

**Dielectric Chip Antenna 2400~2500MHz**  
**Part No: MP11491**

**Model: DCAJ0S10**  
**Rev. No: 2**

**1. SCOPE:**

This specification covers the dielectric chip antenna for Bluetooth / WLAN 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 *circom* standard installation conditions shown in the figure of Evaluation Board.

Table 1

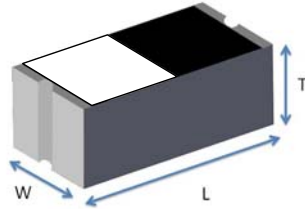
No	Parameter	Specification
1	Working Frequency	2400~2500MHz
2	Return Loss	-6.5dB (Max)
3	Peak Gain	2.7dBi
4	Impedance	50Ohm
5	Operating Temperature	-40°C ~ +110°C
6	Maximum Power	4W
7	Resistance to Soldering Heats	10 sec. ( @260°C)
8	Polarization	Linear
9	Azimuth	Omni-directional
10	Termination	Cu / Sn (Leadless)

\*Actual performance will depend on customer device environment.

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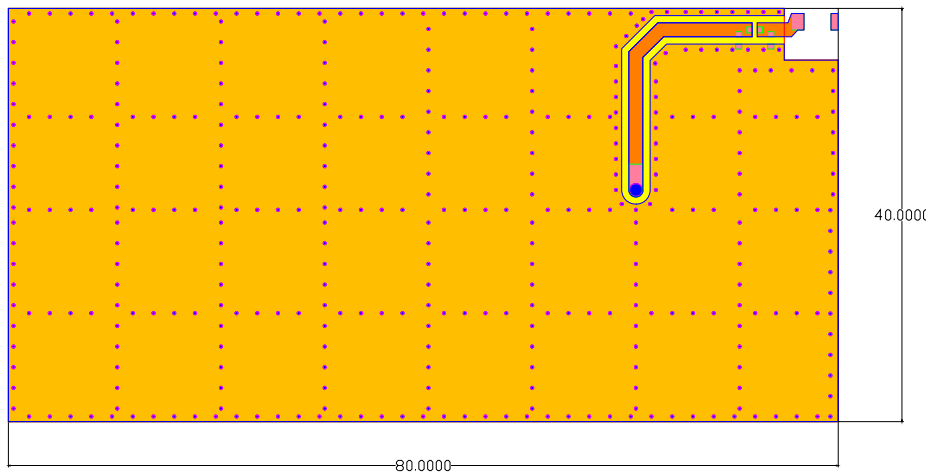
**4. ANTENNA DIMENSION:**



	Dimension (mm)
L	3.23 ±0.20
W	1.66 ±0.20
T	1.23 ±0.20

**5. RECOMMENDED PCB PATTERN:**

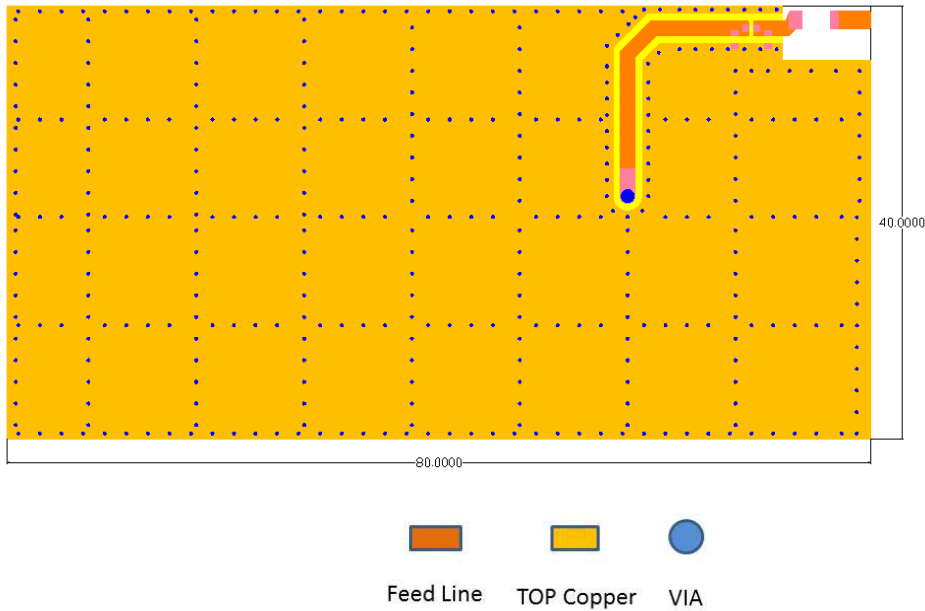
5.1.Evaluation Board Dimension (1)



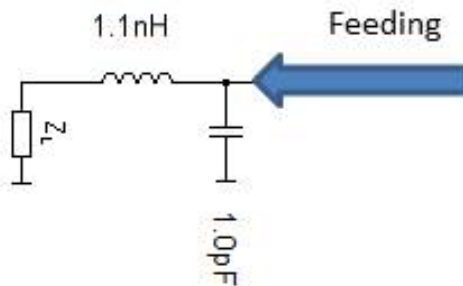
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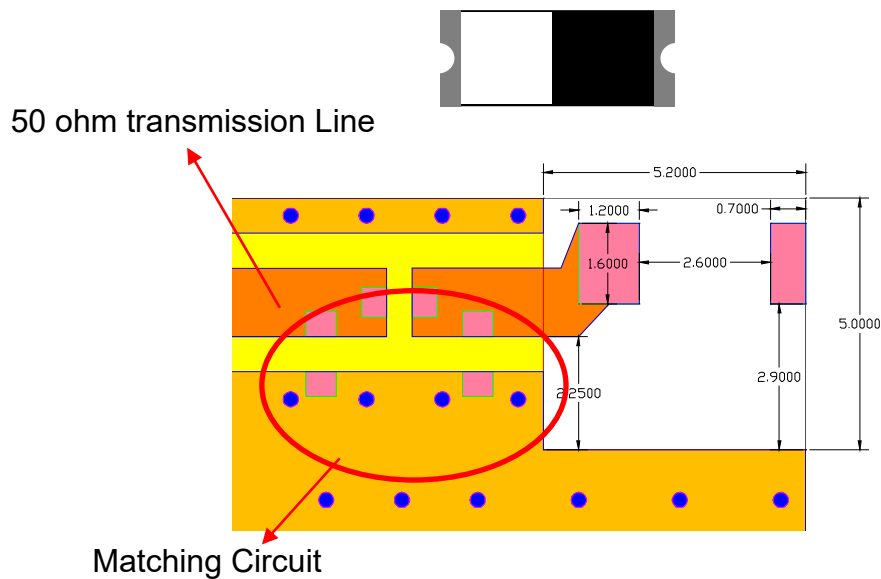
5.2. Evaluation Board Dimension (2) Improved performance if space permits



5.3. Suggested Matching Circuit



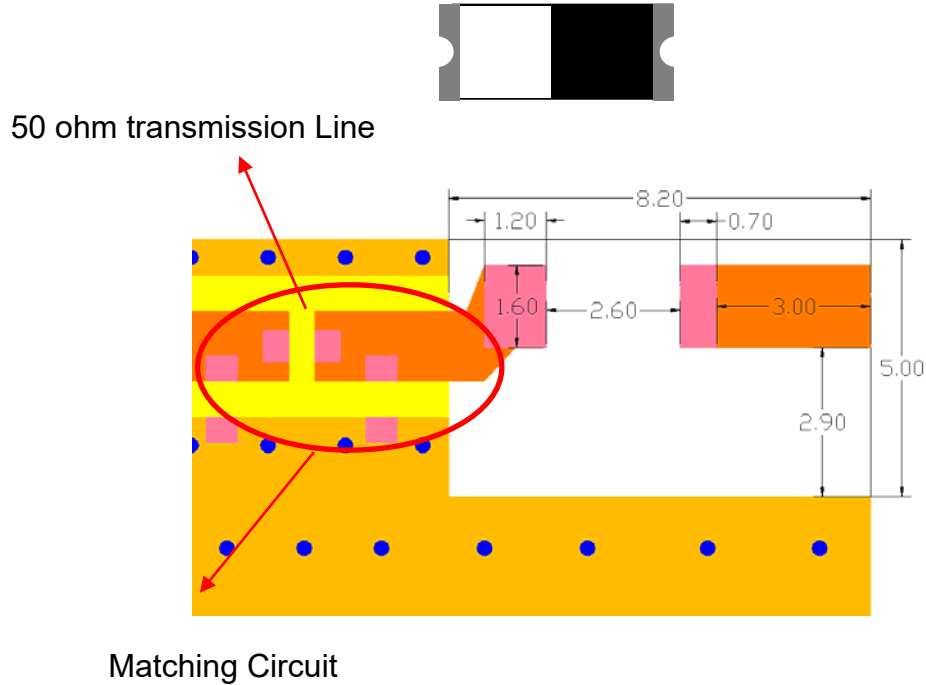
5.4. Layout Dimensions in Clearance area (Size = 5.2\*5.0mm)



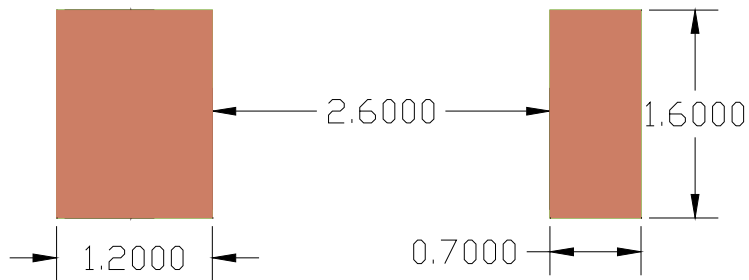
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5.5. Layout Dimensions in Clearance area (Size=8.2\*5.0mm)



6. FOOTPRINT (Unit: mm)

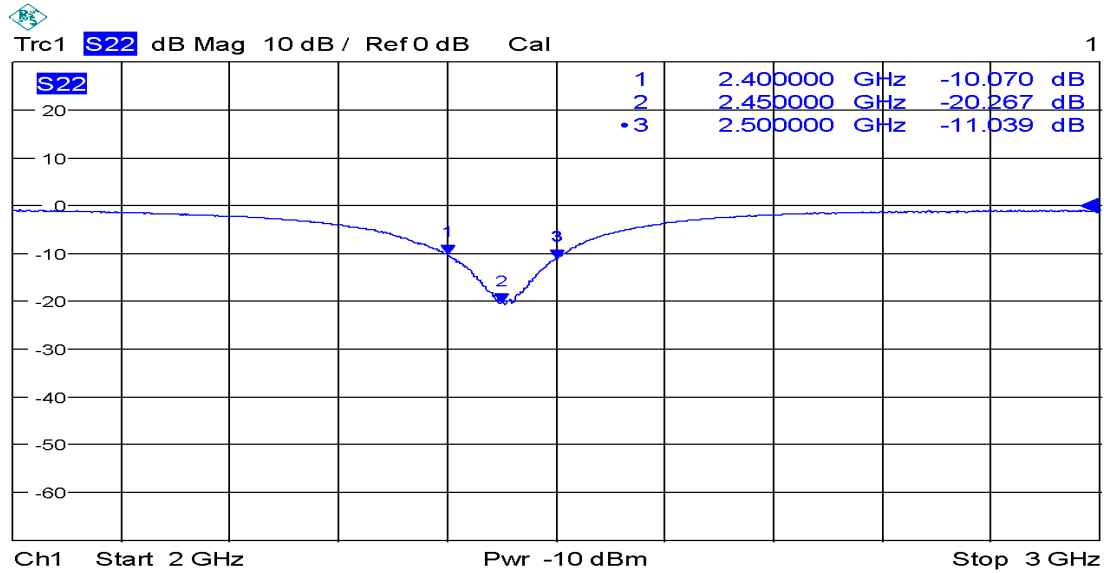


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**7. MEASUREMENT RESULTS:**

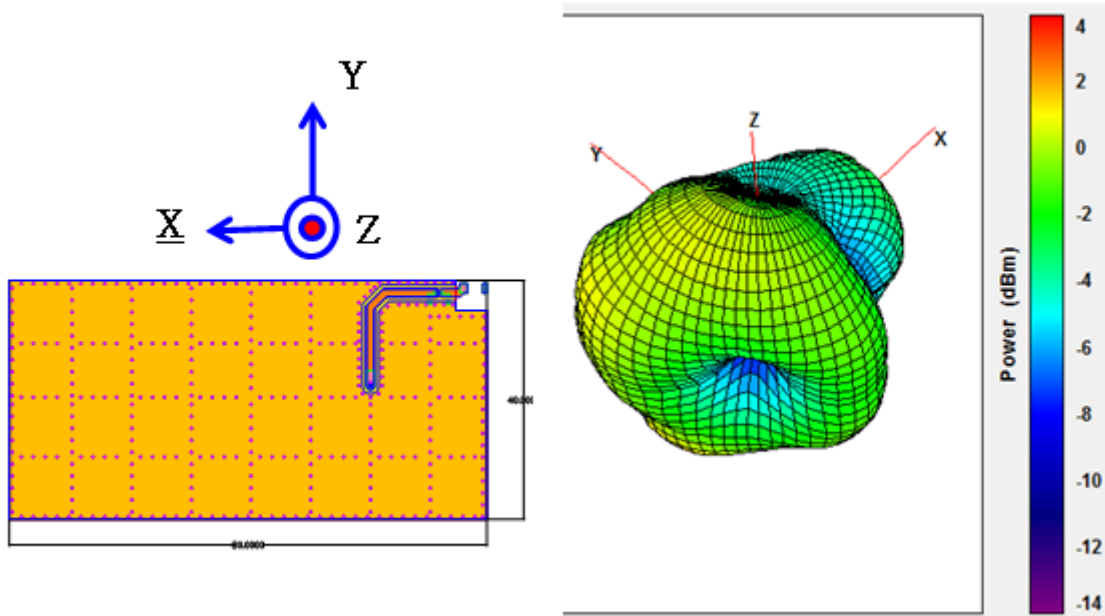
Return Loss



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**8. RADIATION PATTERN:**



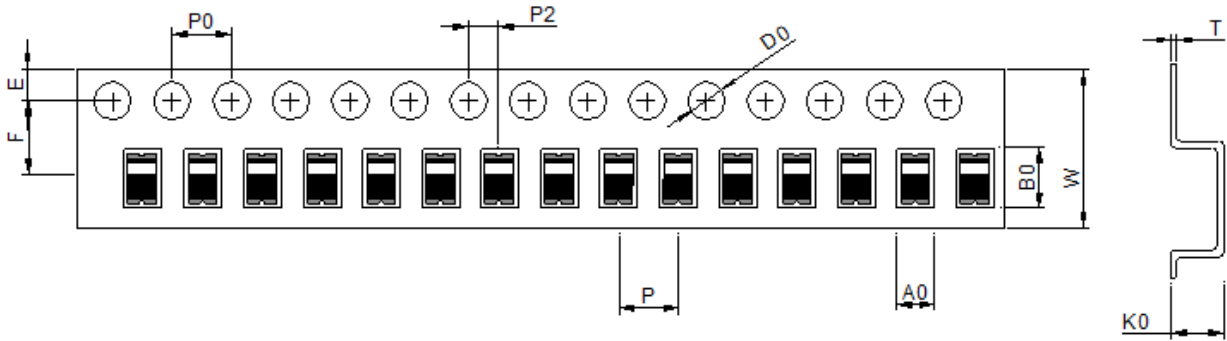
	Efficiency	Peak Gain
2400MHz	55.21 %	1.45 dBi
2450MHz	66.45 %	2.71 dBi
2500MHz	57.53 %	1.98 dBi

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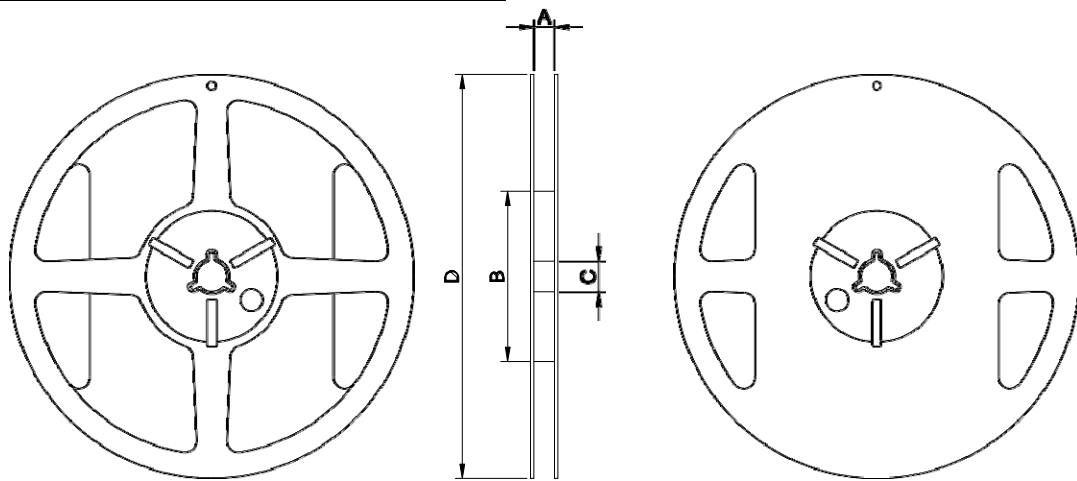
**9. PACKAGING INFORMATION:**

Tape Specification



W	Ao	Bo	Ko	P	F	E	D	D1	Po	P2	t
8.0	1.80	3.51	1.59	4.00	3.50	1.75	1.50	0.00	4.00	2.00	0.25
±0.30	±0.05	±0.10	±0.10	±0.05	±0.05	±0.10	±0.10	±0.10	±0.10	±0.05	±0.05

**10. REEL SPECIFICATION: (7", Φ180mm)**



7"x 8mm

Tape Width(mm)	A(mm)	B(mm)	C(mm)	D(mm)	Chip/Reel(pcs)
8	9.0±0.5	60±2	13.5±0.5	178±2	3000

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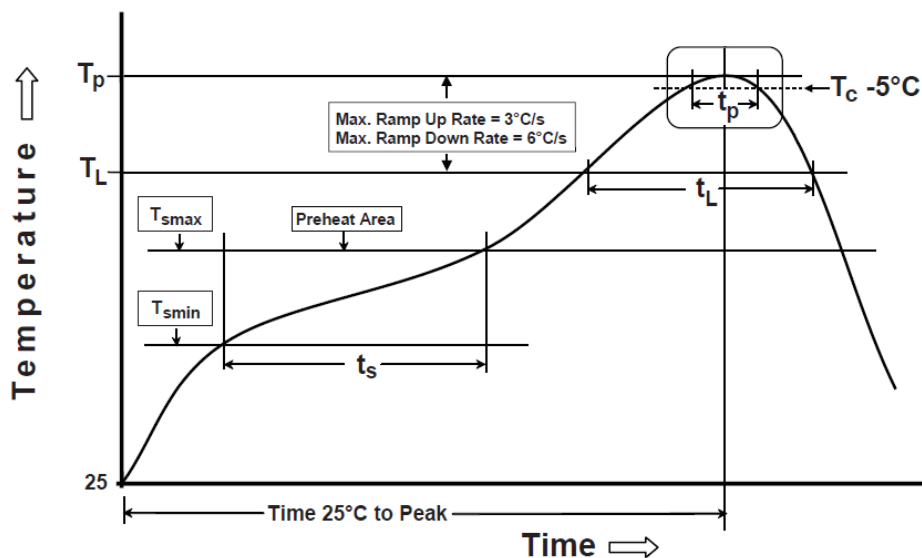
**11. RECOMMENDED REFLOW TEMPERATURE PROFILE:**

Cirocomm 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(Tsmin) -Temperature Max(Tsmax) -Time(ts) form (Tsmin to Tsmax)	150°C 200°C 60-120 seconds
RAMP-UP	Avg. Ramp-up Rate (Tsmax to TP)	3°C/second(max)
REFLOW	-Temperature(TL) -Total Time above TL (t L)	217°C 30-100 seconds
PEAK	-Temperature(TP) -Time(tp)	260°C 10 second
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 over recommend, it will make component surface peeling or damage.

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





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## **12. SOLDERING WITH IRON:**

Soldering condition: Soldering iron temperature  $270 \pm 10^{\circ}\text{C}$ . Apply preheating at  $120^{\circ}\text{C}$  for 2-3 minutes. Finish soldering for each terminal within 3 seconds, if soldering iron 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.