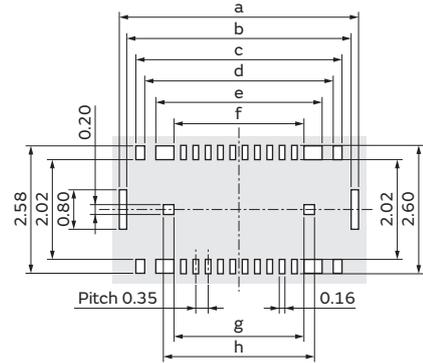


(Thickness: 0.08mm)

The standard solder cream stencil mask drawing

(in mm)

MLF12/MLF14/MLF16/MLF18/MLF20/MLF22/MLF28 Female (Plug Receptacle)
 (Below is MLF20 Female (Plug Receptacle) for reference.)



(Thickness: 0.08mm)

The standard solder cream stencil mask drawing

(in mm)

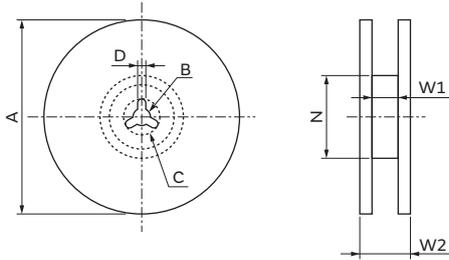
Male (Plug)

Type	a	b	c	d	e	f	g	h
MLF12	4.30	4.20	3.80	3.70	3.60	3.20	1.75	2.25
MLF14	4.65	4.55	4.15	4.05	3.95	3.55	2.10	2.60
MLF16	5.00	4.90	4.50	4.40	4.30	3.90	2.45	2.95
MLF18	5.35	5.25	4.85	4.75	4.65	4.25	2.80	3.30
MLF20	5.70	5.60	5.20	5.10	5.00	4.60	3.15	3.65
MLF22	6.05	5.95	5.55	5.45	5.35	4.95	3.50	4.00
MLF28	7.10	7.00	6.60	6.50	6.40	6.00	4.55	5.05

Female (Plug Receptacle)

Type	a	b	c	d	e	f	g	h
MLF12	5.39	4.97	4.45	3.95	3.32	2.29	2.29	2.89
MLF14	5.74	5.32	4.80	4.30	3.67	2.64	2.64	3.24
MLF16	6.09	5.67	5.15	4.65	4.02	2.99	2.99	3.59
MLF18	6.44	6.02	5.50	5.00	4.37	3.34	3.34	3.94
MLF20	6.79	6.37	5.85	5.35	4.72	3.69	3.69	4.29
MLF22	7.14	6.72	6.20	5.70	5.07	4.04	4.04	4.64
MLF28	8.19	7.77	7.25	6.75	6.12	5.09	5.09	5.69

Dimensions of Reel



Part Number	A	B	C	D	N	W1	W2
MM3529-2700A**RA5	180+0/-3.0	13±0.2	21±0.8	2±0.5	Dia. 60±1.0/-0	13±1.0/-0	15.4±1.0
MM3531-270*A**RA5						17±1.0	19.4±1.0
MM3531-2700A**RE5							
MM3529-2700A22RA5							
MM3529-2700A28RA5						330±2.0	13±0.2
MM3531-2700A**RB18	17.4±1.0	21.4±1.0					
MM3531-2700A**RF18							
MM3531-270*A**RB18							
MM3529-2700A22RB18							
MM3529-2700A28RB18							
MM3531-2700A22RH18							
MM3531-2700A28RH18							

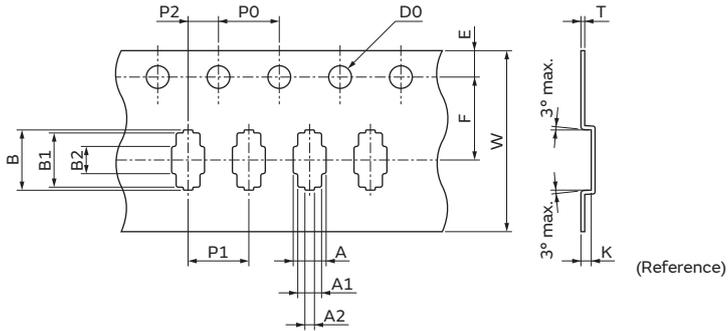
(in mm)

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Dimensions of Taping

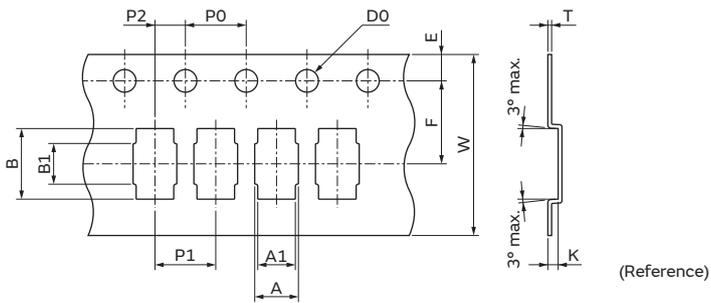
Male (Plug)



Type	A	A1	A2	B	B1	B2	W	D0	E	F	K	PO	P1	P2	T
MLF06				3.29±0.05	2.90±0.05	1.10±0.2	12±0.2	Dia.1.5+0.1/-0	1.75±0.1	5.5±0.05	0.68±0.05	4±0.1	4±0.1	2±0.05	0.25±0.05
MLF08	2.17±0.1	1.57±0.05	0.63±0.1	3.64±0.05	3.25±0.05	1.45±0.2									
MLF10				3.99±0.05	3.6±0.05	1.8±0.2									
MLF12				4.50±0.05	4.11±0.05	2.51±0.2									
MLF14				4.85±0.05	4.46±0.05	2.68±0.2									
MLF16		1.62±0.05	0.68±0.1	5.20±0.05	4.81±0.05	3.21±0.2									
MLF18	2.22±0.1			5.55±0.05	5.16±0.05	3.56±0.2									
MLF20				5.9±0.05	5.51±0.05	3.91±0.2									
MLF22				6.26±0.1	5.86±0.05	4.14±0.2									
MLF28		1.66±0.05	0.50±0.1	7.31±0.1	6.91±0.05	5.19±0.2									

(in mm)

Female (Plug Receptacle)



Type	A	A1	B	B1	W	D0	E	F	K	PO	P1	P2	T
MLF06			3.98±0.05	1.98±0.2	12±0.2	Dia.1.5+0.1/-0	1.75±0.1	5.5±0.05	0.68±0.05	4±0.1	4±0.1	2±0.05	0.25±0.05
MLF08			4.33±0.05	2.33±0.2									
MLF10			4.68±0.05	2.68±0.2									
MLF12			5.43±0.05	3.43±0.2									
MLF14			5.78±0.05	3.78±0.2									
MLF16	2.88±0.1	2.48±0.05	6.13±0.05	4.13±0.2									
MLF18			6.48±0.05	4.48±0.2									
MLF20			6.83±0.05	4.83±0.2									
MLF22			7.18±0.05	5.18±0.2									
MLF28			8.23±0.05	6.23±0.2									

(in mm)

Minimum Quantity

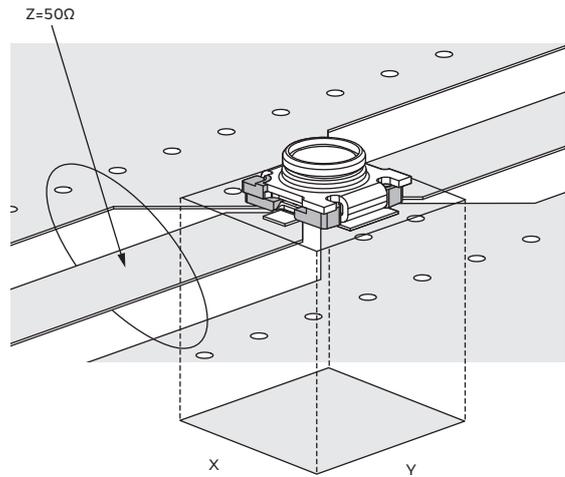
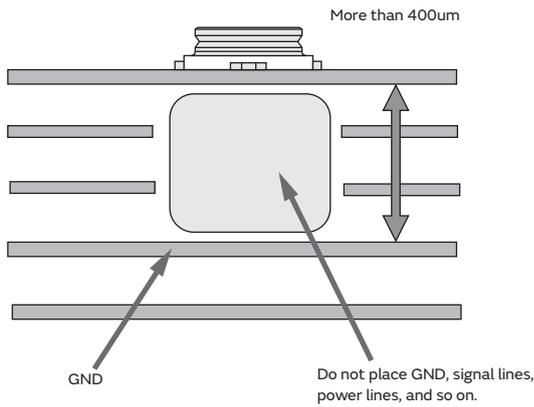
MM35**-270*A**R*5: 180 mm dia. reel/5000 pcs.

MM35**-270*A**R*18: 330 mm dia. reel/18000 pcs.

Notice (Design)

Microwave Coaxial Connectors with Switch

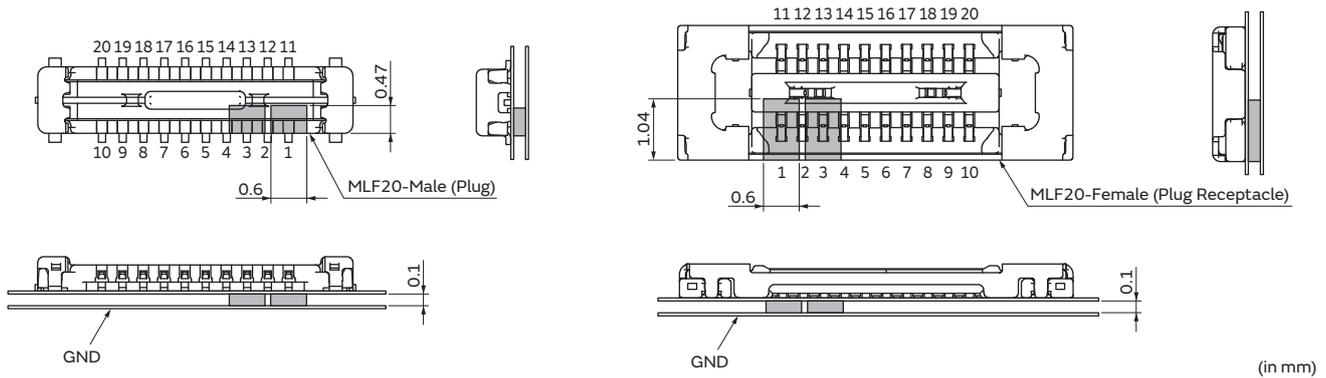
Connector performance is influenced by GND among inner layers of substrate.
 We recommend making space more than 0.4mm between connectors and GND.
 And please avoid placing signal lines and power lines under connectors to prevent interference with signals which pass connectors.



Part Number	X	Y
MM8130-2600	2.8	2.9
MM8030-2610	2.3	2.3
MM8930-2600	1.7	1.8
MM8930-2620	1.7	1.8
MM8830-2600	1.3	1.5

Microwave Multi Line Connector (Board-to-board/board to-FPC connectors)

Hatched space is keep out area underneath connector.
 Don't put any signal lines and ground patterns in hatched space.
 And put GND layer underneath connector. (Gap: 0.1mm)
 RF line is Pin1 and 3 for reference.



Notice (Engagement/Disengagement)

Microwave Multi Line Connector

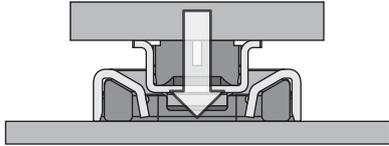
Please mate to connectors when centering them and keeping parallel state.

Mating is completed when you feel the click.

Please confirm if mating height is in specification after mating is completed.

Please do not stress more than 30N when mating connectors.

Multi Line Connector



Type of Probes

We have lineup of measurement probes that are designed for Murata connectors.
Please use Murata probes for Murata connectors.

Manual probe without cable



This is used for evaluation in lab. Measurement cable is able to be attached with this probe. This probe stands itself after mating is completed, because it has claw at contact point with connectors. Any stress to probe via cable after engagement may cause that probe come off, connectors get damage, or electrode peel off.

Auto probe without floating mechanism



This probe is used for inspection in mass production process. Probes are built in measurement fixture, and pressed at connectors. This probe will not damage connectors because it doesn't have locking function by claw. Measurement fixture needs to have floating mechanism since the probe doesn't have floating mechanism itself.

Measurement cable is able to be attached with this probe.

Auto probe (tension free type)



This probe is used for inspection in mass production process. It has same function as Auto probe with floating mechanism. This probe is not affected by cable tension because of its special construction. The probe makes conversion cable easy to be handled.

Manual probe with cable



This is used for evaluation in lab. Measurement cable is assembled with probes. This probe stands itself after mating is completed, because it has claw at contact point with connectors. Any stress to probe via cable after engagement may cause that probe come off, connectors get damage, or electrode peel off.

Auto probe with floating mechanism



This probe is used for inspection in mass production process. Probes are built in measurement fixture, and pressed at connectors. This probe will not damage connectors because it doesn't have locking function by claw. Measurement fixture doesn't need to have floating mechanism since the probe has floating mechanism itself.

Calibration adapter



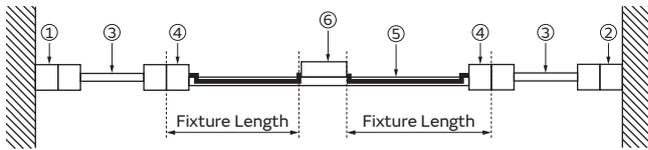
This adapter is used for calibrating probes. This has SMA connector on one side and Murata connector shape on the other side. It can connect cable from network analyzer and tip of probe.

Electrical Performance Measurement System (Insertion Loss, VSWR)

1. Measurement method of switch connectors

Insertion Loss/VSWR

Removing test fixture characteristics from the overall measured results.



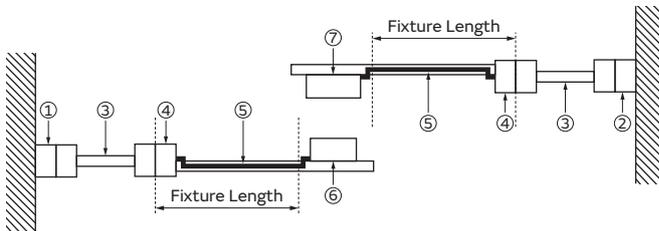
- ① Network Analyzer Port1
- ② Network Analyzer Port2
- ③ Microwave Coaxial Cable
- ④ Interface Connector
- ⑤ Printed Circuit Board Transmission Line
- ⑥ Microwave Switch Connector

2. Measurement method of multi line connectors

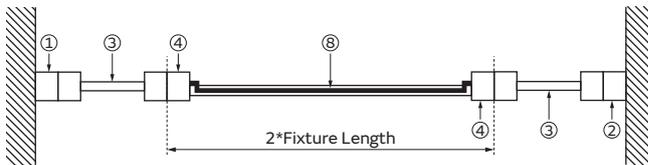
[1] Insertion Loss

Removing fixture characteristics from the test results(1) by AFR.(Return loss)
 Removing (2) from the test(1) results.

Test condition (1)



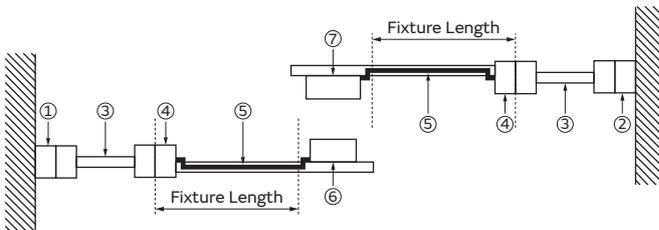
Test condition (2)



- ① Network Analyzer Port1
- ② Network Analyzer Port2
- ③ Microwave Coaxial Cable
- ④ Interface Connector
- ⑤ Printed Circuit Board Transmission Line
- ⑥ Microwave Multi Line Connector (Male (Plug))
- ⑦ Microwave Multi Line Connector (Female (Plug Receptacle))
- ⑧ Printed Circuit Board 2*Thru Line

[2] VSWR

Removing fixture characteristics from the test results by AFR.



- ① Network Analyzer Port1
- ② Network Analyzer Port2
- ③ Microwave Coaxial Cable
- ④ Interface Connector
- ⑤ Printed Circuit Board Transmission Line
- ⑥ Microwave Multi Line Connector (Male (Plug))
- ⑦ Microwave Multi Line Connector (Female (Plug Receptacle))

Mechanical Performance Measurement System (Engagement/Disengagement Force)

1. Engagement/Disengagement force

[1] Engagement force

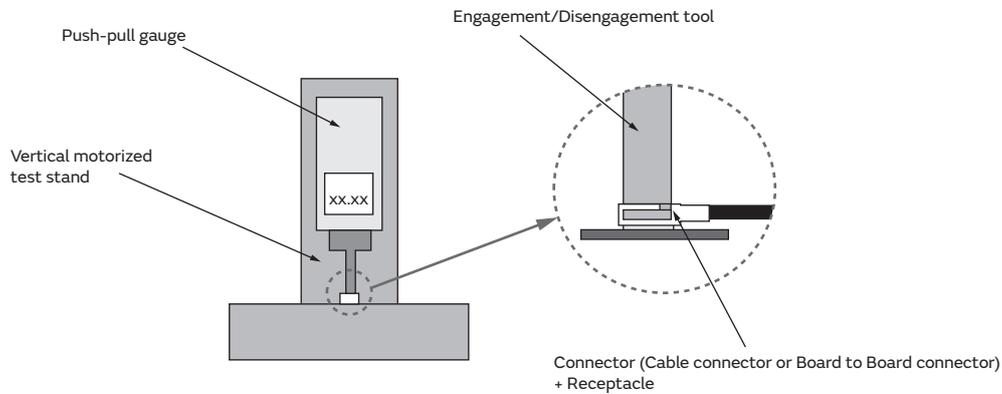
To measure require force for complete engagement connectors and receptacles.

Measuring engagement maximum force by pushing down of push-pull gauge with engagement/disengagement tool on the tip.

[2] Disengagement force

To measure require force for complete disengagement connectors and receptacles from mated state.

Measuring disengagement maximum force by pulling up of push-pull gauge with engagement/disengagement tool on the tip.



Notice

Notice (Storage and Operating Condition)

1. Environment Conditions

- (1) This product is designed for use in electrical equipment in the environment (temperature, humidity, atmospheric pressure, etc.) specified in this approval drawing. It may not be used in the following environments or under the following conditions:
- (a) Ambient air containing corrosive gas (Cl₂, H₂S, NH₃, SO_x, NO_x etc.).
 - (b) Ambient air containing volatile or combustible gas.
 - (c) In liquid (water, oil, chemical solution, organic solvents, etc.).
 - (d) In environments with a high concentration of airborne particles.
 - (e) In direct sunlight.
 - (f) Dusty conditions.
 - (g) In freezing.
 - (h) Other environments similar to the above conditions.
- (2) Contact the manufacturer before using the product in any of the above environments or under any of the above conditions.

2. Storage

Store in manufacturer's package or tightly re-closed box with the following conditions. Use this product within 6 months after receipt. Check the terminal solderability before use if the product has been stored for more than 6 months.

Temperature: -10 to +40 degree C
 Humidity: 15 to 85% RH

Notice (Soldering and Mounting)

1. Reflow soldering

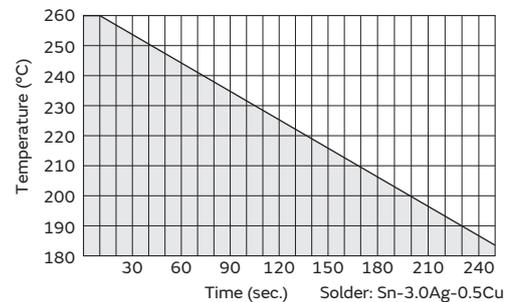
Soldering must be carried out without exceeding the allowable soldering temperature and time shown within the shaded area of Figure "Allowable Temperature and Time of Reflow Soldering".

In case the soldering is repeated, the maximum time in Figure "Allowable Temperature and Time of Reflow Soldering" should be accumulated time. The standard soldering conditions are shown in Figure "Reflow Soldering Standard Conditions".

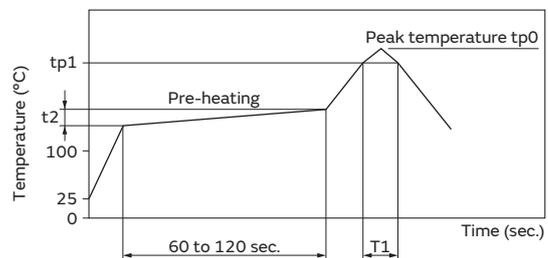
Follow standard pattern dimensions.

- 2. Please contact us before use if concerning other soldering conditions.
- 3. In soldering, do not apply excessive mechanical force to terminals or leads greater than specified in the drawing.
- 4. Please note the following in case of soldering terminals or leads of the product.
 - (1) Use Rosin based flux, but not with strong acid flux (Chlorine content should be less than 0.20wt%).
 - (2) Please be careful of sticking the flux inside of the product due to flux invasion.
- 5. Please mount this product at the position so that stress by wrap and/or bend of the PCB may not apply to it.
- 6. Please dry out this product immediately after soldering and cleaning.
- 7. Please avoid the cleaning of this product for Microwave Coaxial Connector with Switch.

Allowable Temperature and Time of Reflow Soldering



Reflow Soldering Standard Conditions



	tp0 (°C)	tp1 (°C)	T1 (sec.)	t2 (°C)
Standard soldering condition	240+0/-5	220	30 to 60	150 to 180
Resistance to soldering heat condition	260+5/-0	240	30max.	150 to 180

Measuring point of temperature: In-Out Terminals of the Device
 Reflow Soldering: Both Convection and Infrared Rays
 : Hot Air
 : Hot Plate

Global Locations

For details please visit www.murata.com



⚠️ Precautions for use

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- | | |
|---|--|
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| ③ Undersea equipment | ④ Power plant control equipment |
| ⑤ Medical equipment | ⑥ Transportation equipment |
| ⑦ Traffic control equipment | ⑧ Disaster prevention/security equipment |
| ⑨ Industrial data-processing equipment | |
| ⑩ Combustion/explosion control equipment | |
| ⑪ Equipment with complexity and/or required reliability equivalent to the applications listed in the above. | |

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