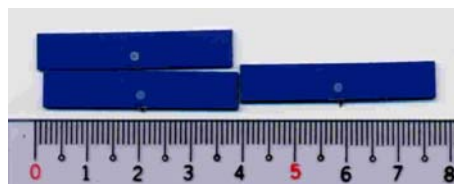


MULTILAYER CERAMIC ANTENNA (LINEAR POLARIZATION MODE) FOR 400MHz~500MHz

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

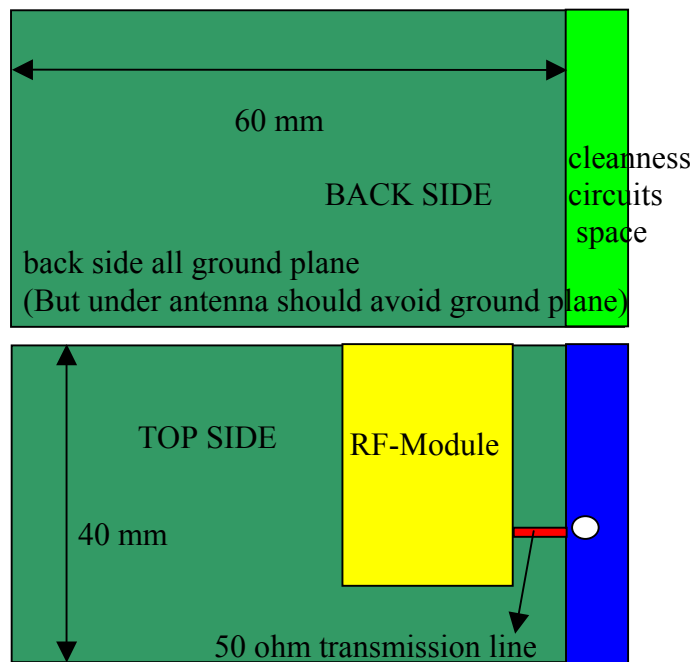


Special Environmental Concerns- Green Products Design: The foil making process is using environmentally friendly aqueous solvent technology. Termination is lead free and packing materials can be re-cycled

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

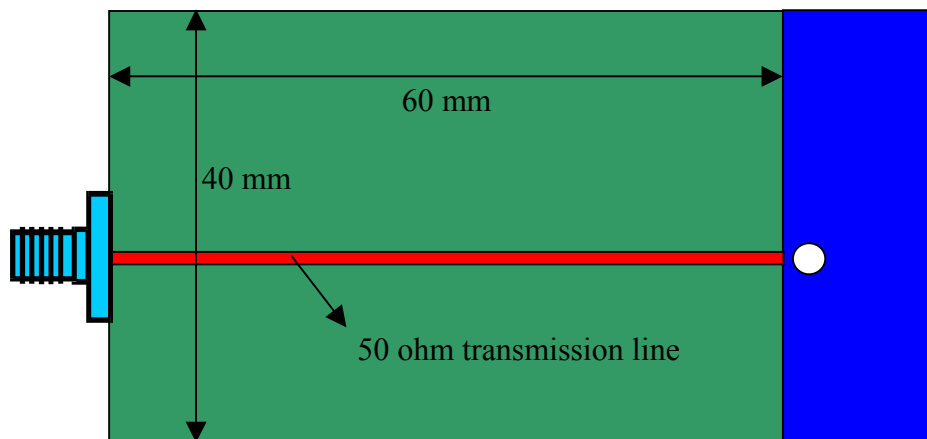
Figure	Dimensions		Remark
	L	7.30 ± 0.50 mm	Feed pad
	F	2.50 ± 0.50 mm	
	C	0.90 ± 0.10 mm	Mount pad
	S	2.50 ± 0.50 mm	

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3. MECHANICAL DATA

Figure	Dimension	Port
The figure consists of three views of a rectangular antenna component. The top view shows a blue rectangle with a width dimension 'W' and a length dimension 'L'. It features four small grey rectangular pads at the corners and a central grey pad. The side view shows the thickness 'T' and a central gap 'F' between two grey pads. The bottom view shows a blue rectangle with a central circular hole, with grey pads at the corners and center, and dimensions 'S1' and 'F' indicated. Various other dimensions like 'C', 'S', and 'S1' are labeled with arrows pointing to specific features.	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

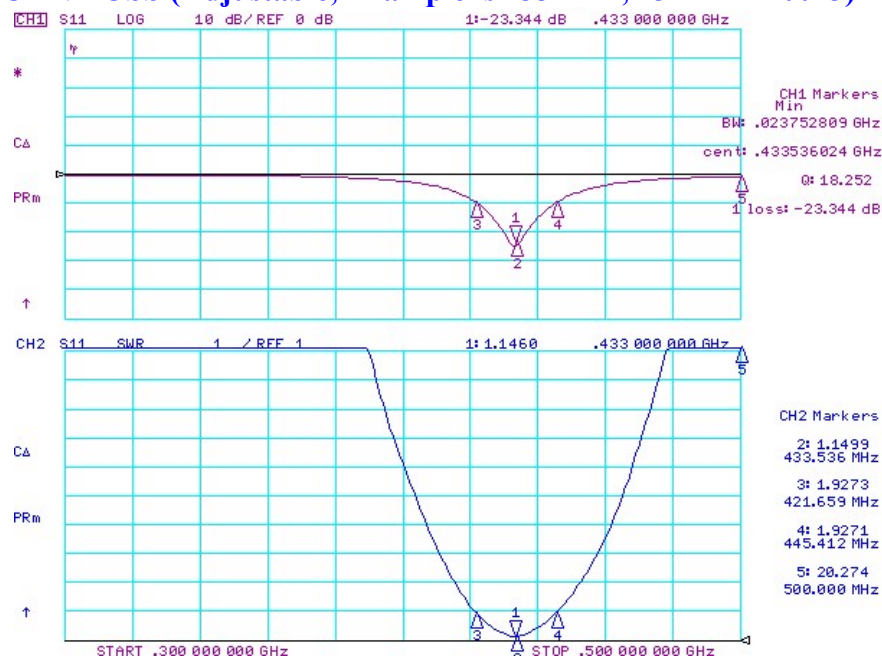


FR-4 PCB thickness = 0.8 mm

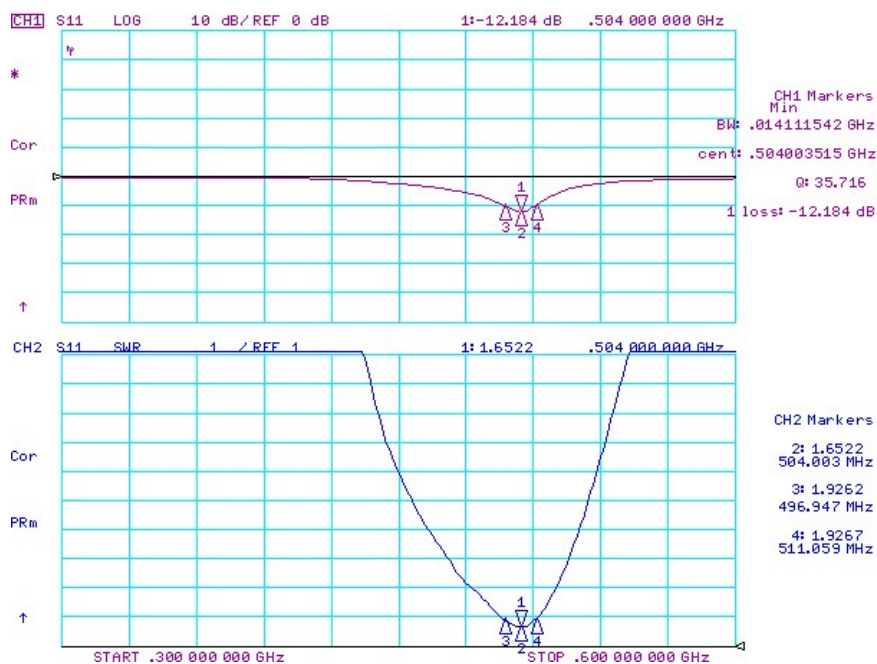
The length of transmission line = 1.35 mm (depends on PCB thickness)

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

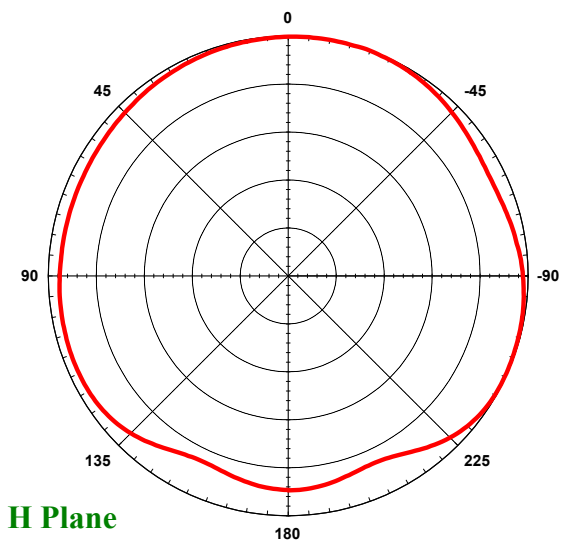
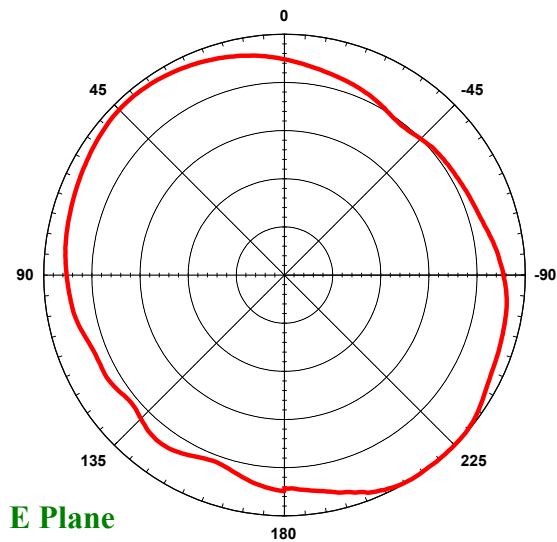


(Adjustable, Example is 490MHz, 4311 121 20049)



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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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IEC 384-10/ CECC 32 100 CLAUSE	IEC 6006868-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
		Resistance to leaching	260 ± 5 °C for 30 ± 1 s in a static solder bath	Using visual enlargement of $\times 10$, dissolution of the termination shall not exceed 10%
4.11	Ta	Solderability	Zero hour test, and test after storage (20 to 24 months) in original atmosphere; un-mounted chips completely immersed for 2 ± 0.5 s in 235 ± 5 °C.	The termination must be well tinned, at least 75% is well tinned at termination
4.12	Na	Rapid change of temperature	-55 °C (30 minutes) to +125 °C (30 minutes); 5 cycles	No visible damage Central Freq. Change $\pm 6\%$
4.14	Ca	Damp heat	500 ± 12 hours at 60 °C; 90 to 95 % RH	No visible damage 2 hours recovery Central Freq. Change $\pm 6\%$
4.15		Endurance	500 ± 12 hours at 125 °C;	No visible damage 2 hours recovery Central Freq. Change $\pm 6\%$

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ORDERING INFORMATION: 12NC Ordering Code

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

CAN 43 13 1 21 20 043 1B

CAN = Yageo Part No. for Antenna

F. Family Code

43 = Antenna

C. Packing Type Code

13 = Bulk, 1000 pcs

M. Materials Code

1 = High Frequency Material

S. Size Code

21 = 6.5 * 38.0 * 0.9 mm

T. Tolerance

20 = 20 MHz Bandwidth, VSWR<3

A. Working Frequency

043 = 433MHz, Type 43 (No Marking)

046 = 460MHz, Type 46 (Marking 6)

049 = 490MHz, Type 49 (Marking 9)

Packing Type Code

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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