

DRAWING

TITLE	DRAWING NO.	ISSUE	ISSUE DATE	SHEET
CONNECTOR	NMM23-5010	D	13/Mar./2002	1 of 6

1. SCOPE

This product specification is for automatic measurements probe, which is used with microwave SMD coaxial switch connector (SWD type: MM8430-2600B). Please contact us before using any of the production in the applications not described above.

2. PART NUMBER

Part Number	Packaging	Quantity
MM126036	-----	-----

3. RATING:

Item	Specification
3.1 Voltage Rating	250V r.m.s. maximum
3.2 Nominal Frequency Range	DC to 6GHz
3.3 Nominal Impedance	50Ω
3.4 Temperature Rating	-40°C to +90°C

4. DESIGN AND CONSTRUCTION

See Figure.1

5. ELECTRICAL PERFORMANCE:

Item	Specification	Test									
5.1 Insulation Resistance	500 MΩ minimum	MIL-STD-202, Method 302 Testing by applying the specified voltage between inner and outer conductor. Voltage: DC 250V±25V Time: 1min									
5.2 Withstanding Voltage	No evidence of breakdown	MIL-STD-202, Method 301 Testing by applying the specified voltage between inner and outer conductor. Voltage: AC 300V±20V r.m.s. Time: 1min									
5.3 Contact Resistance	<table> <tr> <td></td><td>Initial</td><td>After test.</td></tr> <tr> <td>Center contact</td><td>25.0mΩ max.</td><td>30.0mΩ max.</td></tr> <tr> <td>Outer contact</td><td>20.0mΩ max.</td><td>25.0mΩ max.</td></tr> </table>		Initial	After test.	Center contact	25.0mΩ max.	30.0mΩ max.	Outer contact	20.0mΩ max.	25.0mΩ max.	MIL-STD-1344 Method 3002.1 Testing by the voltage dropping method with the specified current. 1. Frequency : 1,000Hz. 2. Current : 150mA max. 3. Voltage drop : 200μV max. 4. Measurement point : a. Center contact b. Outer contact The conductor resistance is eliminated from data.
	Initial	After test.									
Center contact	25.0mΩ max.	30.0mΩ max.									
Outer contact	20.0mΩ max.	25.0mΩ max.									

D	13/Mar./2002	Revised Figure 8.1.1.
C	6/Mar./2002	Revised Figure 1, 3.
B	16/Jul./2001	Revised paragraph 11.
A	19/Jun./2001	Revised paragraph 5.5, 10, 12.
	15/Mar./2001	First release.
ISSUE	ISSUE DATE	RELEASES AND REVISIONS

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Item	Specification	Test
5.4	Voltage Standing Wave Ratio (V.S.W.R.) Meet the requirements of following spec. 1.6 max. (DC to 3GHz) 2.0 max. (3GHz to 6GHz)	Measurement system is as following figure. The judgment is done by the data only from work by using gating function. Frequency : 0.1GHz to 6GHz (unit: mm) ①:Port 1 ④:MM8430-2600B ②:SMA Jack ⑤:Termination ③:Microstrip line ⑥:MM126036
5.5	Insertion loss 0.6dBmax. (DC~3GHz) 1.5dBmax.(3GHz ~6GHz)	Measurement system is as following figure. Frequency : 0.1 to 6.0GHz The loss of the other conductive part than the probe is not included. ①:Port 1 ⑤:Termination ②:SMA Jack ⑥:MM126036 ③:Microstrip line ⑦:Port 2 ④:MM8430-2600B

6. MECHANICAL PERFORMANCE:

Item	Specification	Test
6.1	Connector Durability (PROBE side) No evidence of visual mechanical damage and meet the contact resistance specification.	(PROBE side) 1M cycles of mating and withdrawal under the following conditions. Mating time: 2s Max. Unmating time: 1s Max. Mating speed: 40mm/s Max.
	(SMA side) No evidence of visual mechanical damages and meet the contact resistance specification.	(SMA side) 500 cycles of mating and withdrawal under the following conditions. Cycle speed: 12cycle/min Max.

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7. CAUTION

7.1 Limitation of Applications

Please contact us before using our products for the applications listed below which require especially high reliability for the prevention of defects which might directly cause damage to the third party's life, body or property.

- (1) Aircraft equipment
- (2) Aerospace equipment
- (3) Undersea equipment
- (4) Power plant control 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.

7.2 Fail-safe

Be sure to provide an appropriate fail-safe function on your product to prevent a second damage that may be caused by the abnormal function or the failure of our product.

8. NOTICE

8.1 Environment Conditions

8.1.1 This product is designed for use of 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 :

- (1) Ambient air containing corrosive gas (Cl₂, H₂S, NH₃, SO_x, NO_x etc.).
- (2) Ambient air containing volatile or combustible gas.
- (3) In liquid (water, oil, chemical solution, organic solvents, etc.).
- (4) In environments with a high concentration of airborne particles.
- (5) In direct sunlight.
- (6) Dusty conditions.
- (7) In freezing.
- (8) Other environments similar to the above conditions.

8.1.2 Contact the manufacturer before using the product in any of the above environments or under any of the above conditions.

8.2 Usage conditions

8.2.1 Do not apply electrical voltage greater than specified in the drawing. It might because of degradation or destruction of the product. Even if it endures during a short time, long time qualification is not guaranteed.

8.2.2 Confirm that there are not any influence to the product's performance which might because by the other components which touch with the product.

8.3 Handling, storage and transportation of the product

8.3.1 Use the product of former delivery first.

8.3.2 Store in manufacturer's package or tightly re closed box with the following conditions.

Temperature : -10°C ~ +40 °C

Humidity : 15% ~ 85 % RH

Use this product within 6 month after receipt.

8.4 Safety

8.4.1 This product has two failure modes, - "OPEN" and "SHORT"-.

8.4.2 Please contact the manufacturer before using the product in any other than the previously informed application.

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9. The engagement strokes

To get the 15dB or higher isolation (up to 6GHz), The engagement strokes from the flange to the tip of probe is 18.28mm to 19.78mm. (Figure 3)

10. Directions for use

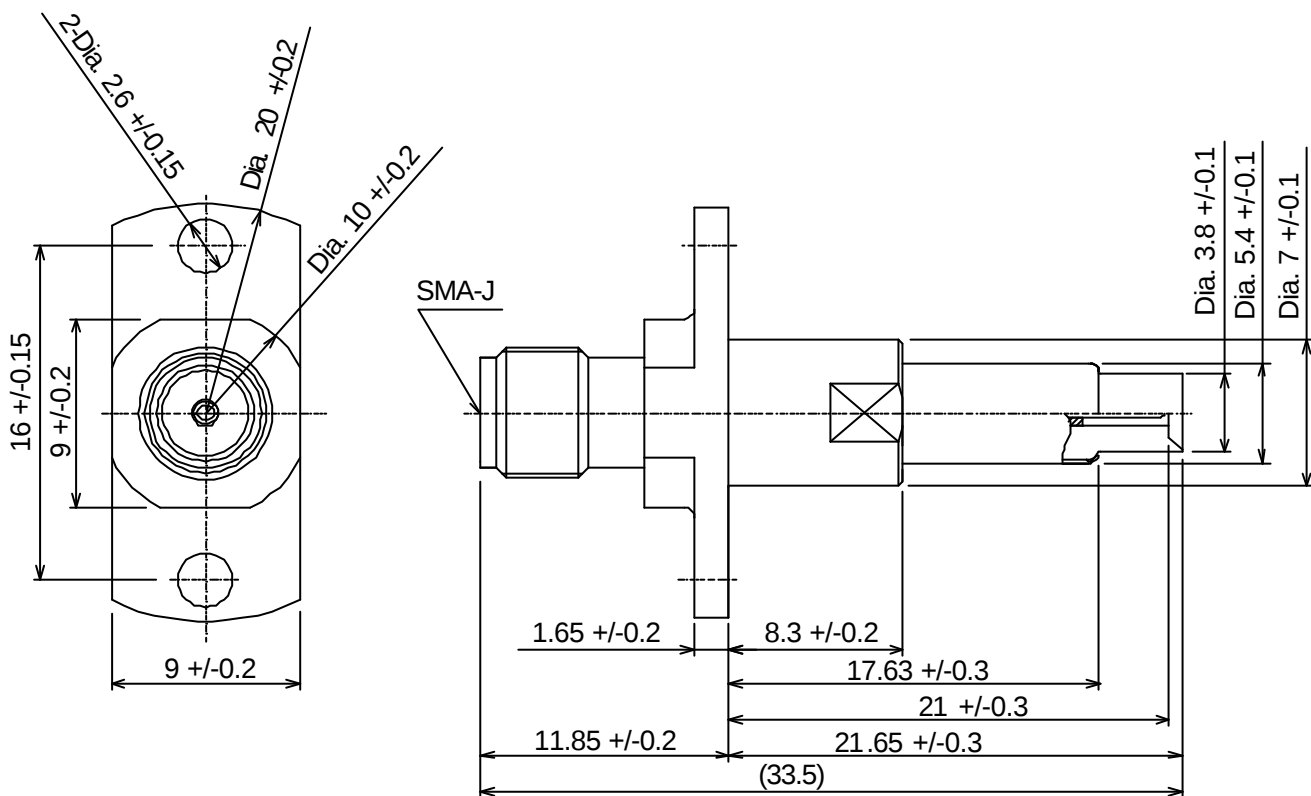
Paragraph 12 shows how to use this products.

11. NOTE

- 11.1 Please make sure that your product has been evaluated in view of your specifications with our product being mounted to your product.
- 11.2 You are requested not to use our product deviating from the agreed specifications.
- 11.3 Please return one duplicate of this product specification to us with your signature to acknowledge your receipt. If the duplicate is not returned within three months, the product specification will be deemed to have been received by you.
- 11.4 We consider it not appropriate to include any terms and conditions with regard to the business transaction in the product specifications, drawings or other technical documents. Therefore, if your technical documents as above include such terms and conditions such as warranty clause, product liability clause, or intellectual property infringement liability clause, they will be deemed to be invalid.

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SCALE:FREE
UNIT: mm

Figure1. Construction

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12. USE THIS PRODUCTS

12.1 The directions for attachment to measurement machine.

The probe must be attached to machine at the two screw holes in probe flange. (Figure 2)

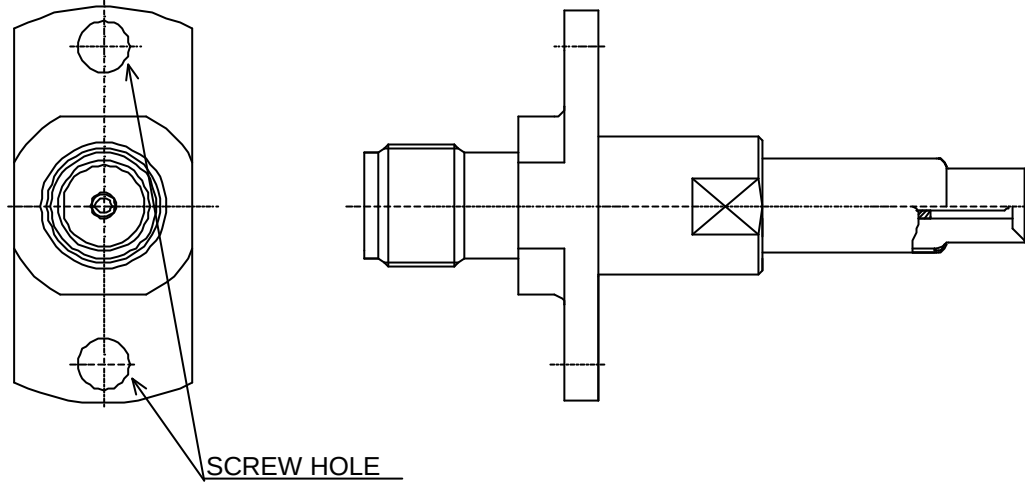


Figure.2 Screw hole position

12.2 The tolerance of position against MM8430-2600B

With the standard attachment method, $\pm 0.05\text{mm}$ is permitted against the hole center of MM8430-2600B.

However, with the machine which has the following function, $\pm 0.7\text{mm}$ is permitted against the hole center of MM8430-2600B.

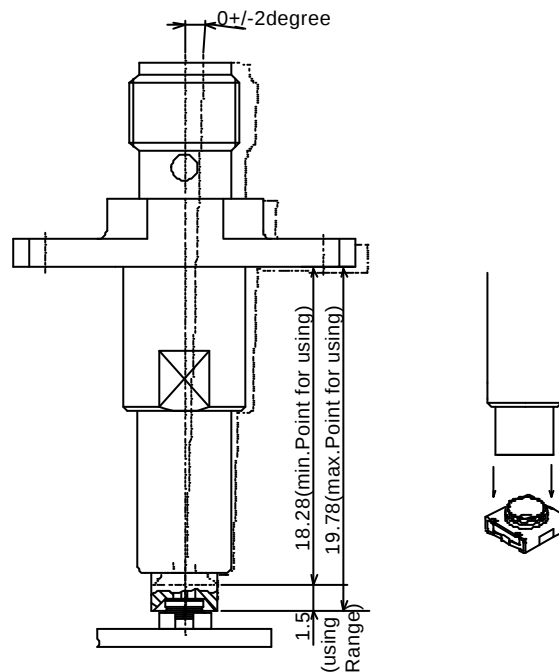
The function is to utilize the taper at tip of probe (See Figure 3). If the taper can be acting as the guide, tolerance can be wider.

12.3 The engagement strokes (Figure 3)

To get the 15dB or higher isolation (up to 6GHz), The engagement strokes from the flange to the tip of probe is 18.28mm to 19.78mm for the outer conductor.

12.4 The slant angle tolerance of probe against MM8430-2600B. (Figure 3)

To have the stable measurement, MM126036 slant angle must be $\pm 2^\circ$ degree.



UNIT: mm

Figure.3 Probe Shape Operation Manual for Auto Measurement probe (MM126036)