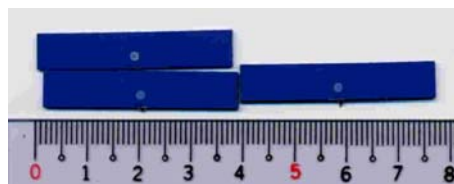

MULTILAYER CERAMIC ANTENNA (LINEAR POLARIZATION MODE) FOR 400MHz~500MHz

Product Specification¹ (Preliminary)

QUICK REFERENCE DATA

Working Frequency*	400~500MHz
Bandwidth	20 MHz (Min)
Gain	0.5 dBi (Max)
VSWR	3.0 max
Polarization	Linear
Azimuth	Omni-directional
Impedance	50Ω
Operating Temperature	-55~125 °C
Termination	Ni/Sn (Environmentally-Friendly Leadless)



Resistance to soldering heat 260°C, 10 sec.

* Three types of ceramic antenna are available: Type 43, Type 46, and Type 49

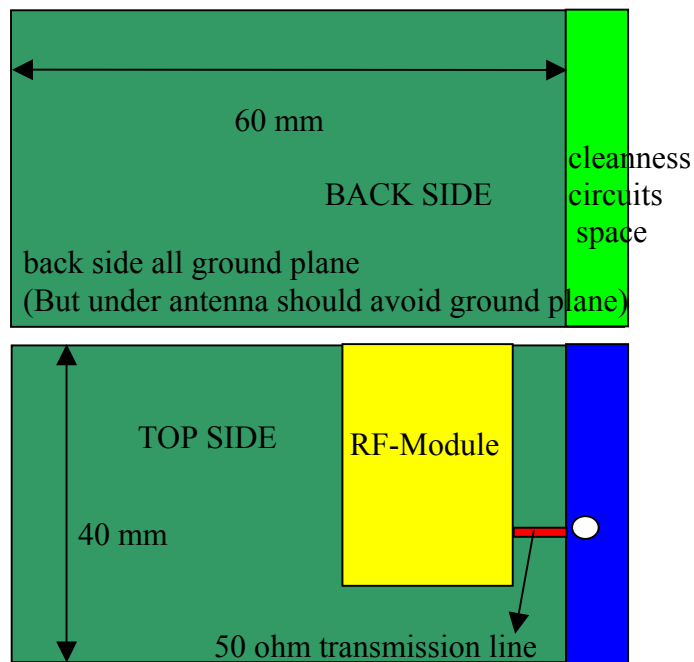


Special Environmental Concerns- Green Products Design: The foil making process is using environmentally friendly aqueous solvent technology. Termination is lead free and packing materials can be re-cycled

1. APPLICATION

¹ All the technical data and information contained herein are subject to change without prior notice

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2. SOLDER LAND PATTERN FOR ANTENNA

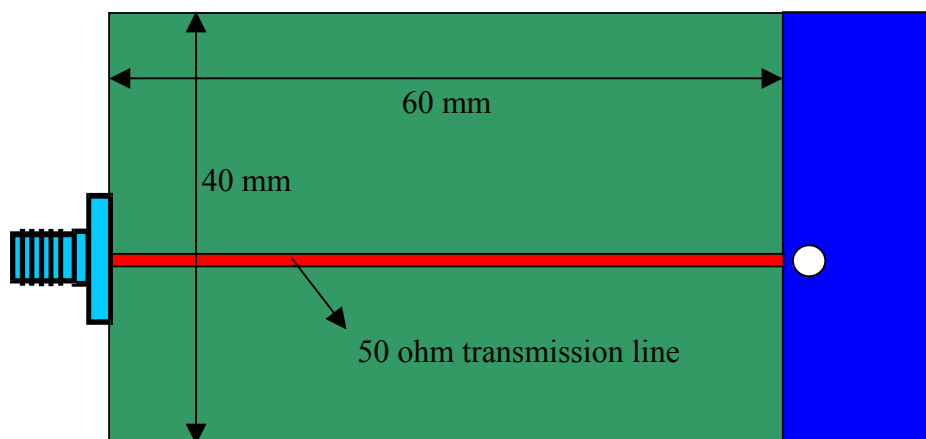
Figure	Dimensions		Remark
	L	7.30 ± 0.50 mm	Feed pad
	F	2.50 ± 0.50 mm	
	C	0.90 ± 0.10 mm	
	S	2.50 ± 0.50 mm	Mount pad

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3. MECHANICAL DATA

Figure	Dimension		Port
Technical drawing of a PCB layout showing dimensions L, W, T, F, C, S1, and S. The drawing includes a top view, a side view, and a cross-section view.	L	6.8±0.5mm	-
	W	37.5±0.5mm	-
	T	0.90±0.2mm	-
	F	2.3±0.3mm	Feed termination
	C	0.5±0.3mm	Solder termination
	S	2.3±0.3mm	Solder termination
	S1	1.4±0.3mm	Solder termination

4. TEST BOARD DIMENSION FOR S11 (RETURN LOSS) AND RADIATION PATTERN MEASUREMENT

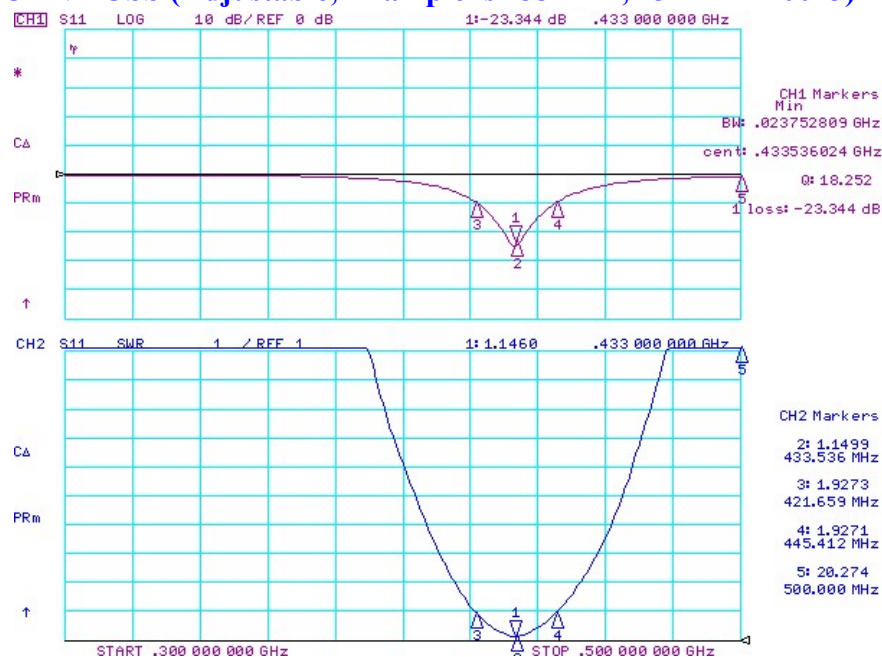


FR-4 PCB thickness = 0.8 mm

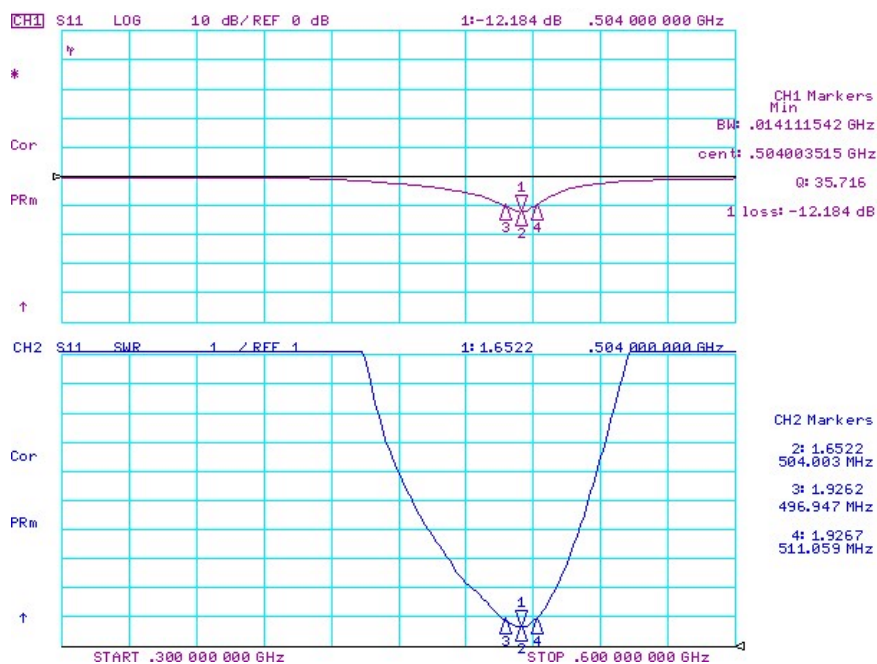
The length of transmission line = 1.35 mm (depends on PCB thickness)

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5. S11 RETURN LOSS (Adjustable, Example is 433MHz, 4311 121 20043)

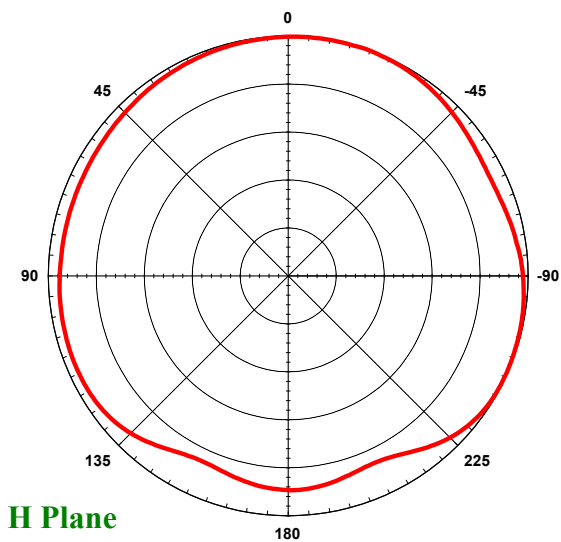
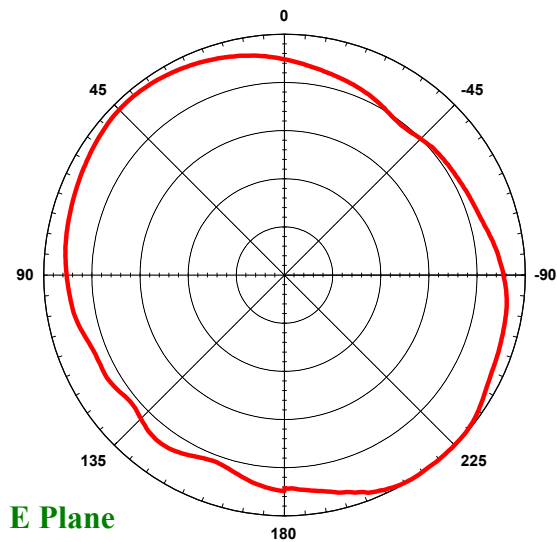


(Adjustable, Example is 490MHz, 4311 121 20049)



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6. TYPICAL RADIATION PATTERN



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RELIABILITY DATA (Reference to IEC Specification)

IEC 384-10/ CECC 32 100 CLAUSE	IEC 6006868-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.4		Mounting	The antenna can be mounted on printed-circuit boards or ceramic substrates by applying wave soldering, reflow soldering (including vapour phase soldering) or conductive adhesive	No visible damage
4.5		Visual inspection and dimension check	Any applicable method using $\times 10$ magnification	In accordance with specification (no chip off 3 mm)
4.6.1		Antenna	Central Frequency at 20 °C	Standard test board in page 3
4.8		Adhesion	A force of 5 N applied for 10 s to the line joining the terminations and in a plane parallel to the substrate	No visible damage
4.9		Bond strength of plating on end face	Mounted in accordance with CECC 32 100, paragraph 4.4	No visible damage
			Conditions: bending 0.25 mm at a rate of 1mm/s, radius jig. 340 mm, 1 mm warp on FR4 board of 90 mm length	No visible damage
4.10	Tb	Resistance to soldering heat	260 $\pm$ 5 °C for 10 $\pm$ 0.5 s in a static solder bath	The terminations shall be well tinned after recovery and Central Freq. Change $\pm$ 6%

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The antennas may be ordered by using the Yageo ordering code. These code numbers can be determined by the following rules:

CAN = Yageo Part No. for Antenna

43 = Antenna

13 = Bulk, 1000 pcs

1 = High Frequency Material

$$\mathbf{21} = 6.5 * 38.0 * 0.9 \text{ mm}$$

20 = 20 MHz Bandwidth, VSWR<3

043 = 433MHz, Type 43 (No Marking)

046 = 460MHz, Type 46 (Marking 6)

049 = 490MHz, Type 49 (Marking 9)

1B = 1000 pcs for tape

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Revision Control:

Revision	Date	Content	Remark
	April 20, 2002	New Issued	
	Aug 9, 2002	Add Type 49 and add 6 terminations' dimension VSWR< 3	
	Oct 14, 2002	Modify dimension and termination width (S1, F, C, T)	

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