SPECIFICATION

SPEC NO. : **SP03AE24504-010**

PART NO. : **03A15D0A007D110**

PRODUCT NAME : **DCA 2450A**

DESCRIPTION : **Dielectric Antenna (10*4*2mm)**

ROHS Compliant Product

REVISION STATUS

VERSION	DATE	PAGE	REVISION DESCRIPTION	PREPARED	DESIGNED	APPROVED
01	97.10.17	全	新制定	王翠霞	徐偉泓	楊才毅

Prepared By	Designed By	Approved By
王翠霞	徐偉泓	楊才毅

CIROCOMM TECHNOLOGY .

PART NUMBER : 03A15D0A007D110

1 SCOPE

This specification covers the dielectric antenna for **2400-2500** MHz.

2 Name of the product

This product is named "**Dielectric Antenna**" .

3 Electrical characteristics

3-1 Electrical characteristics of antenna

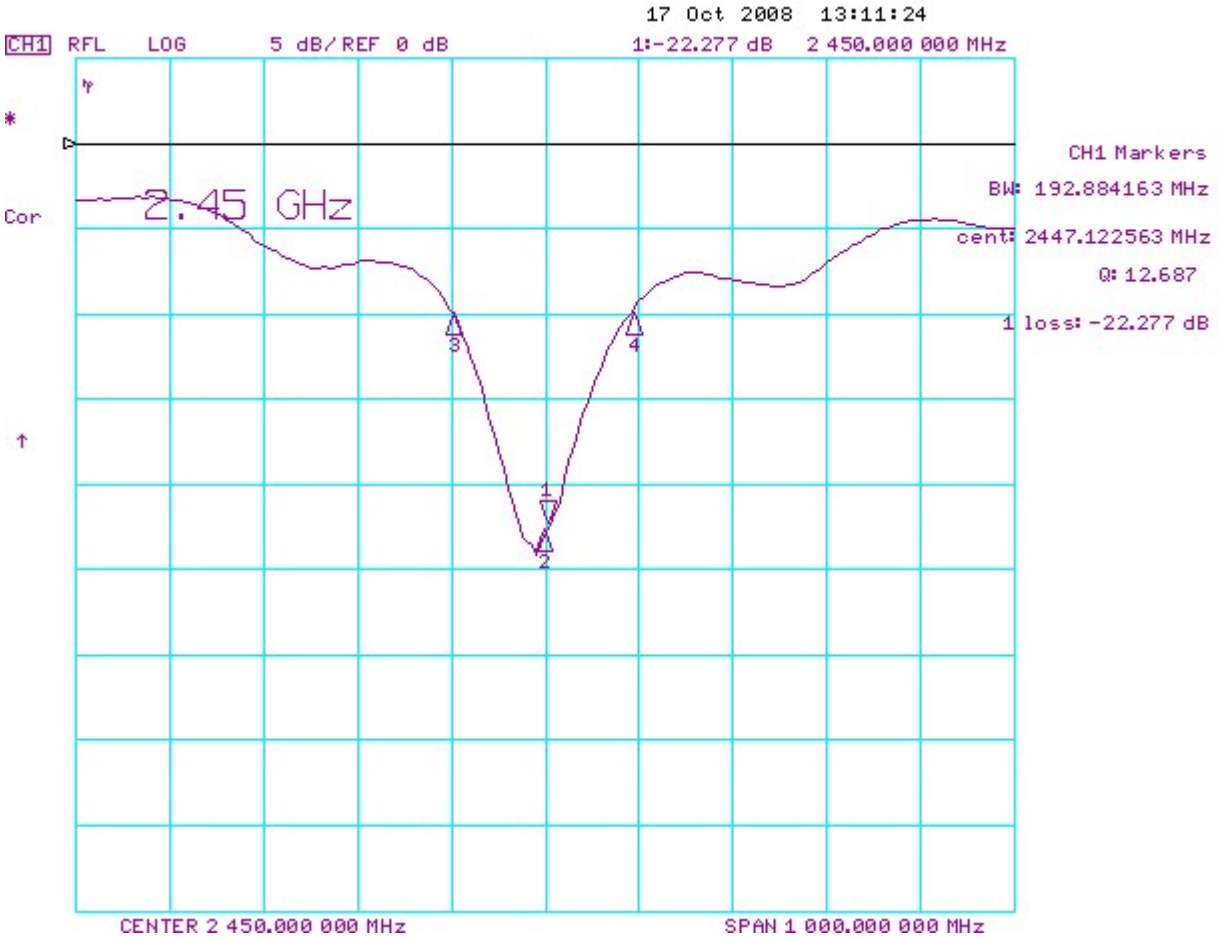
The antenna has the electrical characteristics given in Table 1 under the *cirocomm* standard installation conditions shown in the figure of Evaluation Board.

Table 1

No	Parameter	Specification
1	Working Frequency	2400~2500 MHz
2	Bandwidth	＞ 100MHz
3	Dimension	10*4.0*2.0 mm
4	VSWR	1.5 max
5	Peak Gain	2 dBi min
6	Polarization	Linear
7	Impedance	50 Ohm
8	Operating Temperature	-30~85℃
9	Termination	Ag (Environmentally-Friendly Pb Free)

* Actual value will depend on customer ground plane size

S11 Response curve



Antenna

Band	WIFI (MHz) (free space)		
	2400	2450	2500
Peak Gain (dBi)	1.87	2.56	1.75
AVE Gain (dBi)	-1.93	-1.73	-2.01
Efficiency（%）	63.04	65.13	62.81

4 Environmental conditions

4-1 Operating conditions

The antenna has the electrical characteristics given in Tables 1 in the temperature range of -30℃ to +85℃ and under the environmental conditions of +40℃ and 0-95% r.h..

4-2 Storage temperature range

The storage temperature range of product is -30℃ to +85℃

5 Reliability tests

5-5-2 and 5-6 examination of enforced. Moreover, the decision standard of the movement confirmation is judged by 3 and 4 of the tables-1, and the decision standard of the appearance isn't thought function problem become defect be.

The decision standard of the confirmation of the movement is doing the characteristic electric standard of the antenna module. And, the decision standard of the appearance isn't thought function problem become defect be.

5-1. Low-temperature test

Expose the specimen to -30 ℃ for 500 hours and then to normal temperature/humidity for 24 hours or more. After that examine the appearance and functions.

5-2 High-temperature test

Expose the specimen to +85 ℃ for 500 hours and then to normal temperature/humidity for 24 hours or more. After that examine the appearance and functions.

5-3 High-temperature/high-humidity test

Subject the object to the environmental conditions of +85℃ and 90-95% r.h. for 96 hours, then expose to normal temperature/humidity for 24 hours or more After this, check the appearance and functions.

5-4 Thermal shock test

Subject the object to cyclic temperature change (-30℃, 30 minutes ⟺ +85℃, 30 minutes) for 5 cycles, the expose to normal temperature/humidity for 24 hours or more.

5-5 Vibration test

5-5-1 Sinusoidal vibration test

Subject the object to vibrations of 5 to 200 to 5Hz swept in 10 minutes, 4.5G at maximum (2mm amplitude), in X and Y directions for two hours each and in Z direction for four hours. After this, check the appearance functions.

5-5-2 Vibration test in packaged condition

Subject the object, which is packaged as illustrated, to vibrations of 15 to 60 to 15Hz swept in 6 minutes, 4G at maximum (2mm amplitude at maximum), applied in X, Y and Z directions for two hours each, i.e. six hours in total. After this, check the appearance and functions.

5-6 Free fall test in packaged condition

Drop the object, which is packaged as illustrated, to a concrete surface from the height of 90 cm, on one comer, three edges and six faces once each, i.e. 10 times in total. After this, check the appearance and functions.

5-7. Soldering Heat Resistance Test:

After the lead pins of the unit are soaked in solder bath at 270 ±5℃ for 10± 0.5 seconds and then be left for more than 1 hour at 25±5℃ in less than 65% relative humidity.

5-8. Adhesion Test:

The device is subjected to be soldered on test PCB. Then apply 0.5Kg(5N) of force for 10±1 seconds in the direction of parallel to the substrate. (the soldering should be done by reflow and be conducted with care so that the soldering is uniform and free of defect by stress such as heat shock) .

6 Inspection

As for the examination in the mass production, the receiving character of the ratio wave sent in a shield box from the standard antenna and VSWR are confirmed in the picking out examination.

7 Warranty

If any defect occurs form the product during proper use within a year after delivery, it will be repaired or replaced free of charge.

8 Other

Any question arising from this specification manual shall be solved by arrangement made by both parties.

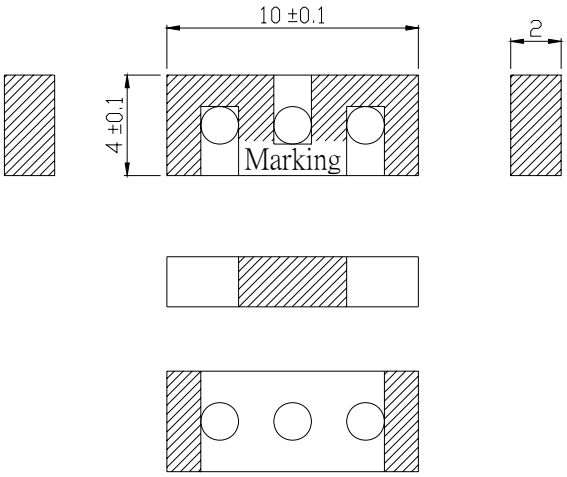
9 Precautions for use

- Antenna pattern use a Ag electrode.

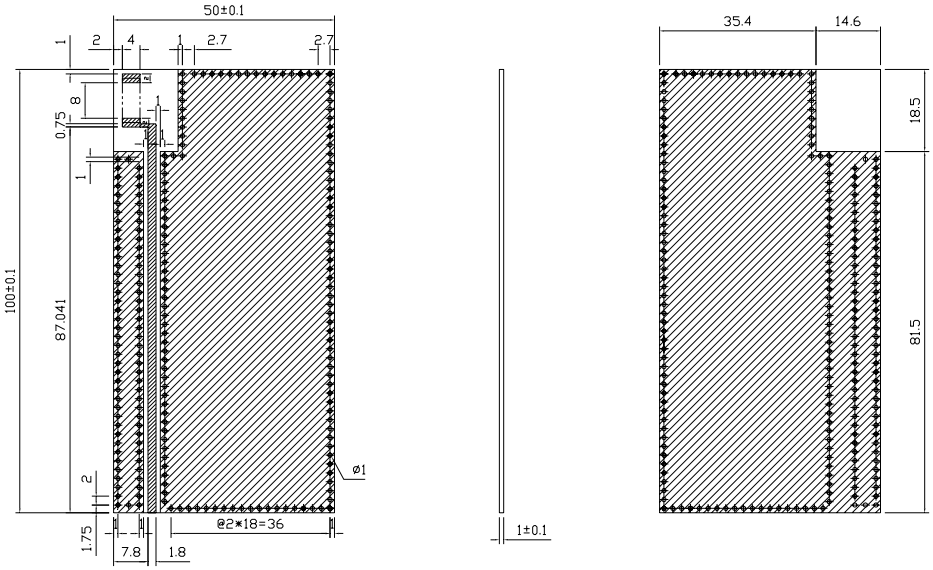
- Please don't use the corrosion gas (sulfur gas, chlorine gas) in the atmosphere.
- Please don't direct solder onto the gold electrode of Antenna pattern.

10. Drawings

Shape and Dimension



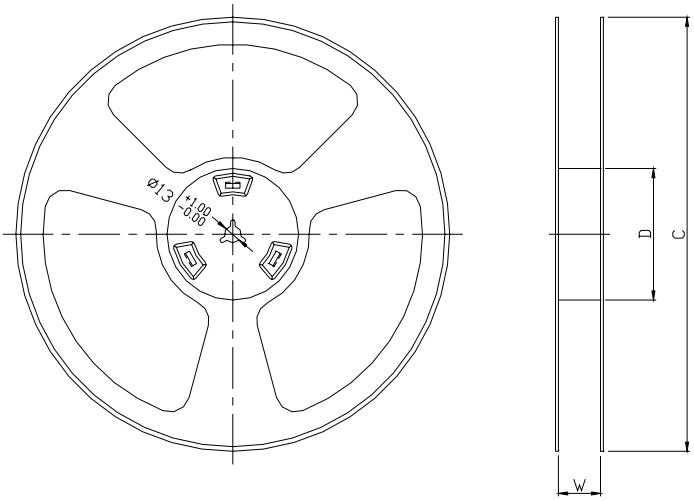
Evaluation Board Dimension



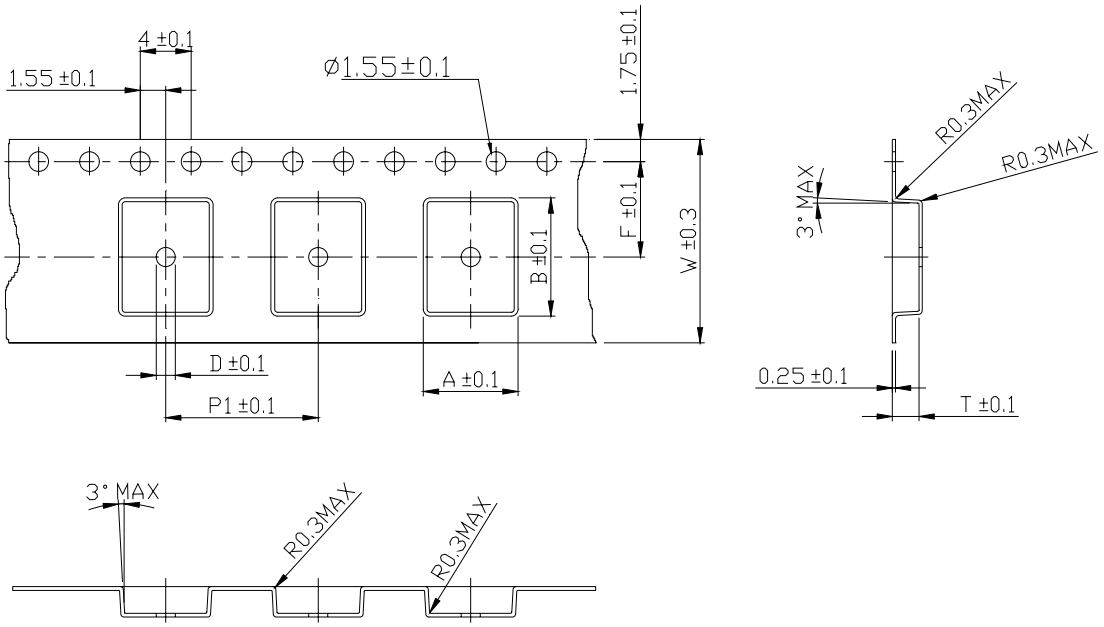
1.Substrate:FR4,t=1.0mm
2.Electrode:Cu,t=35 μ m

Delivery mode

1 Blister tape to IEC 286-3，polyester。
2 Pieces/tape：1500



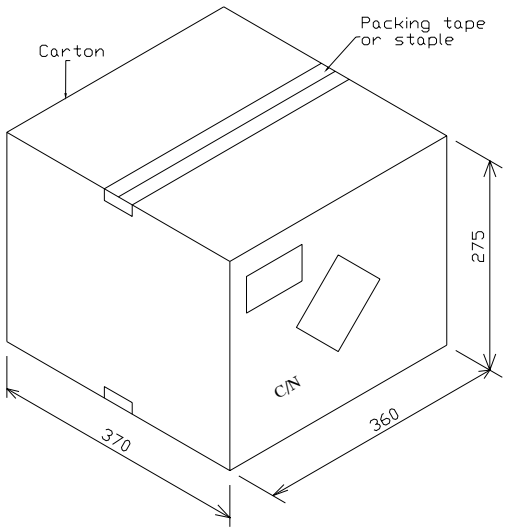
Product code	Units per Reel	C (mm)	D (mm)	W (mm)
Antenna	1500	330±1	100±0.5	24 +1 -0



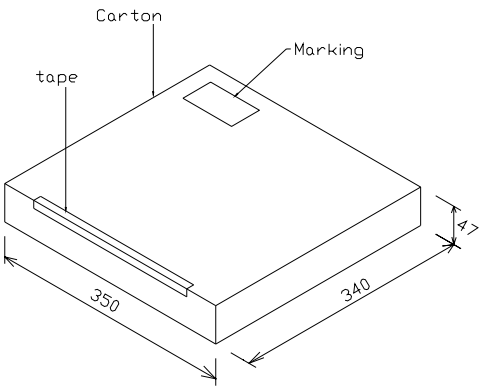
No	Index	Spec. (mm)
1	A	4.6
2	B	10.6
3	P1	12
4	W	24
5	F	8.5
6	T	2.5
7	D	1.5

3 Package style

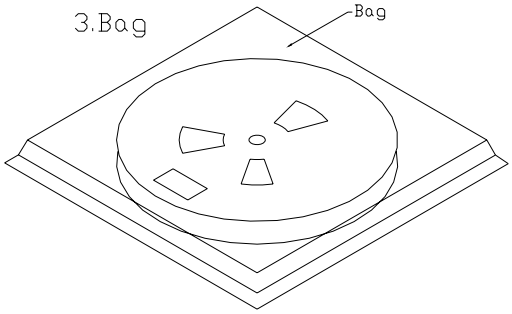
1.Outer Carton



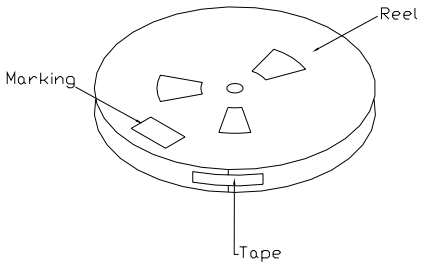
2.Inner Carton



3.Bag

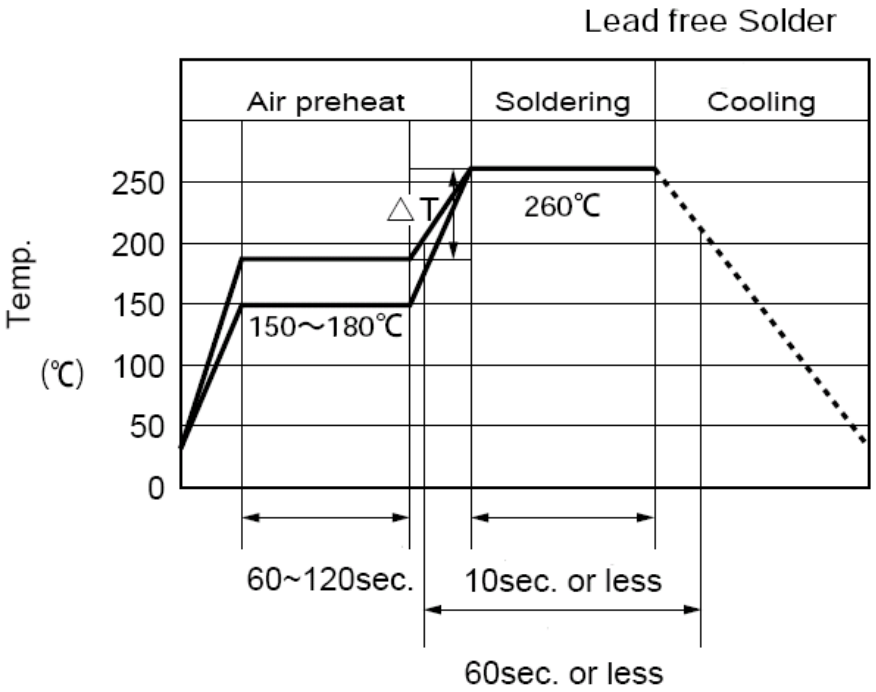


4.Taping



Unit:mm

Recommended Soldering condition



1. Time shown in the above figures is measured from the point when chip surface reaches temperature.
2. Temperature difference in high temperature part should be within 110°C.
3. After soldering, do not force cool, allow the parts to cool gradually.

*General attention to soldering:

- High soldering temperatures and long soldering times can cause leaching of the termination, decrease in adherence strength, and the change of characteristic may occur.
- For soldering, please refer to the soldering curves above. However, please keep exposure to temperatures exceeding 200°C to under 50 seconds.
- Please use a mild flux (containing less than 0.2wt% Cl). Also, if the flux is water soluble, be sure to wash thoroughly to remove any residue from the underside of components that could affect resistance.

Cleaning:

When using ultrasonic cleaning, the board may resonate if the output power is too high. Since this vibration can cause cracking or a decrease in the adherence of the termination, we recommend that you use the conditions below.

Frequency: 40 kHz max.

Output power: 20W/liter

Cleaning time: 5minutes max.