

**Dielectric Chip Antenna 3200~7200MHz**  
**Part No: MP11492**

**Model: DCA00S03**  
**Rev. No: 2**

### **1. SCOPE:**

This specification covers the dielectric chip antenna for Ultra-Wideband Applications.

### **2. NAME OF THE PRODUCT:**

This product is named "Dielectric Chip Antenna".

### **3. ELECTRICAL CHARACTERISTICS:**

#### 3.1. Electrical characteristics of antenna

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

Table 1

No	Parameter	Specification
1	Working Frequency	3200~7200 MHz
2	VSWR	3.2 (Max)
3	Peak Gain	4.7dBi (@4200MHz) 4.7dBi (@6200MHz)
4	Impedance	50Ohm
5	Operating Temperature	-40°C ~ +110°C
6	Maximum Power	4W
7	Resistance to Soldering Heats	10 sec. (@260°C)
8	Polarization	Linear
9	Azimuth	Omni-directional
10	Termination	Cu / Sn (Leadless)

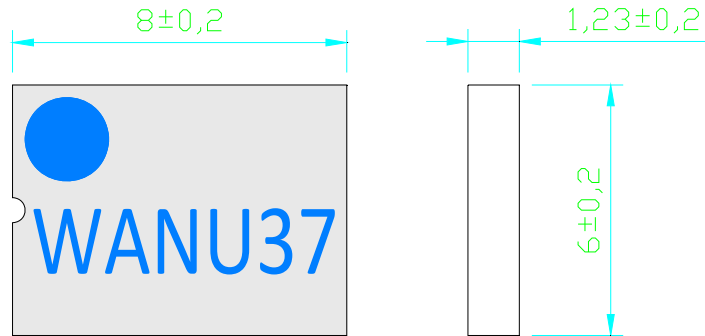
\*Actual performance will depend on customer device environment.

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**4. ANTENNA:**

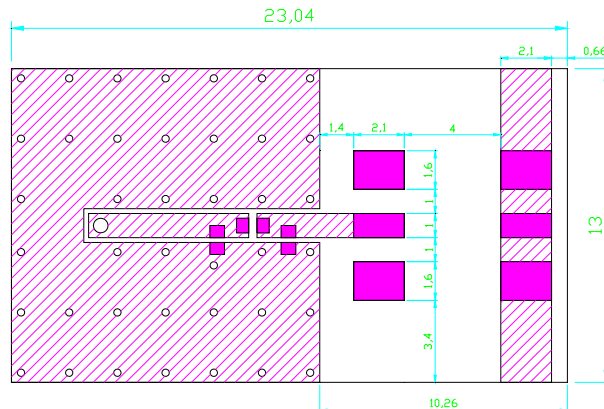
4.1. Antenna Dimension



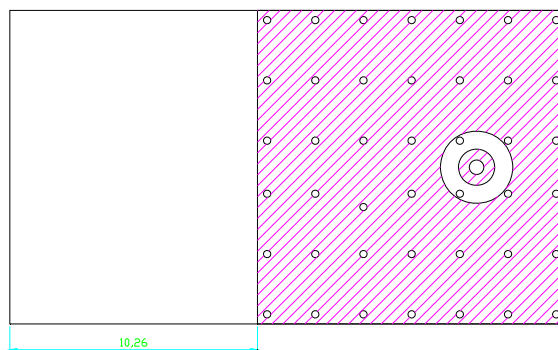
Unit: mm

4.2. Evaluation Board Recommended Layout

Top



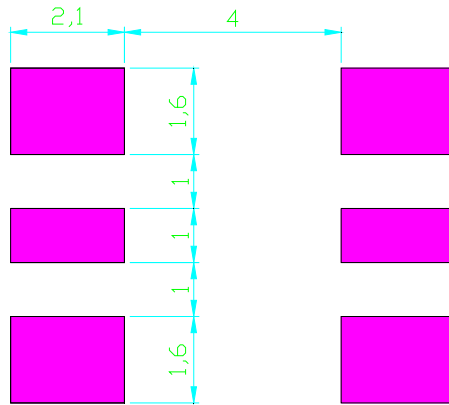
Bottom (viewed from underneath)



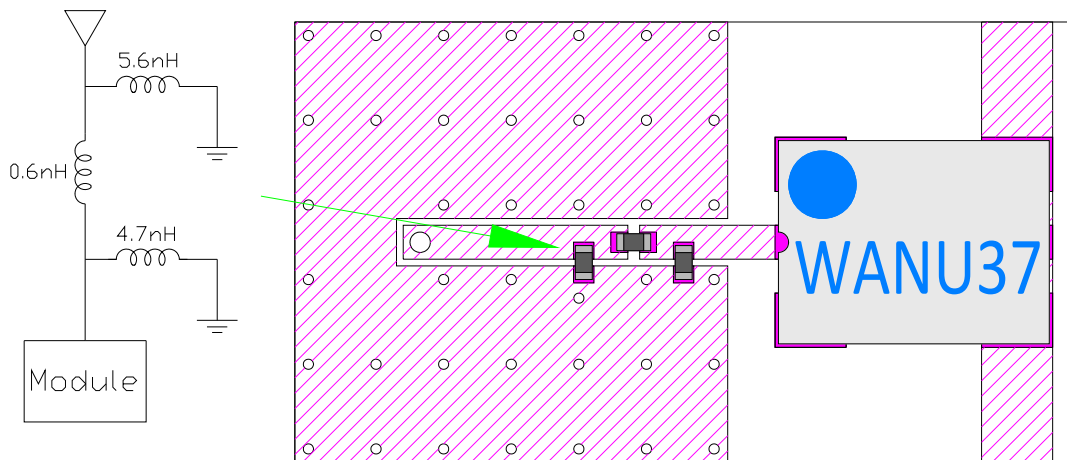
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4.3. FootPrint



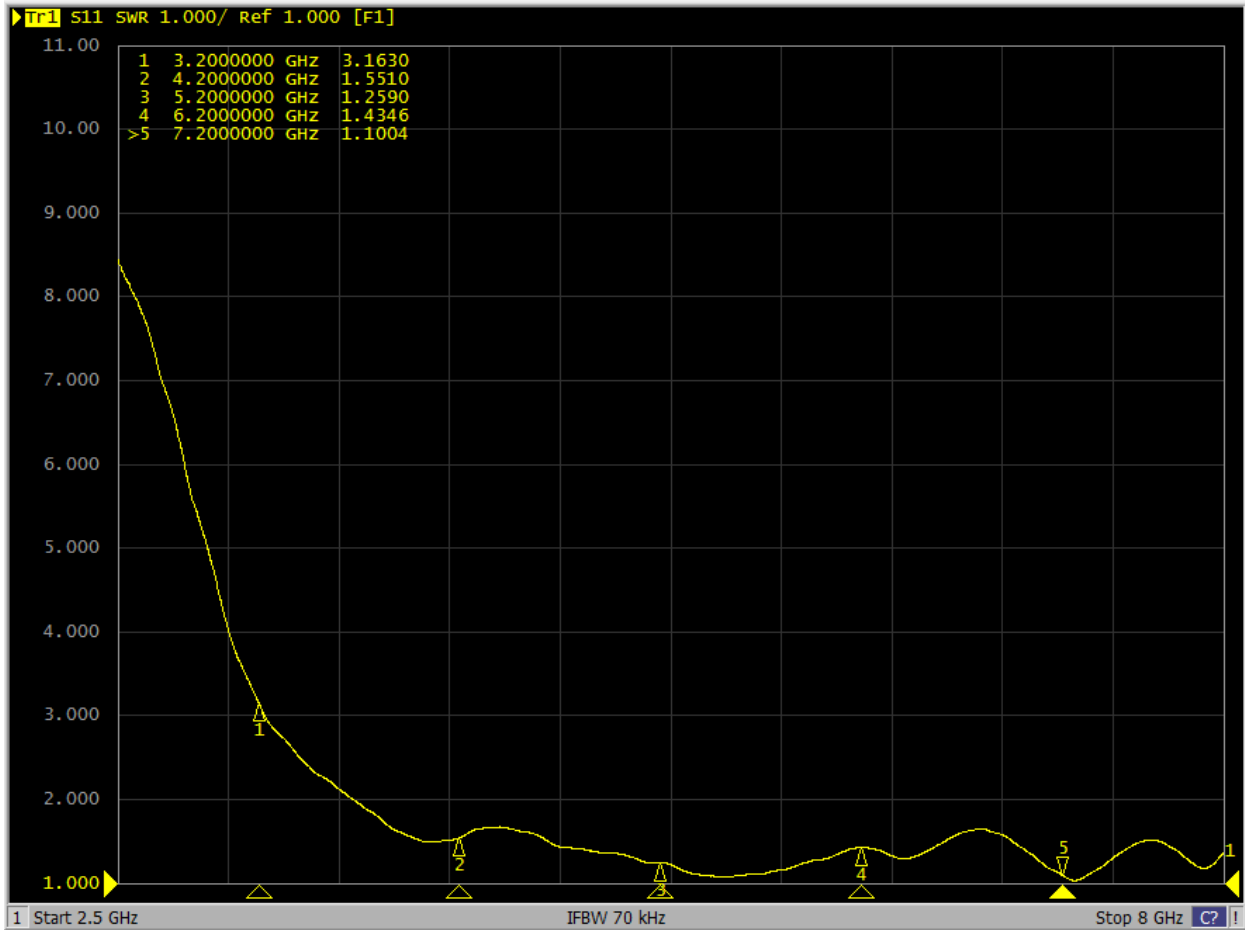
4.4. Antenna Measurement on Demo Board



**Dielectric Chip Antenna 3200~7200MHz**  
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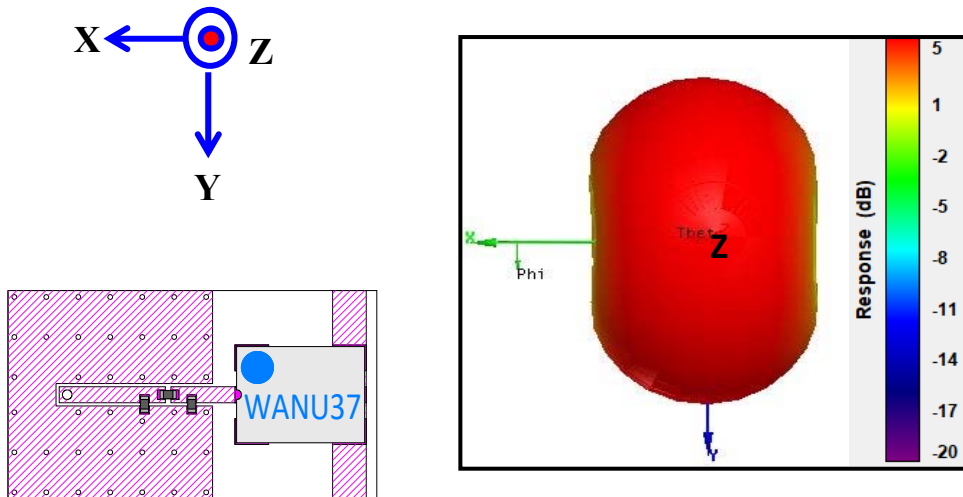
**Model: DCA00S03**  
**Rev. No: 2**

#### 4.5. VSWR

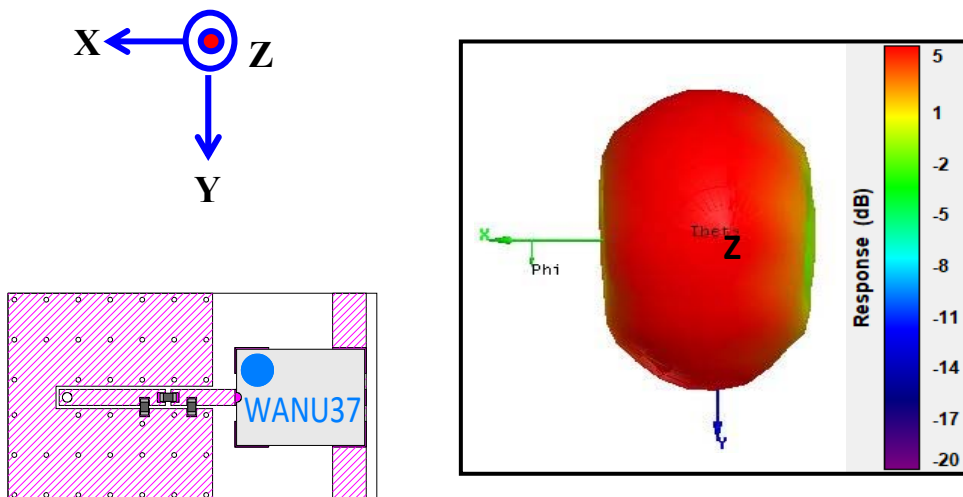


4.6. Electrical performance

3D Radiation Pattern for Frequency 4200MHz



3D Radiation Pattern for Frequency 6200MHz



	Efficiency	Peak Gain
4200MHz	72.72%	4.71dBi
6200MHz	74.65%	4.75dBi

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## **5. ENVIRONMENTAL CONDITIONS:**

### 5.1. Operating conditions

The antenna has the electrical characteristics given in Tables 1 in the temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  and under the environmental conditions of  $+40^{\circ}\text{C}$  and 0-95% relative humidity.

### 5.2. Storage temperature range

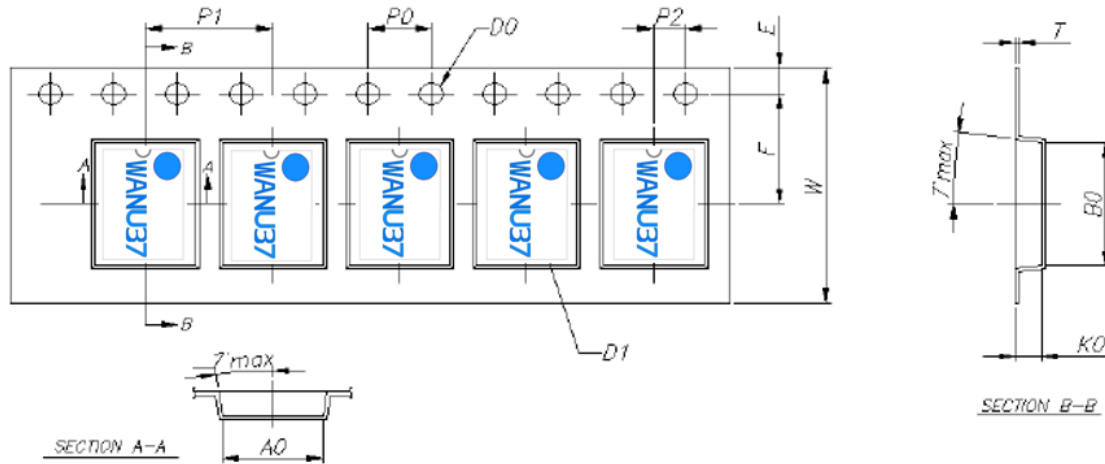
The storage temperature range of product is  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

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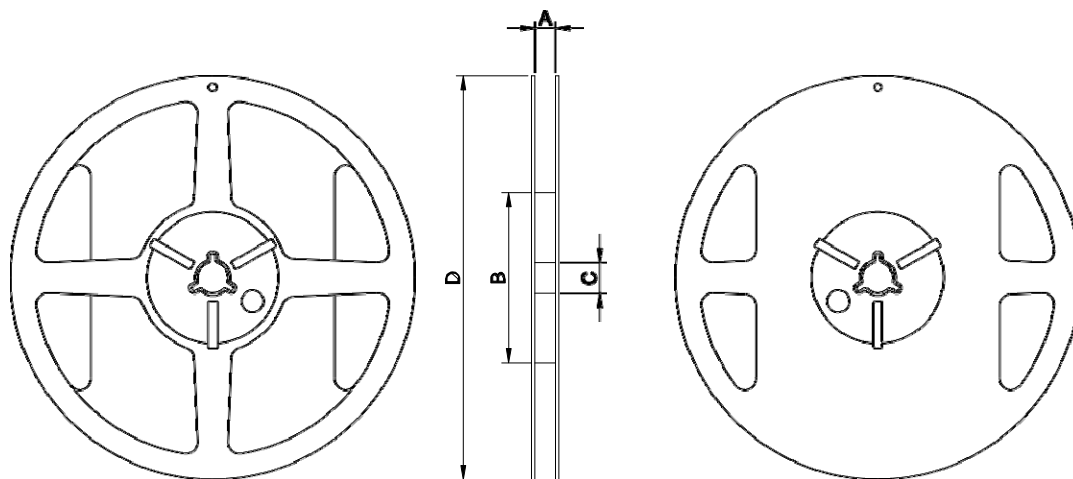
**6. PACKAGING INFORMATION:**

6.1. Tape Specification:



W	Ao	Bo	Ko	P1	F	E	D0	D1	Po	P2	t
16.0	6.35	8.36	1.68	8.00	7.50	1.75	1.50	1.55	4.00	2.00	0.25
±0.20	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05	±0.10	±0.05	±0.02

6.2. Reel Specification: (7", Φ180mm)



7"x 16 mm

Tape Width(mm)	A(mm)	B(mm)	C(mm)	D(mm)	Chip/Reel(pcs)
16	16±1.0	60±2	13.5±0.5	178±2	1000

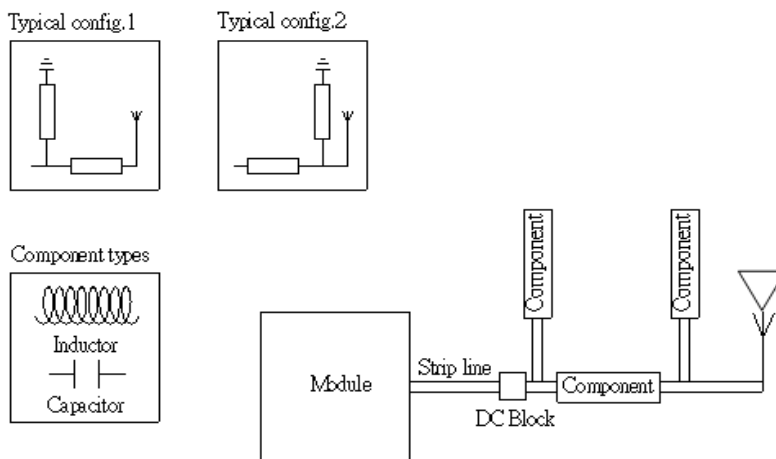
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**7. TRANSMISSION LINE AND MATCHING:**



The matching network has to be individually designed using one,two or three components.

**8. RECOMMENDED REFLOW SOLDERING PROFILE:**

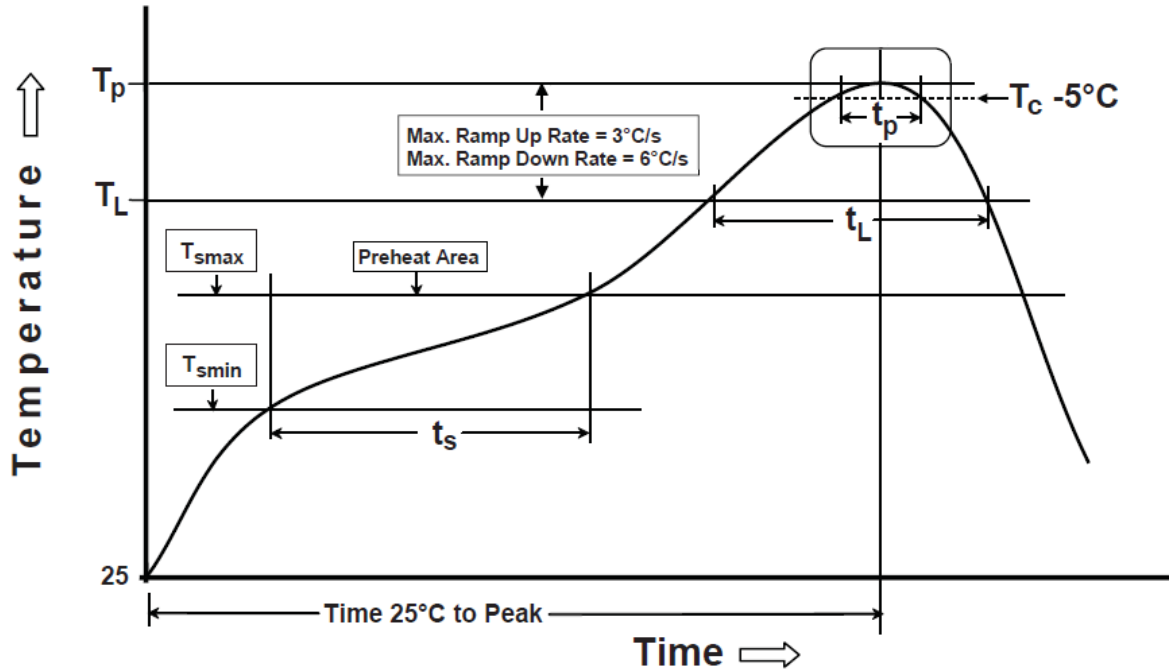
The products can be assembled following Pb-free assembly. According to the Standard IPC/JEDEC J-STD-020C, the temperature profile suggested is as follows:

Phase	Profile features	Pb-Free Assembly (SnAgCu)
PREHEAT	-Temperature Min (T <sub>min</sub> ) -Temperature Max (T <sub>max</sub> ) -Time(ts) form (T <sub>min</sub> to T <sub>max</sub> )	150°C 180°C 60~120 seconds
RAMP-UP	Avg. Ramp-up Rate (T <sub>max</sub> to TP)	3°C/second(max)
REFLOW	-Temperature (TL) -Total Time above TL (tL)	230°C 30~60 seconds
PEAK	-Temperature (TP) -Time (tp)	250~260°C 5~10 seconds
RAMP-DOWN	Rate	6°C / second max.
Time from 25°C to Peak Temperature		8 minutes max.
Composition of solder paste		96.5Sn/3Ag/0.5Cu
Solder Paste Model		SHENMAO PF606-P26

Note: All the temperature measure point is on top surface of the component, if temperature is over recommend, it will cause surface peeling or damage.



The graphic shows temperature profile for component assembly process in reflow ovens



### 8.1. Soldering With Iron:

8.1.2. Soldering condition: Soldering iron temperature  $270 \pm 10^\circ\text{C}$ .

8.1.3. Apply preheating at  $120^\circ\text{C}$  for 2-3 minutes. Finish soldering for each terminal within 3 seconds, if soldering iron is over temperature  $270 \pm 10^\circ\text{C}$  or 3 seconds, it will make component surface peeling or damage. Soldering iron cannot leakage of electricity.