

# Microwave Coaxial Connectors



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1

2

3

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5

## ● Part Numbering

### Coaxial Connectors (Chip Type Receptacle)

(Part Number) 

MM	7329	-27	00	R	A1
①	②	③	④	⑤	⑥

#### ① Product ID

Product ID	
<b>MM</b>	Microwave Coaxial Connectors (Chip Type Receptacle)

#### ② Series

Code	Series
<b>3325</b>	BFA Type Straight
<b>3326</b>	BFA Type Right Angle
<b>4829</b>	HSC Type
<b>7329</b>	FSC Type
<b>8430</b>	SWD Type
<b>9329</b>	GSC Type

#### ③ Individual Specification Code (1)

Code	Individual Specification Code (1)
<b>-25</b>	Discrete Terminal
<b>-26</b>	Switch Connector SMD Type
<b>-27</b>	Connector SMD Type

#### ④ Individual Specification Code (2)

Code	Individual Specification Code (2)
<b>00</b>	Serial

#### ⑤ Package Product ID

Code	Package Product ID
<b>B</b>	Bulk
<b>R</b>	Reel

#### ⑥ Package Detail

Code	Package Detail
<b>A1</b>	FSC, SWD, GSC Type 1000pcs. /Reel (ø178mm)
<b>A4</b>	HSC Type, 4000pcs. /Reel (ø178mm)
<b>B0</b>	HSC Type, 10000pcs. /Reel (ø330mm)
<b>B3</b>	SWD Type, 3000pcs. /Reel (ø330mm)
<b>B4</b>	FSC Type, 4000pcs. /Reel (ø330mm)
<b>B5</b>	GSC Type, 5000pcs. /Reel (ø330mm)

### Coaxial Connectors (with Cable)

(Part Number) 

MX	FG	76			
①	②	③	④	⑤	⑥

#### ① Product ID

Product ID	
<b>MX</b>	Coaxial Connectors (with Cable)

#### ② Connector (1)

Code	Connector (1)
<b>FG</b>	FSC Type for 76 Cable
<b>FK</b>	FSC Type for 81 Cable
<b>HK</b>	HSC Type
<b>TK</b>	GSC Type
<b>YH</b>	BFA Type

#### ③ Cable

Code	Cable
<b>62</b>	0.8D, PE, Double Shield Line
<b>63</b>	0.8D, PE, Single Shield Line
<b>75</b>	0.8D, FEP, Double Shield Line
<b>76</b>	0.8D, FEP, Single Shield Line
<b>81</b>	0.4D, FEP, Single Shield Line
<b>88</b>	0.4D, PFA, Single Shield Line, Single Line
<b>92</b>	0.4D, PFA, Single Shield Line, Spiral
<b>98</b>	0.4D, PFA, Single Shield Line, Spiral

#### ④ Connector (2)

Code	Connector (2)
<b>FG</b>	FSC Type for 76 Cable
<b>FK</b>	FSC Type for 81 Cable
<b>HK</b>	HSC Type
<b>TK</b>	GSC Type
<b>YH</b>	BFA Type
<b>XX</b>	None Connector

#### ⑤ Length

Expressed by four figures. The unit is mm. From first to third figures are significant, and the fourth figure expresses the number of zeros which follow the three figures.

Ex.)

Code	Length
<b>5000</b>	500mm = 500 x 10 <sup>0</sup>
<b>1001</b>	1000mm = 100 x 10 <sup>1</sup>

#### ⑥ Individual Specification Code

Expressed by two sign.

# Microwave Coaxial Connectors



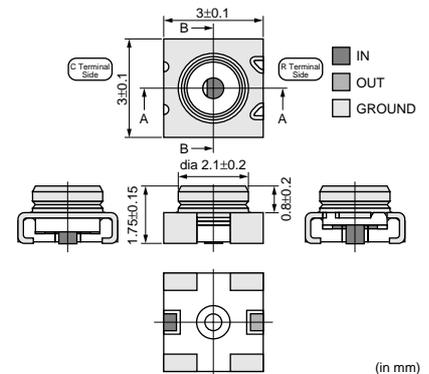
## Microwave Coaxial Connectors with Switch SWD Type

### ■ Features

1. The coaxial connector with switch is very useful for characteristic measurement of hand held phone and microwave circuit.
2. It is possible to switch the line connection and disconnection easily by special probe.
3. Small size, low profile, size 3x3x1.75mm (LxWxH)
4. Excellent characteristics, low IL 0.2dB max.  
V.S.W.R. 1.3 max. Isolation 15dB min. (DC to 6GHz)
5. Surface mountable and reflow solderable
6. Tape package available



MM8430-2610B



### ■ Applications

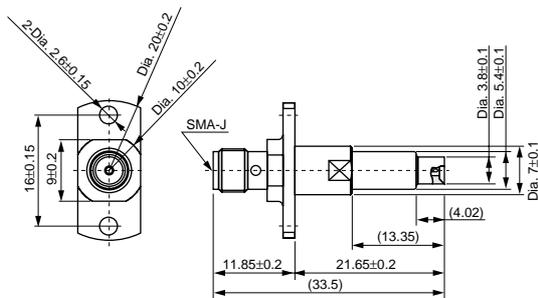
Cellular phone, W-LAN, Other wireless and measurement equipment

Part Number	Rated Voltage (Vrms)	Contact Resistance (max.) (ohm)	Withstand Voltage (Vrms)	Insulation Resistance (M ohm)	Durability (cycles)	Frequency Rating	Temperature Range (degree C)	VSWR	Insertion Loss (On) (dB)	Isolation (Off) (dB)	Inner Electrode (C)	Inner Electrode (R) (material)	Outer Electrode (material)
<b>MM8430-2610</b>	250	0.05	300 (AC)	500	500	to 6GHz	-40 to +85	1.2 max. (DC to 3GHz)	0.1 max. (DC to 3GHz)	20 min. (DC to 3GHz)	Stainless Steel Gold plated	Copper Alloy Gold plated	Copper Alloy Silver plated

Impedance: 50ohm

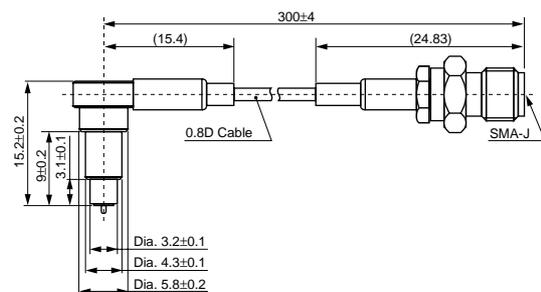
### ■ Measurement Probe Dimensions

MM126036



(in mm)

MXGS83RK3000



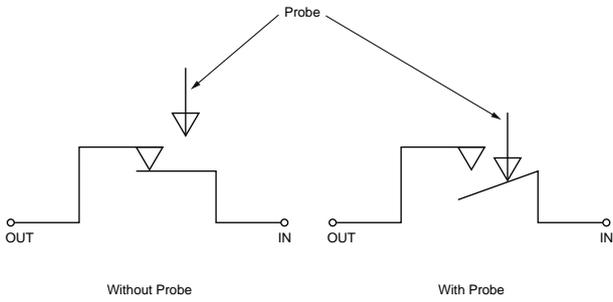
(in mm)

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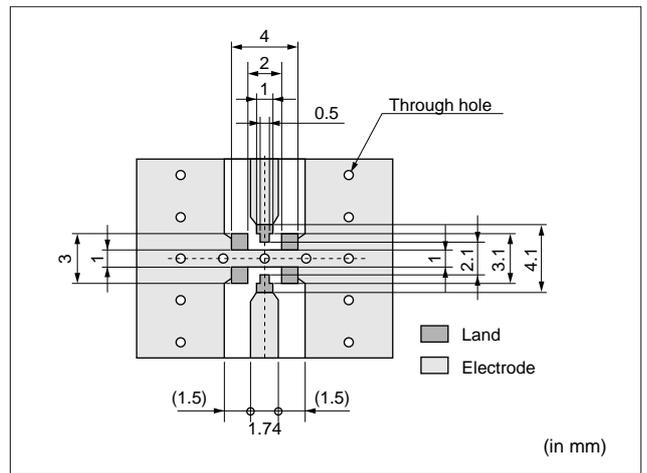
■ Structure



■ Standard Land Dimensions

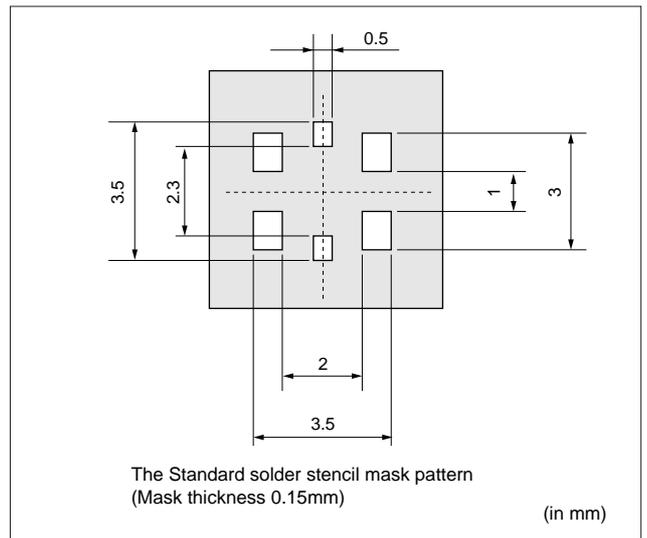
1. Standard pattern dimensions

- I/O pattern should be designed to match 50 ohm impedance circuit.
- Typical PCB material is glass epoxy ( $\epsilon_r=4.8$ ). Thickness is 1.0mm.
- The solder resist should be printed except for the land pattern on the PCB.



2. Standard solder stencil mask pattern

Follow Standard solder stencil mask pattern to avoid the possibility of solder being trapped under connector.



## ■ 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 (Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, 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

### ■ 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 solder stencil mask pattern to avoid the possibility of solder being trapped under connector.

#### 2. Soldering by soldering iron

Soldering by soldering iron should be carried out in accordance to the following conditions.

Pre-heating	Temperature	150°C
	Time	60 to 120 s.
Soldering	Temperature (at the tip of the soldering iron)	less than 350°C
	Time	less than 3 s.

3. We cannot warrant against mishaps caused by any use of this product that deviates from allowable temperature and time of reflow soldering.

4. In soldering, do not apply excessive mechanical force to terminals or leads greater than specified in the drawing.

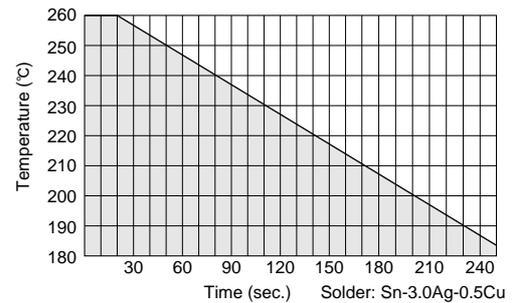
5. Please note the following in case of soldering terminals or leads of the product.

- (1) Use Rosin based flux, but not with strong acid flux (Chlorine content should be less than 0.20wt%).
- (2) Flux should be thoroughly cleaned from connector to prevent possible deterioration of electrical characteristics.

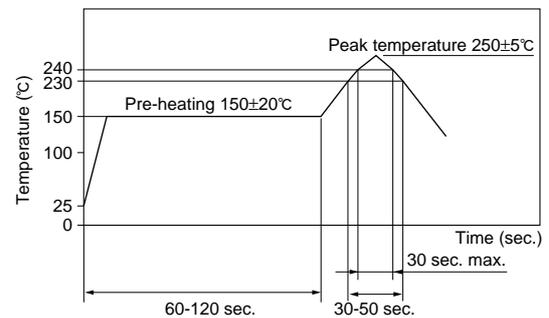
6. Please mount this product at the position so that stress by wrap and/or bend of the PCB may not apply to it.

7. Please avoid the cleaning of this product.

Allowable Temperature and Time of Reflow Soldering



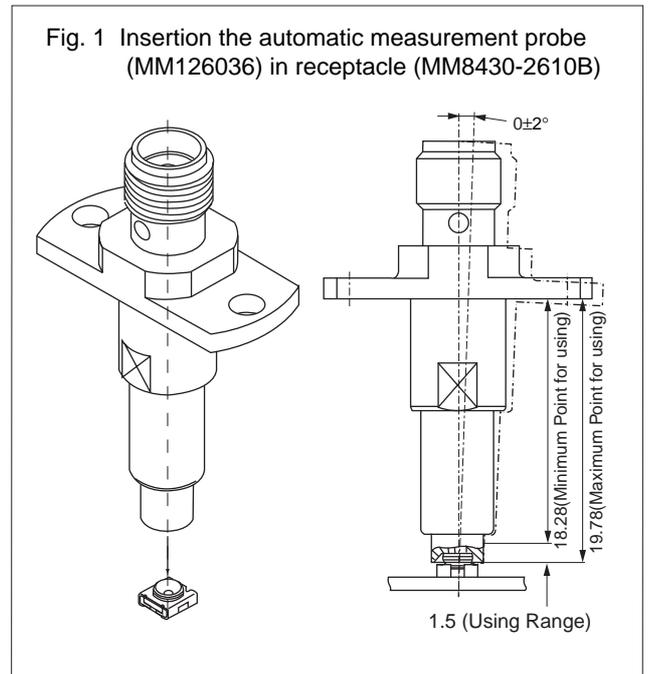
Reflow Soldering Standard Conditions



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

■ Notice (Handling)

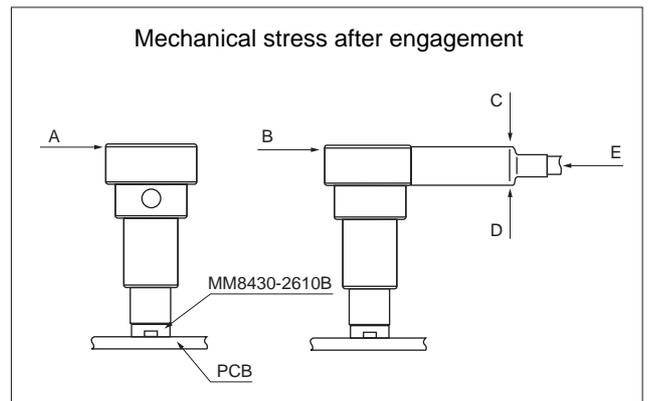
1. Automatic measurement probe (MM126036)
  - Automatic measurement probe (MM126036) should be used under conditions in Fig. 1 for good connection without any damages.
  - The engagement strokes from the flange to the tip of probe is 18.28mm to 19.78mm with vertical ( $0\pm 2^\circ$ ) direction.



2. L type probe with locking function (MXGS83RK3000)
  - Avoid pulling cable when probe is locked into connector.
  - Avoid twisting probe or cable when engaging or disengaging from connector.
  - Mechanical stress:
 

The stress to the connector should be limited as figure shown right.

    - (1) Stress to the housing.  
Stress A and B: 0.7N max.
    - (2) Stress to the outer sleeve.  
Stress C: 0.6N max.  
Stress D: 0.6N max.
    - (3) Cable pull strength.  
Stress E: 0.7N max.

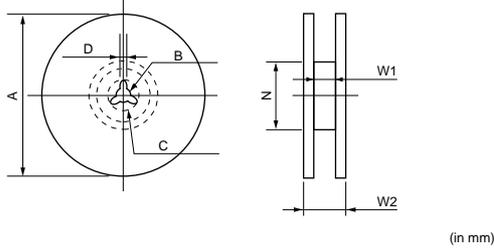


3. Usage Condition
  - (1) Do not apply electrical voltage greater than specified in the catalog. It might cause degradation or destruction of the product. Even if it endures during a short time, long time qualification is not guaranteed.
  - (2) Confirm that product performance is not influenced with any other components or materials which directly contact products.
4. Handling
 

Avoid excessive stress when handling and transporting printed circuit board after connector and/or assembly has been secured to PCB.

# Package

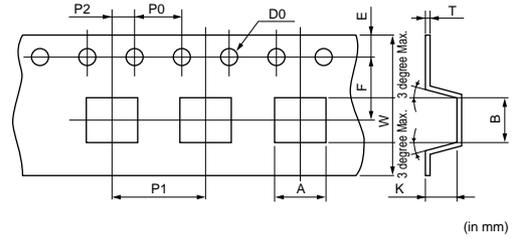
## ■ Dimensions of Reel



(in mm)

Murata Part Number	A	B	C	D	N (min.)	W1	W2 (max.)
MM8430-2610RA1	178	13	21	2	Dia. 50	13.5	18.5
MM8430-2610RB3	330	13	21	2	Dia. 50	13.5	18.5
TOLERANCE	±2.0	±0.5	±0.8	±0.5	-	±1.5	-

## ■ Dimensions of Taping



(in mm)

A	B	W	D0	E	F	K
3.4±0.1	3.4±0.1	12±0.2	Dia.1.5±0.1	1.75±0.1	5.5±0.1	2.0±0.15

P0	P1	P2	T
4±0.1	8±0.1	2±0.1	0.3±0.05

## ■ Minimum Quantity

MM8430-2610RA1: 180mm dia. reel/1000 pcs.

MM8430-2610RB3: 330mm dia. reel/3000 pcs.

MM8430-2610B: Bulk/free

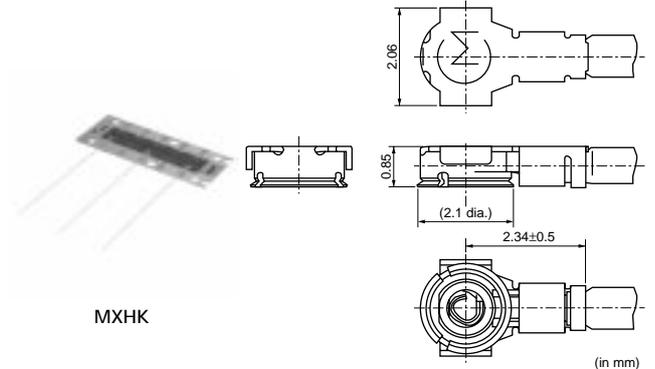
# Microwave Coaxial Connectors



## Ultra Miniature SMT HSC Type

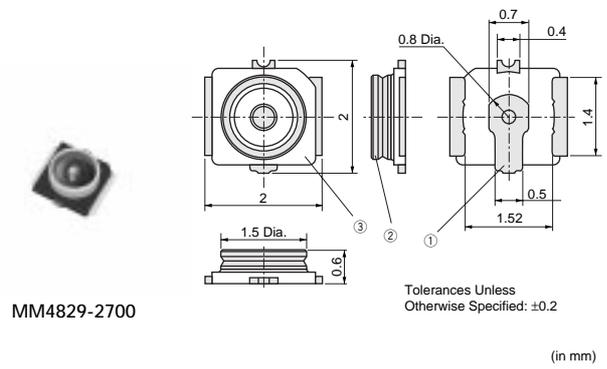
### ■ Features

1. The mating height is only 1.2mm maximum by new mechanical design. Suitable for low profile design.
2. Receptacle size is 2.0x2.0mm. Suitable high density
3. New mating mechanical design makes stable feeling connection.
4. High performance with wide frequency range (DC to 6GHz).  
 V.S.W.R. at DC to 3GHz is 1.3 maximum.  
 V.S.W.R. at 3GHz to 6GHz is 1.45 maximum.
5. Surface mountable and reflow solderable.
6. Tape package available.



### ■ Applications

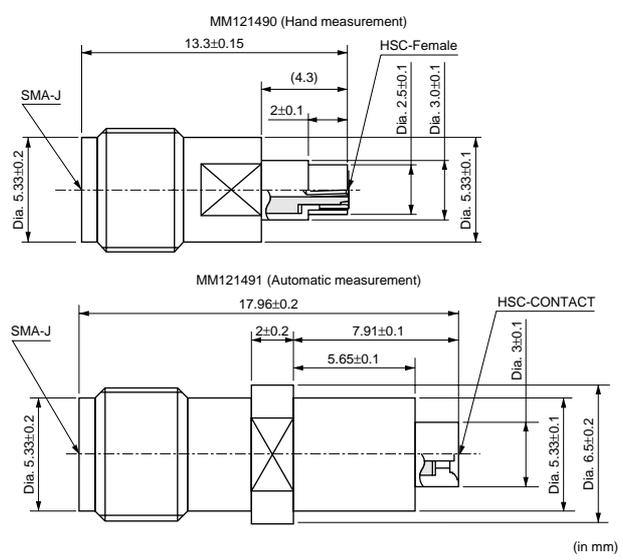
Portable telephone, cordless telephone (analog and digital), GPS, and other microwave radio and measurement equipment.



Part Number	Rated Voltage (V)	Contact Resistance (max.) (ohm)	Withstanding Voltage (rms)	Insulation Resistance (min.) (M ohm)	Durability (cycles)	Frequency Rating (GHz)	Temperature Range (degree C)	VSWR	Center Contact	Outer Contact	Insulator
<b>MM4829-2700</b>	250	0.020	300 (AC)	500	30	to 6.0	-40 to +85	1.3 max. (DC to 3GHz)	Copper Alloy Gold plated	Copper Alloy Silver plated	Engineering plastic

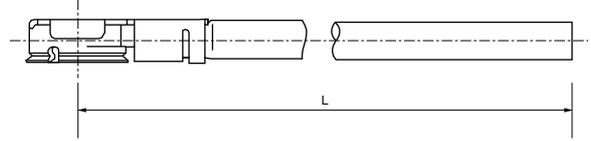
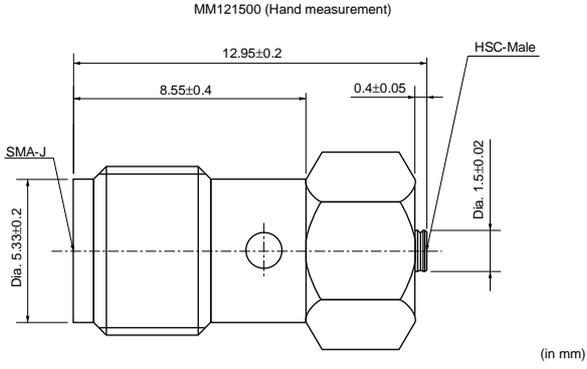
Impedance: 50ohm

### ■ Measurement Probe Dimensions (for Receptacle)



2

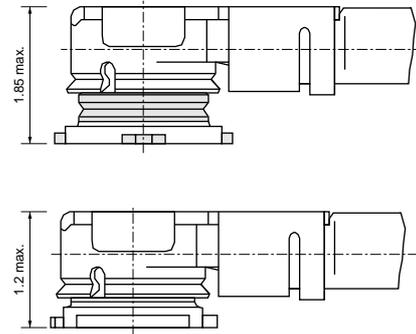
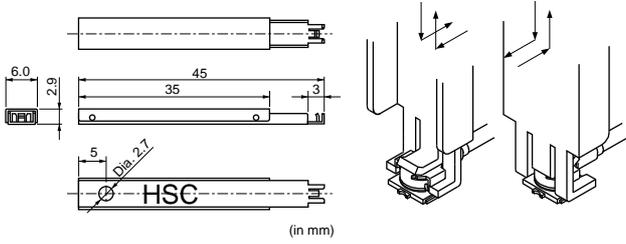
■ Measurement Probe Dimensions (for Cable Assembly) ■ Cable Length Tolerance



Cable Length L (mm)		Dimensional Tolerance (mm)
Over	Less than	
20	100	±3
100	500	±4
500	1000	±10
1000	-	+2% of L -0% of L

■ Disengagement Tool (Part Number: M19100)

■ Profile Dimensions



(in mm)

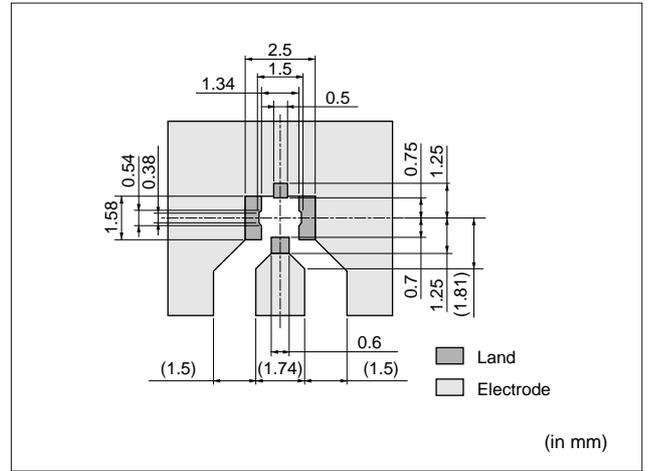
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## Land Pattern Dimensions

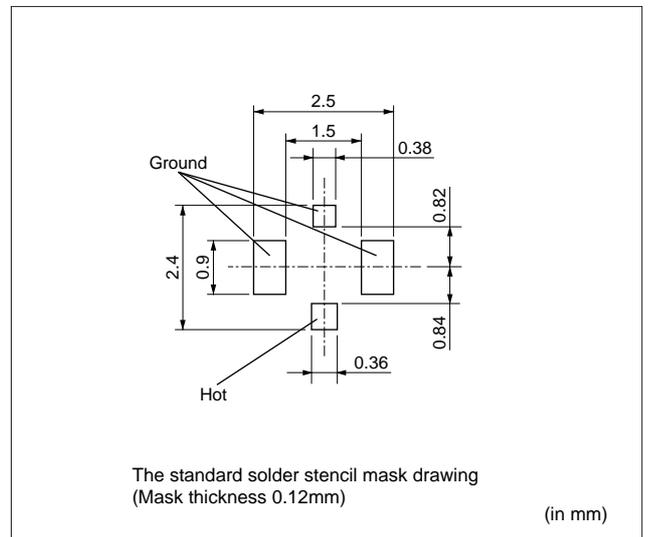
### 1. Standard pattern dimensions

- I/O pattern should be designed to match 50 ohm impedance circuit.
- Typical PCB material is glass epoxy ( $\epsilon_r=4.8$ ). Thickness is 1.0mm.
- The solder resist should be printed except for the land pattern on the PCB.



### 2. Standard solder stencil mask pattern

Follow Standard solder stencil mask pattern to avoid the possibility of solder being trapped under connector.



## Notice

### ■ Notice (Storage and Operation 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 (Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, 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**

■ **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".

Use the Pattern and Metal mask pattern is illustrated in details.

Follow standard solder stencil mask pattern to avoid the possibility of solder being trapped under connector.

2. **Soldering by soldering iron**

Soldering by soldering iron should be carried out in accordance to the following conditions.

Pre-heating	Temperature	150°C
	Time	60 to 120 s.
Soldering	Temperature (at the tip of the soldering iron) less than	350°C
	Time	less than 3 s.

3. We cannot warrant against mishaps caused by any use of this product that deviates from allowable temperature and time of reflow soldering.

4. In soldering, do not apply excessive mechanical force to terminals or leads greater than specified in the drawing.

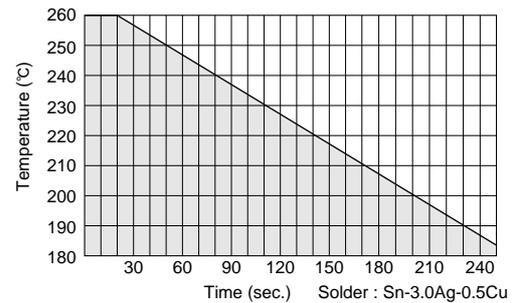
5. Please note the following in case of soldering terminals or leads of the product.

- (1) Use Rosin based flux, but not with strong acid flux (Chlorine content should be less than 0.20wt%).
- (2) Flux should be thoroughly cleaned from connector to prevent possible deterioration of electrical characteristics.

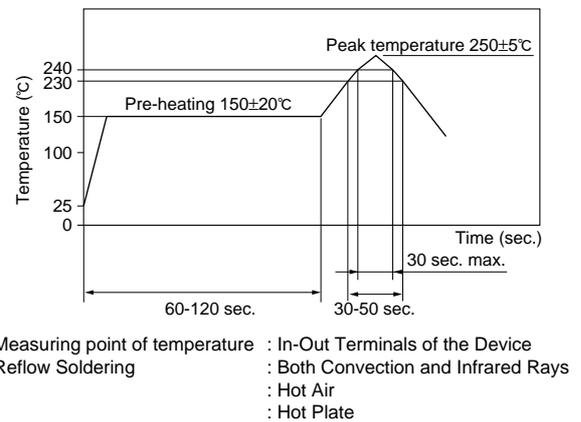
6. Please mount this product at the position so that stress by wrap and/or bend of the PCB may not apply to it.

7. Please dry out this product immediately after soldering and cleaning.

**Allowable Temperature and Time of Reflow Soldering**



**Reflow Soldering Standard Conditions**



Continued on the following page. ↗

## Notice

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### ■ Notice (Handling)

#### 1. Usage Condition

- (1) Do not apply electrical voltage greater than specified in the drawing. It might cause degradation or destruction of the product. Even if it endures during a short time, long time qualification is not guaranteed.
- (2) Confirm product's performance is not influenced by contact of other components.
- (3) Please contact the manufacturer beforehand, if the product is to be used in frequently bent position.

#### 2. Handling

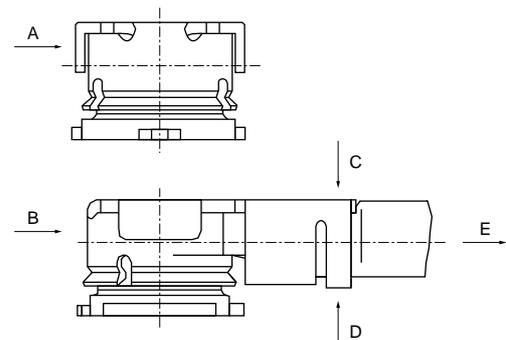
- (1) Avoid excessive stress when handling and transporting printed circuit board after connector and/or assembly has been secured to PCB.
- (2) Do not try to pull the cable, when a connector with a coaxial cable is handled.
- (3) Disregarding the following notes could cause mechanical damage and/or poor electrical performance.

#### 3. Handling Instructions

- (1) Cable is designed to fit only with MM4829-2700B receptacle. Any other receptacle cannot be used with this cable.
- (2) Disengagement:  
Use tool P/N M19100 to insert or remove cable in a vertical direction from receptacle. Avoid pulling only the cable to prevent cable damage.
- (3) Avoid twisting probe or cable when engaging or disengaging from connector.
- (4) Mechanical stress:  
The stress to the connector should be limited as shown in Figure 1.

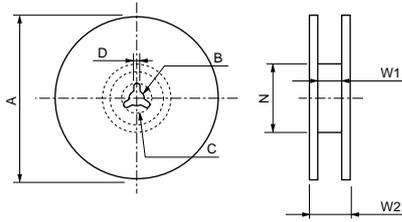
- (a) Stress to the housing.  
Stress A and B: 5.0N max.
- (b) Stress to the outer sleeve.  
Stress C: 3.0N max.  
Stress D: 1.0N max.
- (c) Cable pull strength.  
Stress E: 5.0N max.

Figure 1. Mechanical stress after engagement



## Package

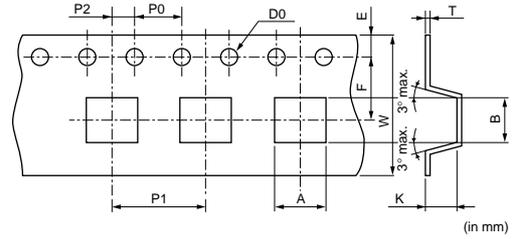
### ■ Dimensions of Reel



(in mm)

Murata Part Number	A	B	C	D	N (min.)	W1	W2 (max.)
MM4829-2700RA4	180 0/-3	13	21	2	Dia. 60	9	11.4
MM4829-2700RB0	330±2.0	13	21	2	Dia. 100	9.4	13.4
TOLERANCE	—	±0.2	±0.8	±0.5	±1.0	±1.0	±1.0

### ■ Dimensions of Taping



(in mm)

A	B	W	D0	E	F	K
2.35±0.1	2.35±0.1	8±0.2	Dia. 1.5 <sup>+0.1</sup> <sub>-0</sub>	1.75±0.1	3.5±0.1	0.75±0.15

P0	P1	P2	T
4±0.1	4±0.1	2±0.1	0.25±0.05

### ■ Minimum Quantity

MM4829-2700RA4: 180mm dia. reel/4000 pcs.

MM4829-2700RB0: 330mm dia. reel/10000 pcs.

MM4829-2700B: Bulk/free

# Microwave Coaxial Connectors

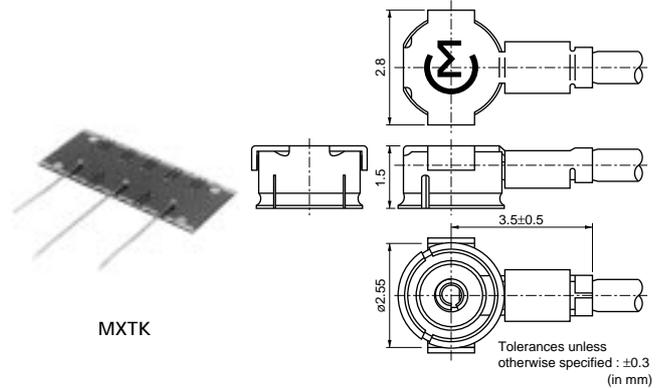


## Miniature SMT GSC Type

3

### ■ Features

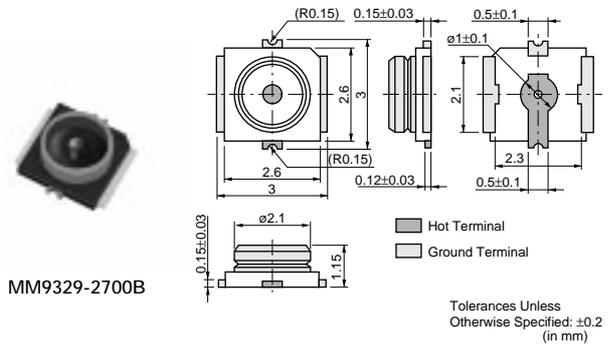
1. The mating height is only 2mm maximum by new mechanical design. Suitable for low profile design
2. Receptacle size is 3.0x3.0mm, suitable high density.
3. New mating mechanical design makes stable feeling connection.
4. High performance with wide frequency range (DC to 6GHz).  
 V.S.W.R. at DC to 3GHz is 1.2 maximum.  
 V.S.W.R. at 3GHz to 6GHz is 1.3 maximum.
5. Surface mountable and reflow solderable
6. Tape package available



MXTK

### ■ Applications

Portable telephone, cordless telephone (analog and digital), GPS, and other microwave radio and measurement equipment.

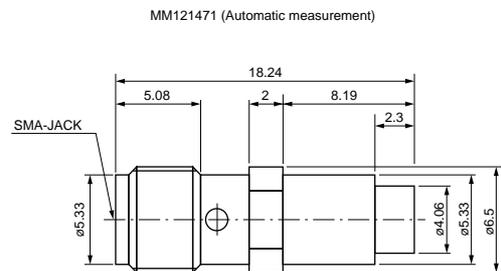
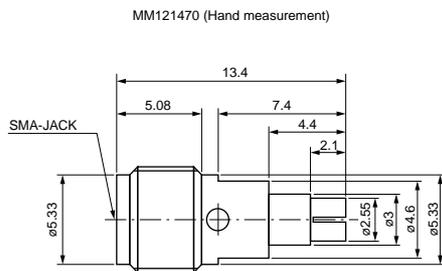


MM9329-2700B

Part Number	Rated Voltage (V)	Contact Resistance (max.) (ohm)	Withstanding Voltage (rms)	Insulation Resistance (min.) (M ohm)	Durability (cycles)	Frequency Rating (GHz)	Temperature Range (degree C)	VSWR	Center Contact	Outer Contact	Insulator
<b>MM9329-2700</b>	250	0.015	300 (AC)	500	100	to 6.0	-40 to +90	1.2 max. (DC to 3GHz)	Copper Alloy Gold plated	Copper Alloy Silver plated	Engineering plastic

Impedance: 50ohm

### ■ Measurement Probe Dimensions (for Receptacle)

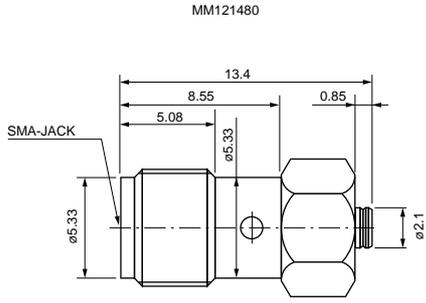


(in mm)

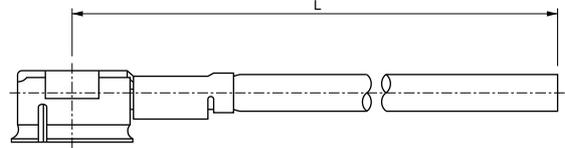
Continued on the following page.

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■ Measurement Probe Dimensions (for Cable Assembly) ■ Cable Length Tolerance



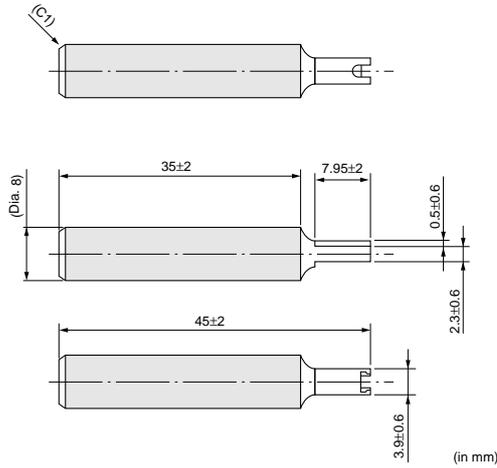
(in mm)



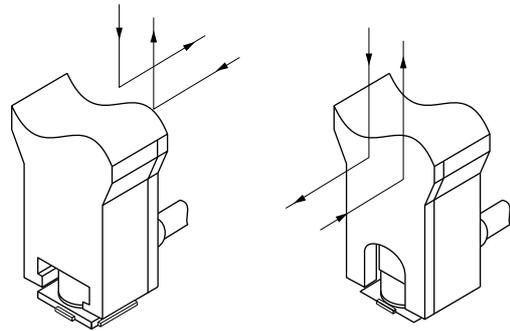
Cable Length L (mm) (+)		Dimensional tolerance (mm)
Over	Till	
40	100	±3
100	500	±4
500	1000	±10
1000	-	+2% of L -0% of L

\*L must be 20mm Min.

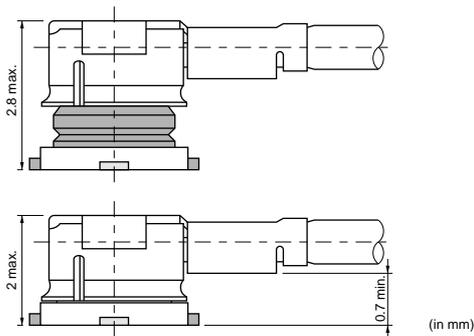
■ Disengagement Tool (Part Number: M22001)



(in mm)



■ Profile Dimensions



(in mm)

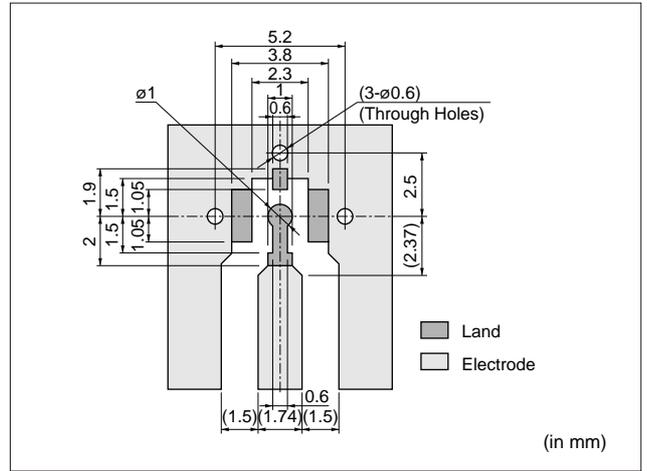
Continued on the following page. ↗

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## Land Pattern Dimensions

### 1. Standard pattern dimensions

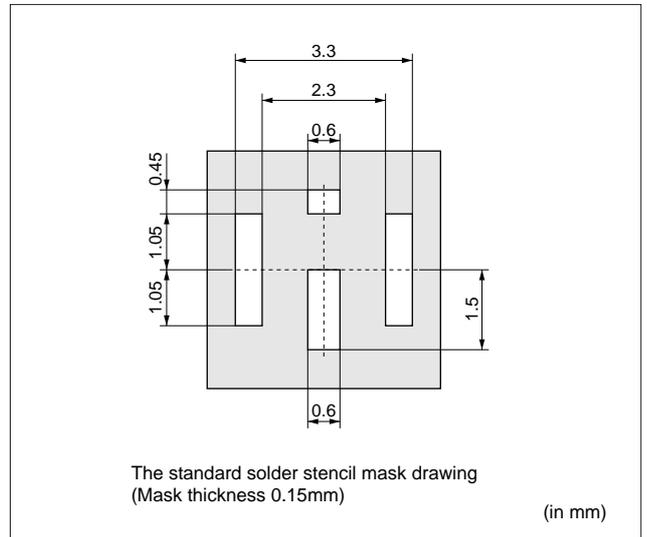
- I/O pattern should be designed to match 50 ohm impedance circuit.
- Typical PCB material is glass epoxy ( $\epsilon_r=4.8$ ). Thickness is 1.0mm
- The solder resist should be printed except for the land pattern on the PCB.



3

### 2. Standard solder stencil mask pattern

Follow Standard solder stencil mask pattern to avoid the possibility of solder being trapped under connector.



## Notice

### ■ Notice (Storage and Operation 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 (Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, 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

### ■ 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 recommended solder stencil mask pattern to avoid the possibility of solder being trapped under connector.

#### 2. Soldering by soldering iron

Soldering by soldering iron should be carried out in accordance to the following conditions.

Pre-heating	Temperature	150°C
	Time	60 to 120 s.
Soldering	Temperature (at the tip of the soldering iron) less than	350°C
	Time	less than 3 s.

#### 3. We cannot warrant against mishaps caused by any use of this product that deviates from allowable temperature and time of reflow soldering.

#### 4. In soldering, do not apply excessive mechanical force to terminals or leads greater than specified in the drawing.

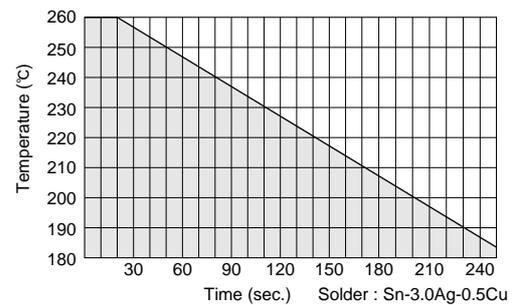
#### 5. Please note the following in case of soldering terminals or leads of the product.

- (1) Use Rosin based flux, but not with strong acid flux (Chlorine content should be less than 0.20wt%).
- (2) Flux should be thoroughly cleaned from connector to prevent possible deterioration of electrical characteristics.

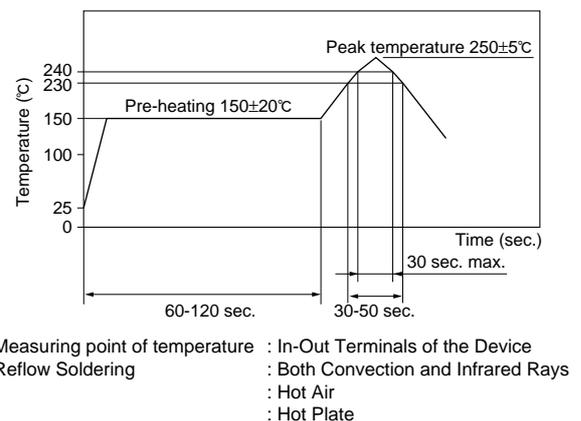
#### 6. Please mount this product at the position so that stress by wrap and/or bend of the PCB may not apply to it.

#### 7. Please dry out this product immediately after soldering and cleaning.

Allowable Temperature and Time of Reflow Soldering



Reflow Soldering Standard Conditions



Continued on the following page. ↗

## Notice

☐ Continued from the preceding page.

### ■ Notice (Handling)

#### 1. Usage Condition

- (1) Do not apply electrical voltage greater than specified in the drawing. It might cause degradation or destruction of the product. Even if it endures during a short time, long time qualification is not guaranteed.
- (2) Confirm product's performance is not influenced by contact of other components.
- (3) Please contact the manufacturer beforehand, if the product is to be used in frequently bent position.

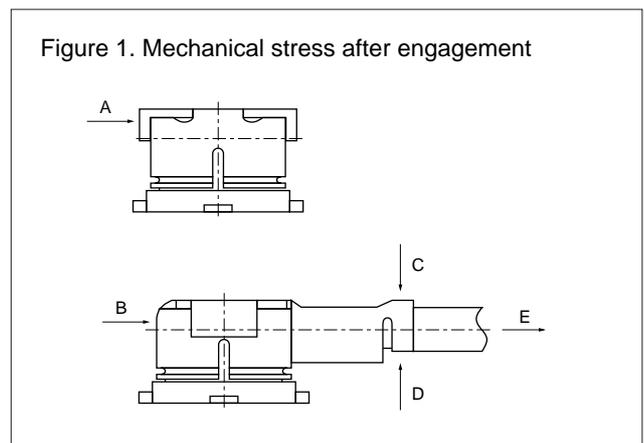
#### 2. Handling

- (1) Avoid excessive stress when handling and transporting printed circuit board after connector and/or assembly has been secured to PCB.
- (2) Do not try to pull the cable, when a connector with a coaxial cable is handled.
- (3) Disregarding the following notes could cause mechanical damage and/or poor electrical performance.

#### 3. Handling Instructions

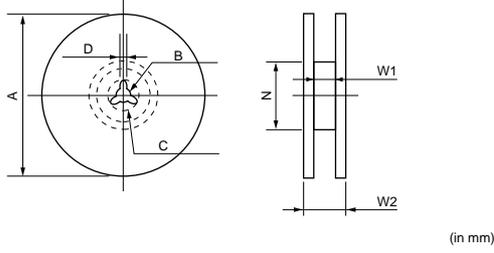
- (1) Cable is designed to fit only with MM9329-2700B receptacle. Any other receptacle cannot be used with this cable.
- (2) Disengagement:  
Use tool P/N M22001 to insert or remove cable in a vertical direction from receptacle. Avoid pulling only the cable to prevent cable damage.
- (3) Avoid twisting probe or cable when engaging or disengaging from connector.
- (4) Mechanical stress:  
The stress to the connector should be limited as shown in Figure 1.

- (a) Stress to the housing.  
Stress A and B: 4.9N max.
- (b) Stress to the outer sleeve.  
Stress C: 2.94N max.  
Stress D: 1.96N max.
- (c) Cable pull strength.  
Stress E: 4.9N max.



## Package

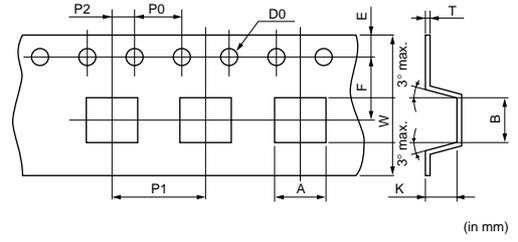
### ■ Dimensions of Reel



(in mm)

Murata Part Number	A	B	C	D	N (min.)	W1	W2 (max.)
MM9329-2700RA1	178	13	21	2	Dia. 50	13.5	18.5
MM9329-2700RB5	330	13	21	2	Dia. 50	13.5	18.5
TOLERANCE	±2.0	±0.5	±0.8	±0.5	-	±1.5	-

### ■ Dimensions of Taping



(in mm)

A	B	W	D0	E	F	K
3.4±0.1	3.4±0.1	12±0.2	Dia.1.5 <sup>+0.1</sup> <sub>-0</sub>	1.75±0.1	5.5±0.1	1.25±0.15

P0	P1	P2	T
4±0.1	8±0.1	2±0.1	0.3±0.05

### ■ Minimum Quantity

MM9329-2700RA1: 180mm dia. reel/1000 pcs.

MM9329-2700RB5: 330mm dia. reel/5000 pcs.

MM9329-2700B: Bulk/free

# Microwave Coaxial Connectors



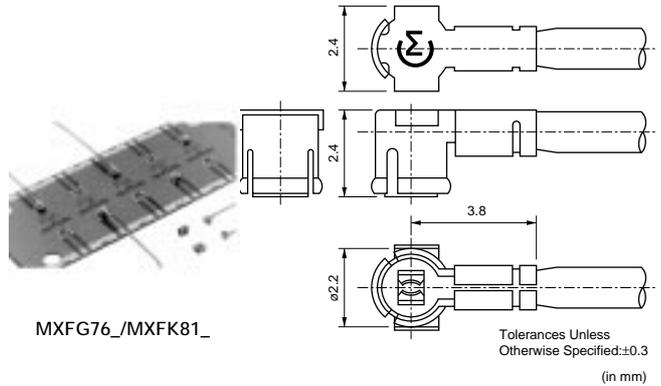
## SMT FSC Type

### ■ Features

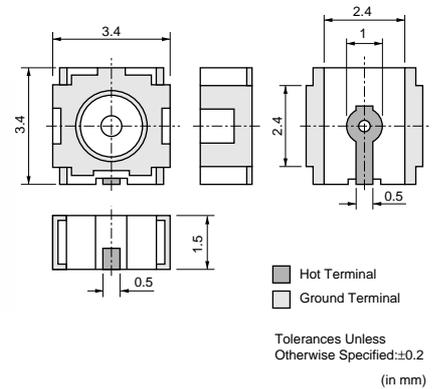
1. High engagement
2. Miniature (LxWxH: 3.4x3.4x1.5mm) for High density mounting
3. Low profile (3.0mm max.)
4. SMD and reflow soldering applicable
5. Taping package applicable
6. Mountable by automatic placer
7. High performance (V.S.W.R. 1.3 max. at 3GHz)
8. Matched with ultra-thin FEP coaxial cables (0.8mm dia)

### ■ Applications

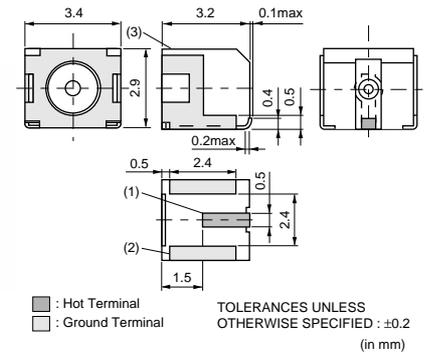
Portable telephone, mobile telephone, cordless telephone, GPS, and other microwave radio and measurement equipment.



MM7329-2700B



MM7329-2702B



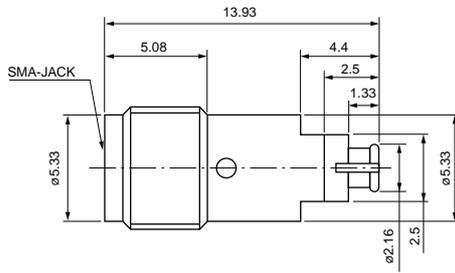
Part Number	Rated Voltage (V)	Contact Resistance (max.) (ohm)	Withstanding Voltage (rms)	Insulation Resistance (min.) (M ohm)	Durability (cycles)	Frequency Rating (GHz)	Temperature Range (degree C)	VSWR	Center Contact	Outer Contact	Insulator
<b>MM7329-2700</b>	250	0.015	300 (AC)	500	50	to 3.0	-40 to +90	1.3 max.	Copper Alloy Gold plated	Copper Alloy Gold plated	Engineering plastic
<b>MM7329-2702</b>	250	0.015	300 (AC)	500	50	to 3.0	-40 to +90	1.3 max.	Copper Alloy Gold plated	Copper Alloy Gold plated	Engineering plastic

Impedance: 50ohm

## Measurement Probe Dimensions

### for Receptacle

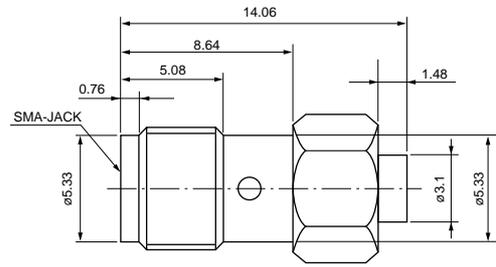
MM121454 (For FSC type receptacle)



(in mm)

### for Cable Assembly

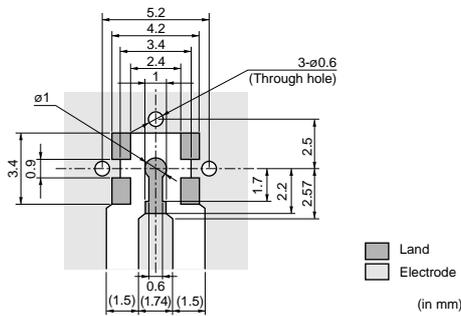
MM121460 (For FSC type cable assembly)



(in mm)

## Land Pattern Dimensions

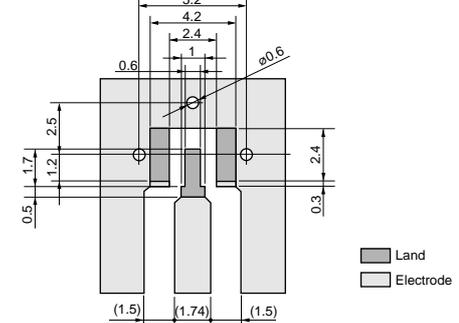
MM7329-2700B



(in mm)

(Note) • Pattern should be designed to match 50 ohm impedance circuit.  
 • Typical PCB material is glass epoxy ( $\epsilon_r=4.8$ ). Thickness is 1.0mm.  
 • The solder resist should be printed except for the land pattern on the PCB.

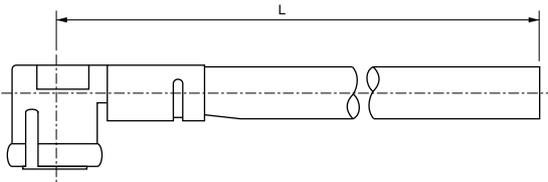
MM7329-2702B



(in mm)

(Note) • Pattern should be designed to match 50 ohm impedance circuit.  
 • Typical PCB material is glass epoxy ( $\epsilon_r=4.8$ ). Thickness is 1.0mm.  
 • The solder resist should be printed except for the land pattern on the PCB.

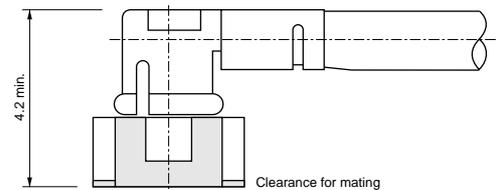
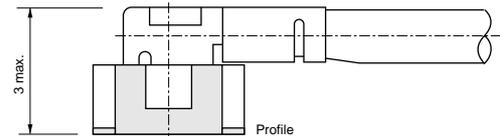
## Cable Length Tolerance



Cable Length L(mm)(*)		Dimensional tolerance(mm)
Over	Till	
40	100	$\pm 3$
100	500	$\pm 4$
500	1000	$\pm 10$
1000	-	+2% of L -0% of L

\*L must be 40mm Min.

## Profile Dimensions



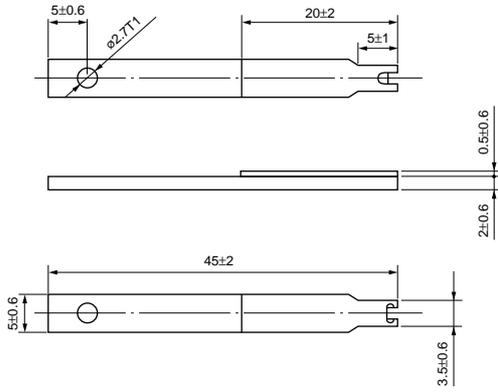
(in mm)

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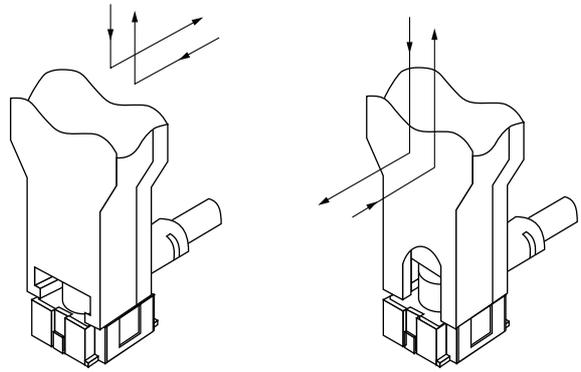
## ■ Disengagement Tool

M19000 (for MM7329-2700B)

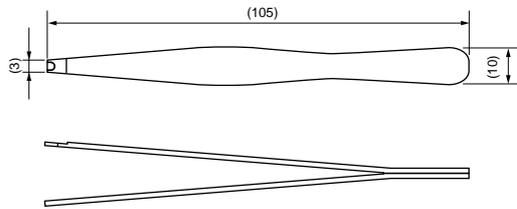


(in mm)

How to use tool (for MM7329-2700B)

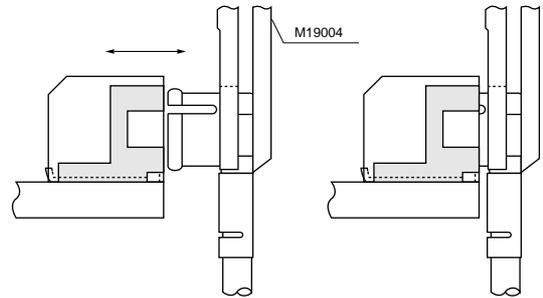


M19004 (for MM7329-2702B)



(in mm)

How to use tool (for MM7329-2702B)



4

## 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 (Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, 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

### ■ 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. Soldering by soldering iron

Soldering by soldering iron should be carried out in accordance to the following conditions.

Pre-heating	Temperature	150°C
	Time	60 to 120 s.
Soldering	Temperature (at the tip of the soldering iron)	less than 350°C
	Time	less than 3 s.

3. We cannot warrant against mishaps caused by any use of this product that deviates from allowable temperature and time of reflow soldering.

4. In soldering, do not apply excessive mechanical force to terminals or leads greater than specified in the drawing.

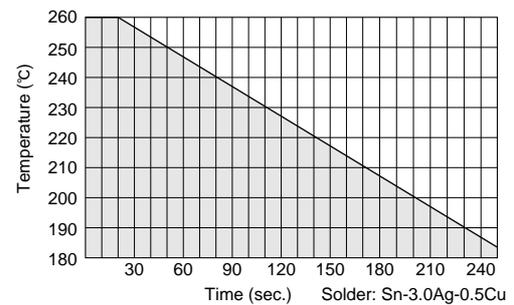
5. Please note the following in case of soldering terminals or leads of the product.

- (1) Use Rosin based flux, but not with strong acid flux (Chlorine content should be less than 0.20wt%).
- (2) Flux should be thoroughly cleaned from connector to prevent possible deterioration of electrical characteristics.

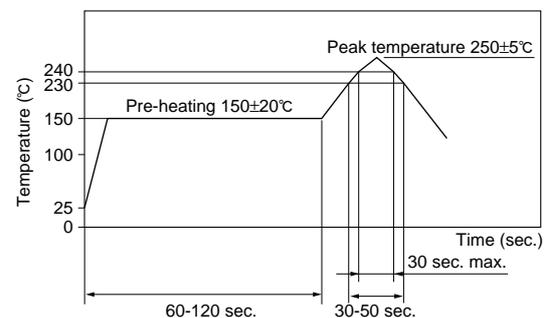
6. Please mount this product at the position so that stress by wrap and/or bend of the PCB may not apply to it.

7. Please dry out this product immediately after soldering and cleaning.

Allowable Temperature and Time of Reflow Soldering



Reflow Soldering Standard Conditions



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

Continued on the following page.

## Notice

Continued from the preceding page.

### ■ Notice (Handling)

#### 1. Usage Condition

- (1) Do not apply electrical voltage greater than specified in the drawing. It might cause degradation or destruction of the product. Even if it endures during a short time, long time qualification is not guaranteed.
- (2) Confirm product's performance is not influenced by contact of other components.
- (3) Please contact the manufacturer beforehand, if the product is to be used in frequently bent position.

#### 2. Handling

- (1) Avoid excessive stress when handling and transporting printed circuit board after connector and/or assembly has been secured to PCB.
- (2) Do not try to pull the cable, when a connector with a coaxial cable is handled.
- (3) Disregarding the following notes could cause mechanical damage and/or poor electrical performance.

#### 3. Handling Instructions

- (1) Cable is designed to fit only with MM7329-2700B and MM7329-2702B receptacles. Any other receptacle can not be used with this cable.
- (2) Disengagement:  
Use tool P/N M19000 (for MM7329-2700B) or M19004 (for MM7329-2702B) to insert or remove cable in a vertical direction from receptacle. Avoid pulling only the cable to prevent cable damage.
- (3) Avoid twisting probe or cable when inserting or removing from receptacle.
- (4) Mechanical stress:

The stress to the connector should be limited as shown in Figure 1.

##### (a) Stress to the housing.

Stress A and B: 4.9N max.

##### (b) Stress to the outer sleeve.

Stress C: 2.94N max.

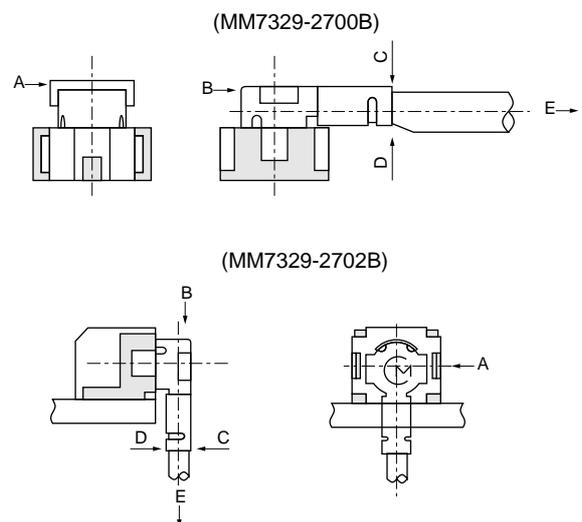
Stress D: 1.96N max.

##### (c) Cable pull strength.

Stress E: 7.84N max. (for MM7329-2700B)

4.9N max. (for MM7329-2702B)

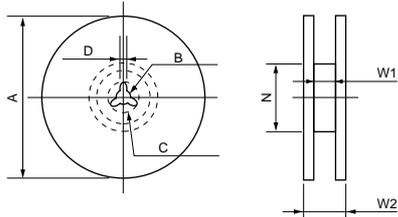
Figure 1. Mechanical stress after engagement



# Package

## ■ Dimensions of Reel

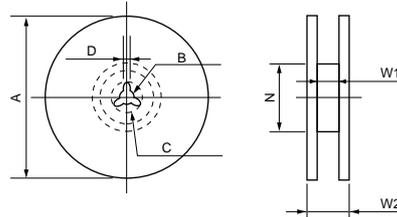
MM7329-2700RA1/RB4



(in mm)

Murata Part Number	A	B	C	D	N (min.)	W1	W2 (max.)
MM7329-2700RA1	178	13	21	2	Dia. 50	13.5	18.5
MM7329-2700RB4	330	13	21	2	Dia. 50	13.5	18.5
TOLERANCE	±2.0	±0.5	±0.8	±0.5	-	±1.5	-

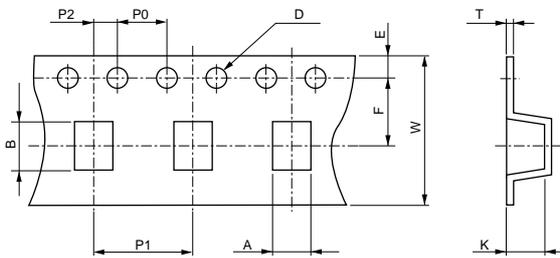
MM7329-2702RAB/RB2



(in mm)

Murata Part Number	A	B	C	D	N (min.)	W1	W2 (max.)
MM7329-2702RAB	178	13	21	2	Dia. 50	13.5	18.5
MM7329-2702RB2	330	13	21	2	Dia. 50	13.5	18.5
TOLERANCE	±2.0	±0.5	±0.8	±0.5	-	±1.5	-

## ■ Dimensions of Taping



(in mm)

A	B	W	D	E	F	K	P0
3.9±0.1	3.7±0.1	12±0.2	∅1.5 <sup>+0.1</sup>	1.75±0.1	5.5±0.1	3±0.15	4±0.1

P1	P2	T
8±0.1	2±0.1	0.3±0.05

## ■ Minimum Quantity

MM7329-2700RA1: 180mm dia. reel/1000 pcs.

MM7329-2700RB4: 330mm dia. reel/4000 pcs.

MM7329-2700B: Bulk/free

MM7329-2702RAB: 180mm dia. reel/500 pcs.

MM7329-2702RB2: 330mm dia. reel/2000 pcs.

MM7329-2702B: Bulk/free

# Microwave Coaxial Connectors



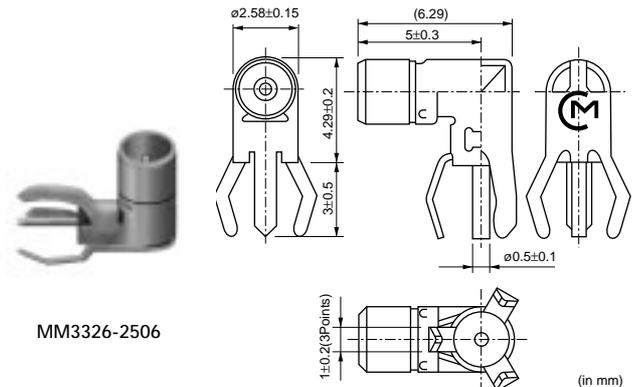
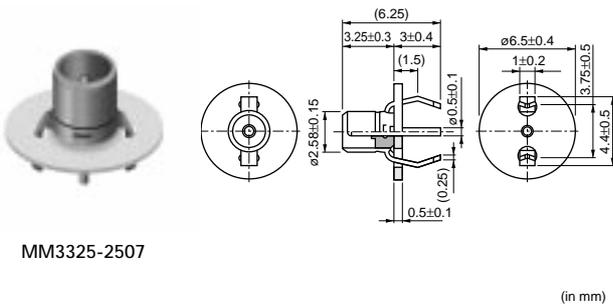
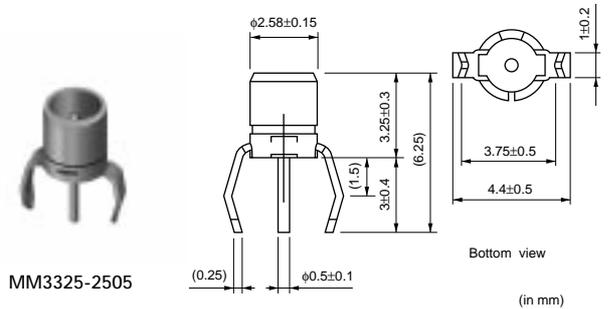
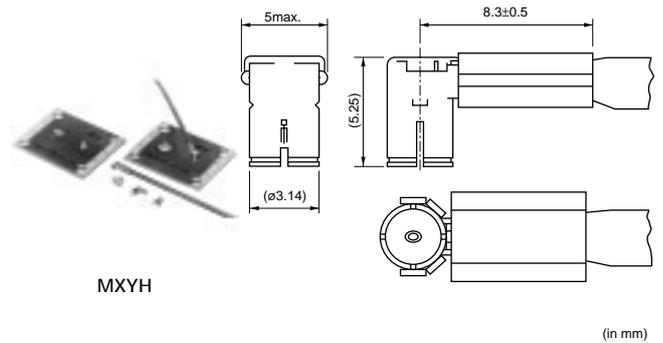
## Low Profile BFA Type

### ■ Features

1. Miniature and low profile (6.3mm max.)
2. High performance (V.S.W.R. 1.2 max. at 4GHz)
3. Low RF leakage

### ■ Applications

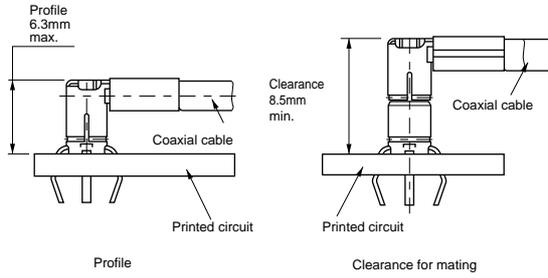
Portable telephones, mobile telephones, cordless telephones, oscilloscope, GPS, and any other R.F. circuits for microwave equipment.



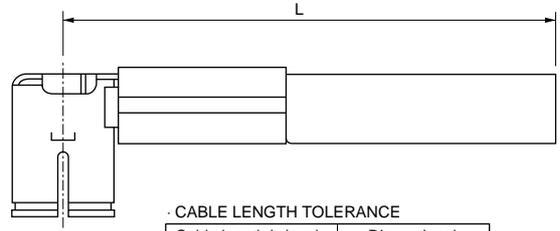
Part Number	Rated Voltage (V)	Contact Resistance (max.) (ohm)	Withstanding Voltage (rms)	Insulation Resistance (min.) (M ohm)	Durability (cycles)	Frequency Rating (GHz)	Temperature Range (degree C)	VSWR	Center Contact	Outer Contact	Insulator
<b>MM3325-2505</b>	250	0.01	300 (AC)	1000	50	to 4.0	-40 to +90	1.2 max.	Copper Alloy Gold plated	Copper Alloy Silver plated	Engineering plastic
<b>MM3325-2507</b>	250	0.01	300 (AC)	1000	50	to 4.0	-40 to +90	1.2 max.	Copper Alloy Gold plated	Copper Alloy Silver plated	Engineering plastic
<b>MM3326-2506</b>	250	0.01	300 (AC)	1000	50	to 2.0	-40 to +90	1.2 max.	Copper Alloy Gold plated	Copper Alloy Silver plated	Engineering plastic

Impedance: 50ohm

## Profile Dimensions



## Cable Length Tolerance



CABLE LENGTH TOLERANCE

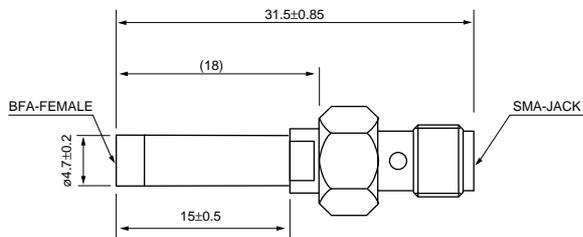
Cable length L (mm)*		Dimensional tolerance (mm)
Over	Till	
50	100	±3
100	500	±4
500	1000	±10
1000	—	+2 -0 % of L

\*L must be 50mm min.

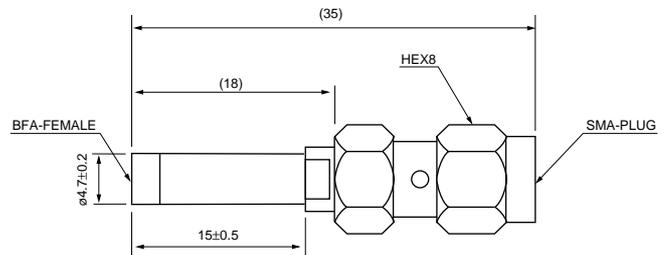
## Measurement Probe Dimensions

for Receptacle

MM121352 (For BFA type receptacle)



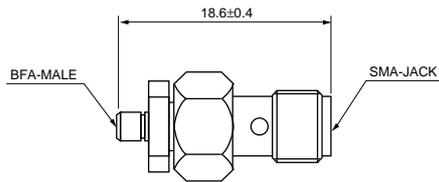
MM121372 (For BFA type receptacle)



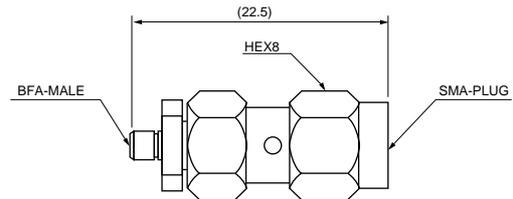
(in mm)

for Cable Assembly

MM121360 (For BFA type cable assembly)



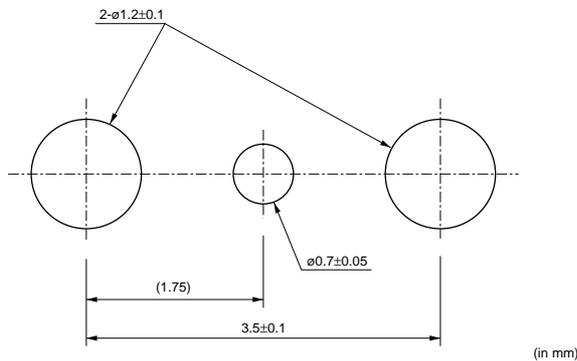
MM121380 (For BFA type cable assembly)



(in mm)

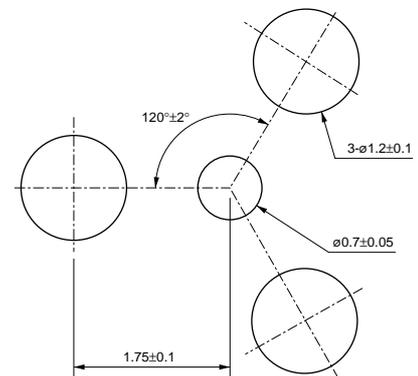
## Mounting Dimensions

MM3325-2505/2507



(in mm)

MM3326-2506



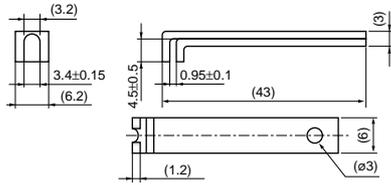
(in mm)

Continued on the following page.

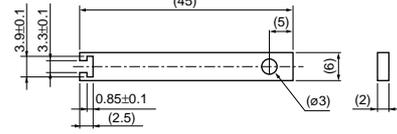
Continued from the preceding page.

## ■ Disengagement Tool

P/N : M16000



P/N : M16001



(in mm)

## 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 (Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, 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. Soldering by soldering iron

Soldering by soldering iron should be carried out in accordance to the following conditions.

Pre-heating Temperature 150 degree C  
Time 60 to 120 s.

Soldering Temperature (at the tip of the soldering iron) less than 350 degree C  
Time less than 3 s.

2. We cannot warrant against mishaps caused by any use of this product that deviates from allowable temperature and time of reflow soldering.
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) Flux should be thoroughly cleaned from connector to prevent possible deterioration of electrical characteristics.
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.

## Notice

### ■ Notice (Handling)

#### 1. Usage Condition

- (1) Do not apply electrical voltage greater than specified in the drawing. It might cause degradation or destruction of the product. Even if it endures during a short time, long time qualification is not guaranteed.
- (2) Confirm product's performance is not influenced by contact of other components.

#### 2. Handling

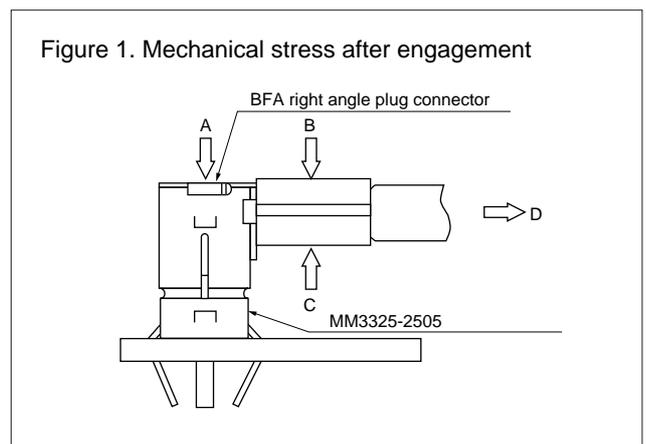
- (1) Avoid excessive stress when handling and transporting printed circuit board after connector and/or assembly has been secured to PCB.
- (2) Disregarding the following notes could cause damage and/or poor electrical performance.

#### 3. Handling Instructions

- (1) This cable is only fit with MM3325-2505, MM3325-2507 and MM3326-2506 receptacle. Any other receptacle cannot be used with this cable.
- (2) Disengagement:  
Use tool P/N M16000 or M16001 and pull off vertically in the direction of connector coupling axis. Do not try to pull out by the cable, because there is the possibility of wire breaks.
- (3) Avoid twisting probe or cable when engaging or disengaging from connector.
- (4) Mechanical stress:

The stress to the connector should be limited as shown in Figure 1.

- (a) Stress to the housing.  
Stress A: 9.8N max.
- (b) Stress to the outer sleeve.  
Stress B: 4.9N max.  
Stress C: 2.94N max.
- (c) Cable pull strength.  
Stress D: 9.8N max.



## Miniaturized Microwave Coaxial Connector Cable List

			0.8D double shield Cross linked polyethylene cable	0.8D single shield Cross linked polyethylene cable	0.8D double shield FEP cable	0.8D single shield FEP cable
Murata cable code			62	63	75	76
Inner conductor	Material	-	copper covered steel wire	copper covered steel wire	Silver coated copper covered steel wire	Silver coated copper covered steel wire
	No. and Dia.	(No./mm)	1/0.26	1/0.26	1/0.26	1/0.26
	Total Dia.	(mm)	0.26	0.26	0.26	0.26
Insulator	Material	-	Cross linked polyethylene compound	Cross linked polyethylene compound	FEP	FEP
	Melting point (Reference only)	Degree C	230	230	285	285
	Total Dia.	(mm)	0.8	0.8	0.8	0.8
Outer conductor	Material	-	Bare copper wire	Bare copper wire	Tin plated copper wire	Tin plated copper wire
	Dia. of wire	(mm)	0.1	0.1	0.05	0.05
	Total Dia.	(mm)	Inner 1.3 Outer 1.8	1.3	Inner 1.05 Outer 1.3	1.05
Sheath	Material	-	Polyvinyl chloride compound	Polyvinyl chloride compound	FEP	FEP
	Nominal thickness	(mm)	0.35	0.35	0.1	0.1
	Color	-	Gray	Gray	Gray	Gray
Overall Dia.		(mm)	2.5	2.0	1.5	1.24
Minimum bending radius		(mm)	10	8	8	6
Nominal impedance		(Ohm)	50	50	50	50
Continuous operating voltage			300 Vrms max.	300 Vrms max.	300 Vrms max.	300 Vrms max.
Nominal static capacitance		(pF/m)	100	100	100	100
Nominal Insertion loss	dB/m at 1GHz		1.6	1.6	1.56	1.56
	dB/m at 2GHz		2.3	2.3	2.3	2.3
	dB/m at 3GHz		2.8	2.8	2.9	2.9
	dB/m at 4GHz		3.2	3.2	3.5	3.5
	dB/m at 6GHz					
Assembly to BFA			Suitable	Suitable	Suitable	Not Suitable
Assembly to FSC			Not Suitable	Not Suitable	Not Suitable	Suitable
Assembly to GSC			Not Suitable	Not Suitable	Not Suitable	Not Suitable
Assembly to HSC			Not Suitable	Not Suitable	Not Suitable	Not Suitable

## Miniaturized Microwave Coaxial Connector Cable List

			0.4D single shield FEP cable	0.4D single shield PFA cable	0.4D single shield PFA cable	0.4D single shield PFA cable
Murata cable code			81	88	92	98
Inner conductor	Material	-	Silver coated copper wire	Silver coated copper covered steel wire	Silver coated copper wire	Silver coated copper wire
	No. and Dia.	(No./mm)	7/0.05	1/0.15	7/0.05	7/0.05
	Total Dia.	(mm)	0.15	0.15	0.15	0.15
Insulator	Material	-	FEP	PFA	PFA	PFA
	Melting point (Reference only)	Degree C	250	302-310	302-310	302-310
	Total Dia.	(mm)	0.4	0.43	0.4	0.4
Outer conductor	Material	-	Tin plated copper wire	Tin plated copper wire	Tin plated copper wire	Silver plated copper wire
	Dia. of wire	(mm)	0.05	0.05	0.05	0.05
	Total Dia.	(mm)	0.65	0.68	0.65	0.65
Sheath	Material	-	FEP	PFA	PFA	PFA
	Nominal thickness	(mm)	0.05	0.075	0.075	0.075
	Color	-	White	White	White	White
Overall Dia.		(mm)	0.8	0.83	0.8	0.8
Minimum bending radius		(mm)	4.8	3.3	3.3	3.3
Nominal impedance		(Ohm)	50	50	50	50
Continuous operating voltage			300 Vrms max.	300 Vrms max.	300 Vrms max.	300 Vrms max.
Nominal static capacitance		(pF/m)	100	100	100	100
Nominal Insertion loss	dB/m at 1GHz		3.0	2.89	3.0	3.0
	dB/m at 2GHz		4.26	4.28	4.26	4.26
	dB/m at 3GHz		5.24	5.39	5.24	5.24
	dB/m at 4GHz		6.18	6.44	6.18	6.18
	dB/m at 6GHz			8.4	9.17	9.17
Assembly to BFA			Not Suitable	Not Suitable	Not Suitable	Not Suitable
Assembly to FSC			Suitable	Not Suitable	Not Suitable	Not Suitable
Assembly to GSC			Not Suitable	Suitable	Suitable	Not Suitable
Assembly to HSC			Not Suitable	Not Suitable	Not Suitable	Suitable

**△ Note:**

1. Export Control

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Murata products should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.

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For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.

2. Please contact our sales representatives or product engineers before using the products in this catalog for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage to a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this catalog.

- |                             |   |
|-----------------------------|---|
| ① Aircraft equipment        | ② Aerospace equipment   |
| ③ Undersea equipment        | ④ Power plant equipment   |
| ⑤ Medical equipment         | ⑥ Transportation equipment (vehicles, trains, ships, etc.)  |
| ⑦ Traffic signal equipment  | ⑧ Disaster prevention / crime prevention equipment  |
| ⑨ Data-processing equipment | ⑩ Application of similar complexity and/or reliability requirements to the applications listed in the above |

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4. Please read rating and △CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.

5. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

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**Murata Manufacturing Co., Ltd.**

<http://www.murata.com/>

**Head Office**  
1-10-1, Higashi Kotari, Nagaokakyo-shi, Kyoto 617-8555, Japan  
Phone: 81-75-951-9111

**International Division**  
3-29-12, Shibuya, Shibuya-ku, Tokyo 150-0002, Japan  
Phone: 81-3-5469-6123 Fax: 81-3-5469-6155 E-mail: intl@murata.co.jp