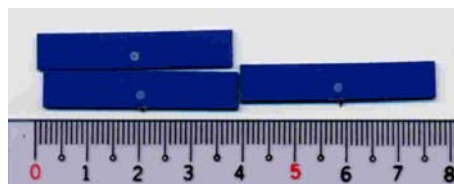


MULTILAYER CERAMIC ANTENNA (LINEAR POLARIZATION MODE) FOR 400MHz~500MHz

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

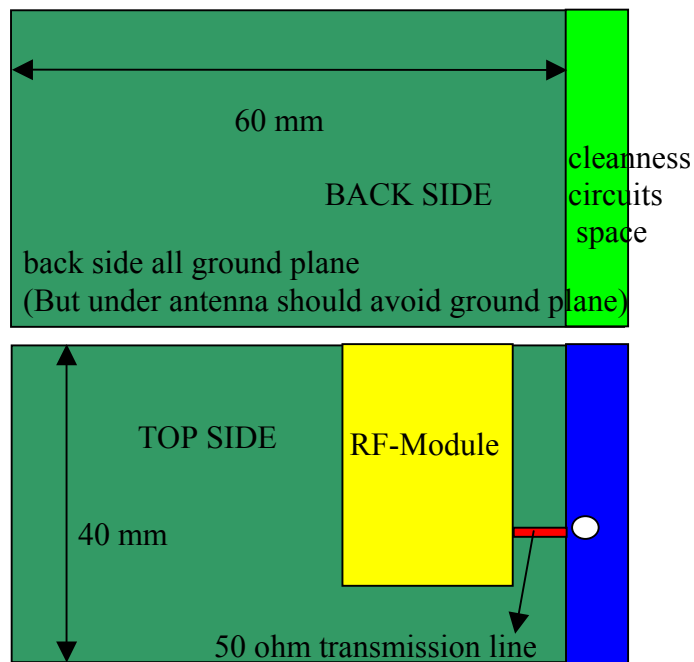


Special Environmental Concerns- Green Products Design: The foil making process is using environmentally friendly aqueous solvent technology. Termination is lead free and packing materials can be re-cycled

1. APPLICATION

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

R&D	Print date 04/10/06		Preliminary use only			
	Multilayer Ceramic Antenna for 433~500MHz				Aug. 9, 02	
			CAN4313 121 200431B CAN4313 121 200461B CAN4313 121 200491B		Oct. 14, 02	
Grant/Cliff		Oct. 14, 02		Page 1	sheet 190-1	A4
spec.doc	PHYCOMP Ltd.					



2. SOLDER LAND PATTERN FOR ANTENNA

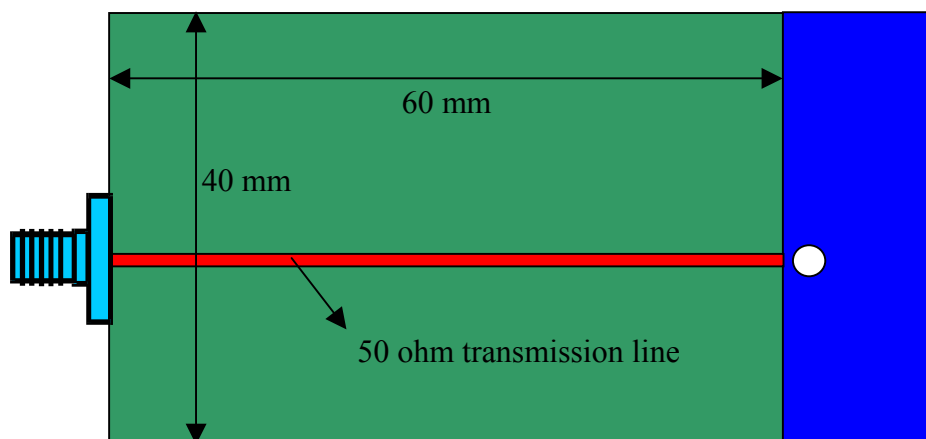
Figure	Dimensions		Remark
	L	7.30 ± 0.50 mm	Feed pad
	F	2.50 ± 0.50 mm	
	C	0.90 ± 0.10 mm	Mount pad
	S	2.50 ± 0.50 mm	

R&D	Print date 04/10/06		Preliminary use only			
	Multilayer Ceramic Antenna for 433~500MHz				Aug. 9, 02	
			CAN4313 121 200431B CAN4313 121 200461B CAN4313 121 200491B		Oct. 14, 02	
Grant/Cliff		Oct. 14, 02	Page 2	sheet 190-2		A4
spec.doc	PHYCOMP Ltd.					

3. MECHANICAL DATA

Figure	Dimension		Port
	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

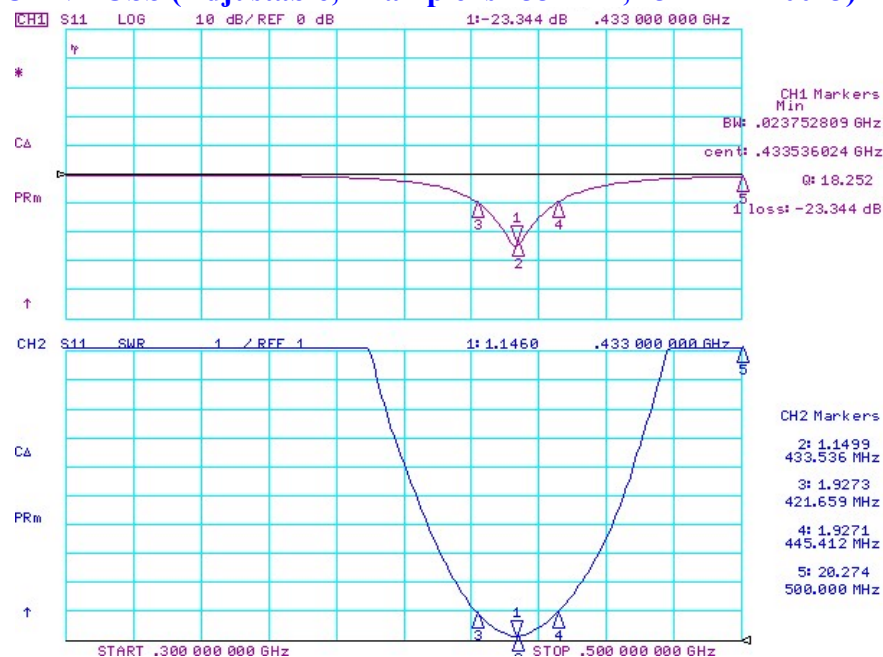


FR-4 PCB thickness = 0.8 mm

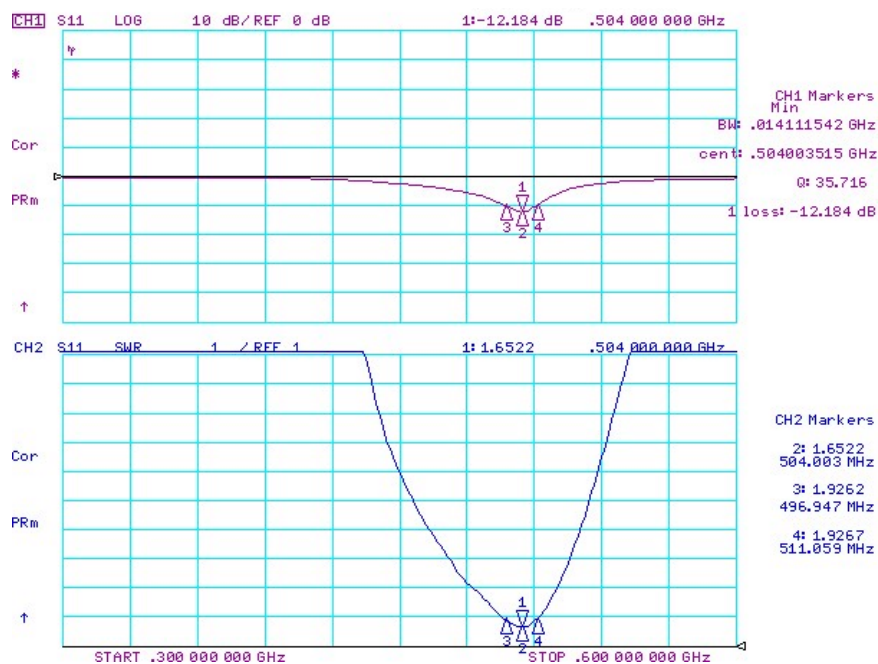
The length of transmission line = 1.35 mm (depends on PCB thickness)

R&D	Print date 04/10/06				Preliminary use only				
	Multilayer Ceramic Antenna for 433~500MHz				CAN4313 121 200431B CAN4313 121 200461B CAN4313 121 200491B			Aug. 9, 02	
								Oct. 14, 02	
Grant/Cliff									Oct. 14, 02
spec.doc	PHYCOMP Ltd.								

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

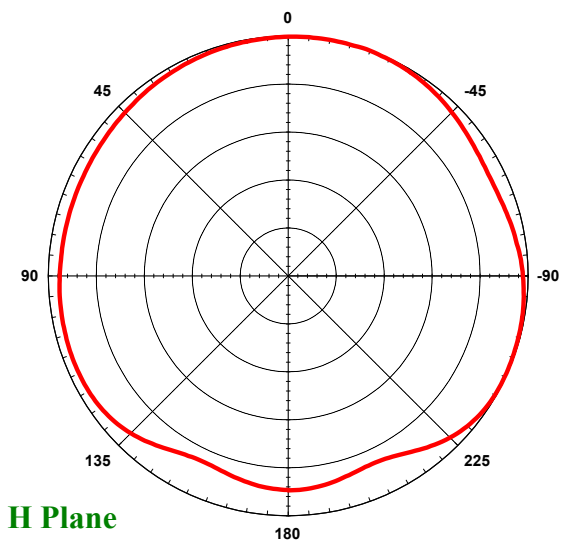
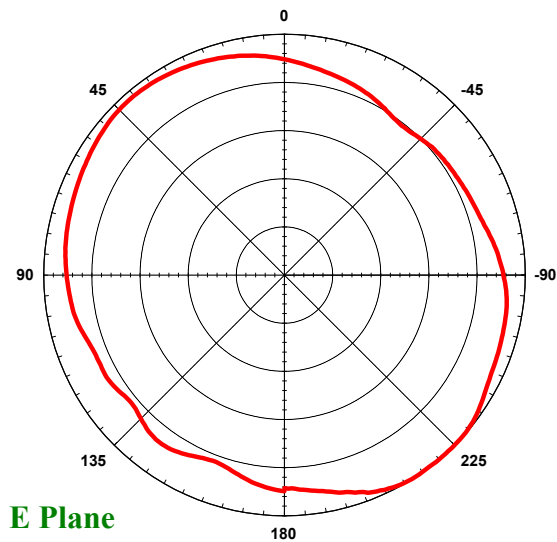


(Adjustable, Example is 490MHz, 4311 121 20049)



R&D	Print date 04/10/06			Preliminary use only					
	Multilayer Ceramic Antenna for 433~500MHz			CAN4313 121 200431B CAN4313 121 200461B CAN4313 121 200491B			Aug. 9, 02		
							Oct. 14, 02		
Grant/Cliff								Oct. 14, 02	
spec.doc	PHYCOMP Ltd.								

6. TYPICAL RADIATION PATTERN



R&D	Print date 04/10/06				Preliminary use only				
	Multilayer Ceramic Antenna for 433~500MHz				CAN4313 121 200431B CAN4313 121 200461B CAN4313 121 200491B			Aug. 9, 02	
								Oct. 14, 02	
Grant/Cliff									Oct. 14, 02
spec.doc	PHYCOMP Ltd.								

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%

R&D	Print date 04/10/06		Preliminary use only			
	Multilayer Ceramic Antenna for 433~500MHz		CAN4313 121 200431B		Aug. 9, 02	
			CAN4313 121 200461B		Oct. 14, 02	
			CAN4313 121 200491B			
Grant/Cliff		Oct. 14, 02		Page 6	sheet 190-6	A4
spec.doc	PHYCOMP Ltd.					

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 × 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 ± 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 ± 6%
4.15		Endurance	500 ± 12 hours at 125 °C;	No visible damage 2 hours recovery Central Freq. Change ± 6%

R&D	Print date 04/10/06		Preliminary use only			
	Multilayer Ceramic Antenna for 433~500MHz				Aug. 9, 02	
			CAN4313 121 200431B CAN4313 121 200461B CAN4313 121 200491B		Oct. 14, 02	
Grant/Cliff		Oct. 14, 02		Page 7	sheet 190-7	A4
spec.doc	PHYCOMP Ltd.					

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

R&D	Print date 04/10/06				Preliminary use only				
	Multilayer Ceramic Antenna for 433~500MHz				CAN4313 121 200431B CAN4313 121 200461B CAN4313 121 200491B			Aug. 9, 02	
								Oct. 14, 02	
Grant/Cliff		Oct. 14, 02		Page 8	sheet 190-8			A4	
spec.doc	PHYCOMP Ltd.								

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)	

R&D	Print date 04/10/06				Preliminary use only				
	Multilayer Ceramic Antenna for 433~500MHz				CAN4313 121 200431B CAN4313 121 200461B CAN4313 121 200491B			Aug. 9, 02	
								Oct. 14, 02	
Grant/Cliff									Oct. 14, 02
spec.doc	PHYCOMP Ltd.								