



TAI-SAW TECHNOLOGY CO., LTD.

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Product Specifications Approval Sheet

Product Description: Dielectric Chip Antenna 2450/5487.5MHz BW 100/675MHz
Size 3.05x1.6 mm

TST Parts No.: TQ0088AA0000

Customer Parts No.: _____

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: _____ Nina Chen *Nina Chen*

Approved by: _____ Kazuma Lee *Kazuma Lee*

Date: _____ 2022/11/09

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes.



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Dielectric Chip Antenna 2450/5487.5MHz BW 100/675MHz Size 3.05x1.6 mm

MODEL NO.: TQ0088AA0000

REV. NO.: 1.0

A. Maximum Rating:

1. Operating Temperature: -40°C to +85°C
2. Storage Temperature: -40°C to +85°C
3. Moisture Sensitivity Level: Level 1 (MSL 1)

RoHS Compliant
Lead free
Lead-free soldering

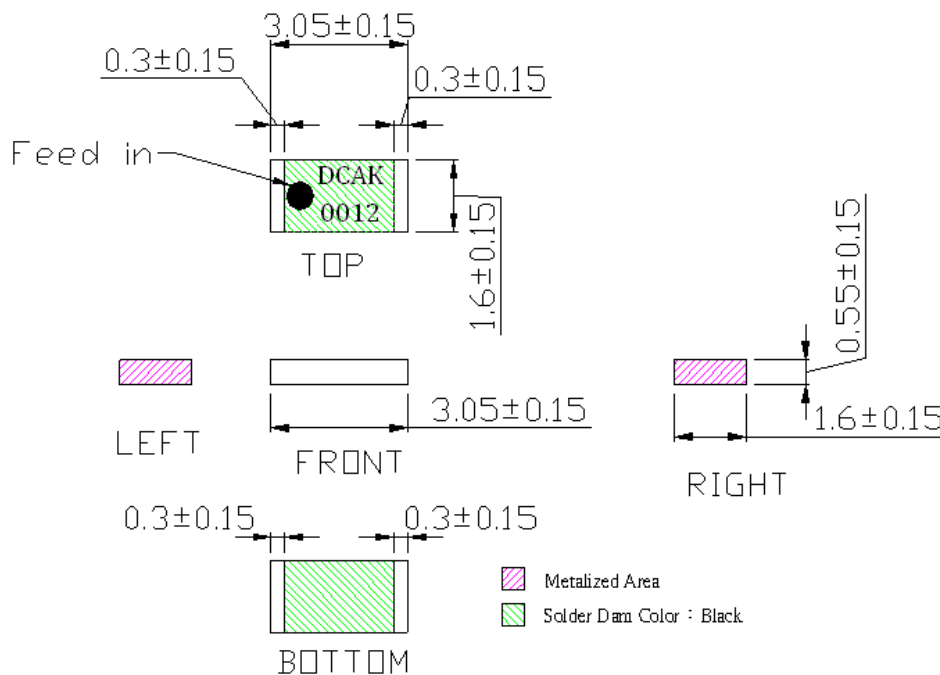
Electrostatic Sensitive Device (ESD)

B. Electrical Characteristics:

Item	Unit	Spec	
Working Frequency	MHz	2400~2500	5150~5825
VSWR	-	2.0	2.0
Peak gain	dBi	1.0 (Typ)	2.5 (Typ)
Efficiency	%	75	80
Polarization	-	Linear	

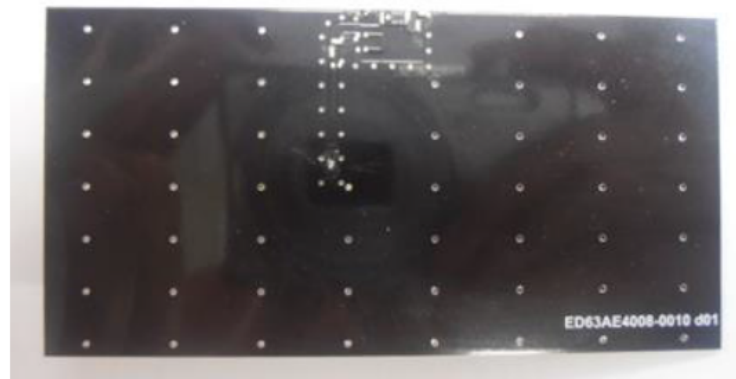
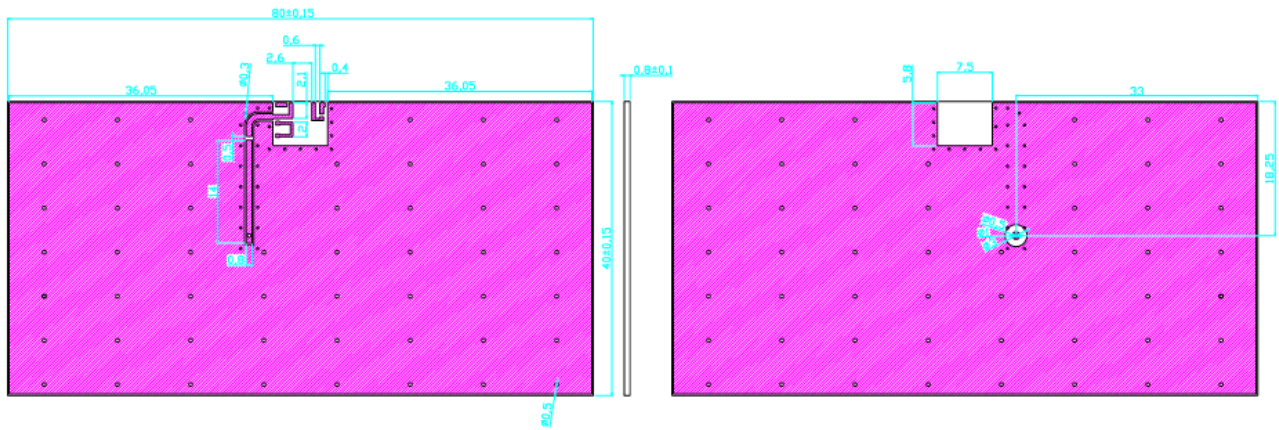
C. Dimension:

Antenna Dimension

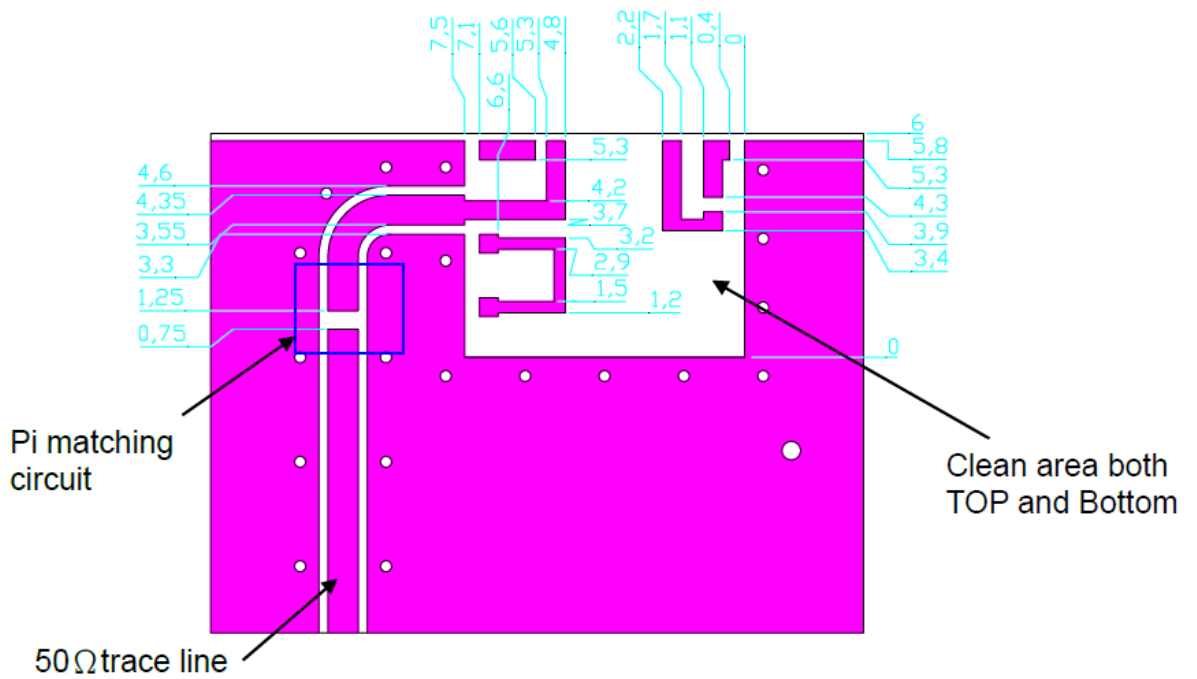


Unit: mm

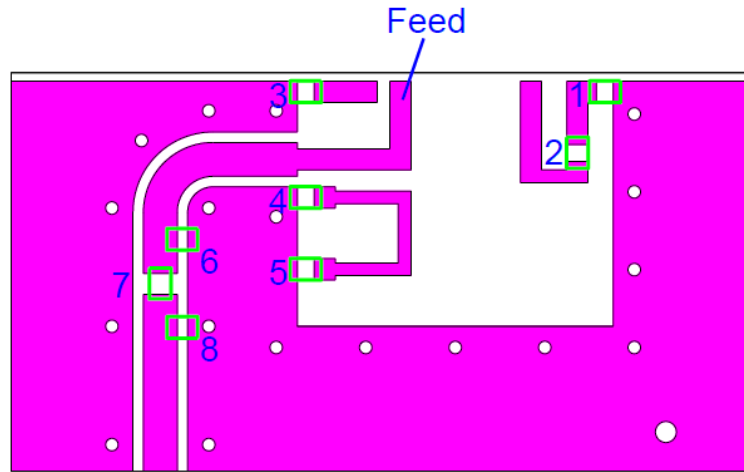
Demo Board Dimension



Recommend Layout dimension

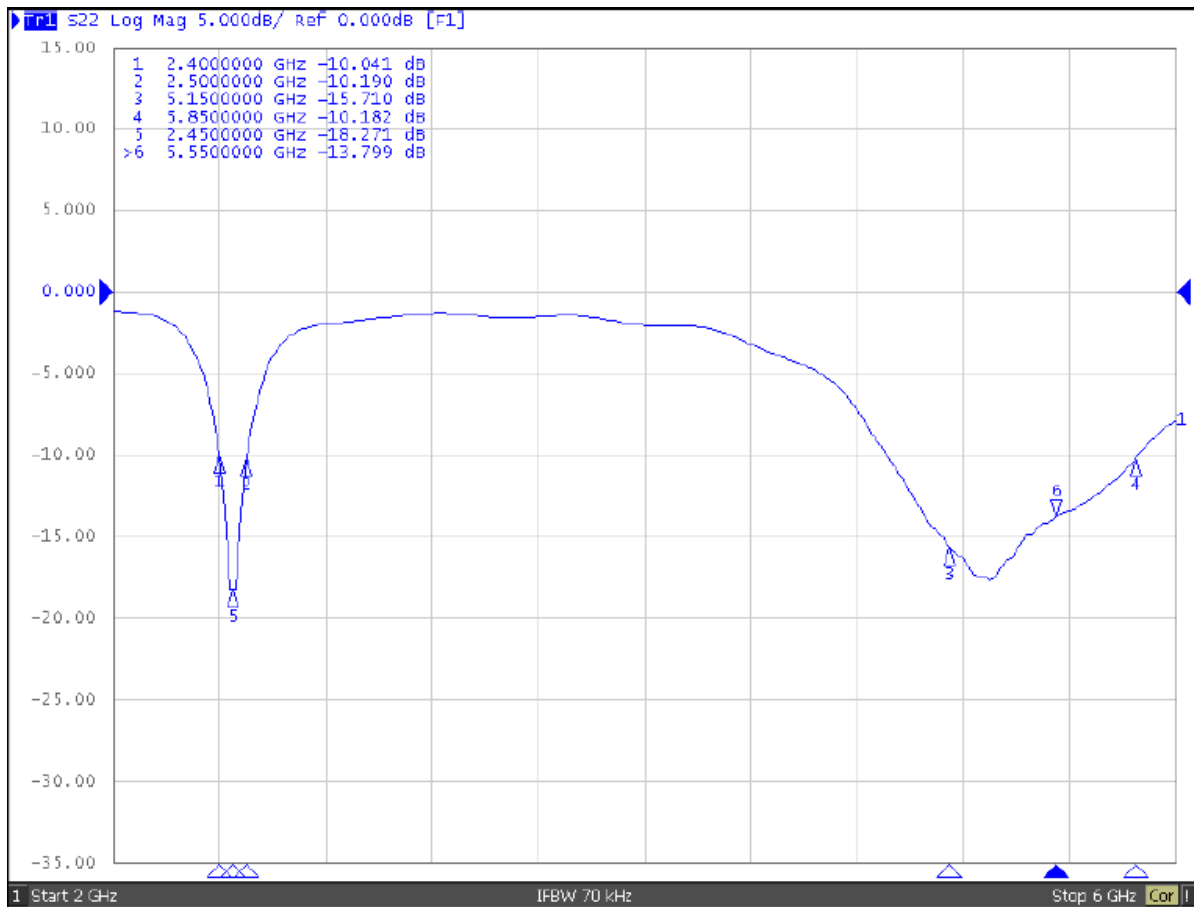


D. Matching Circuit:



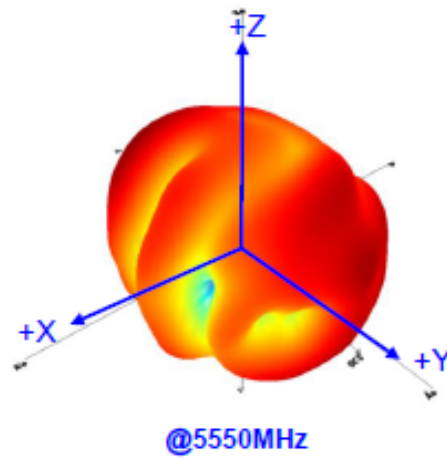
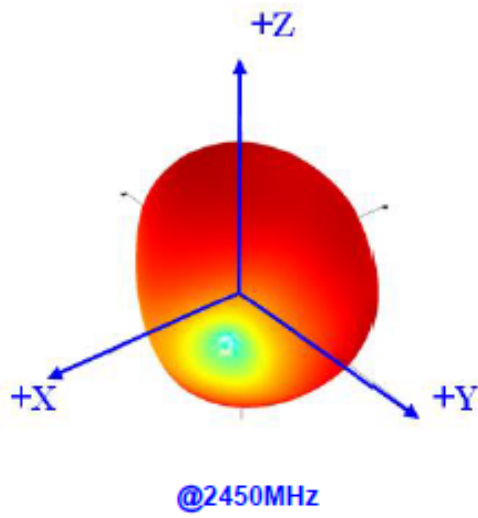
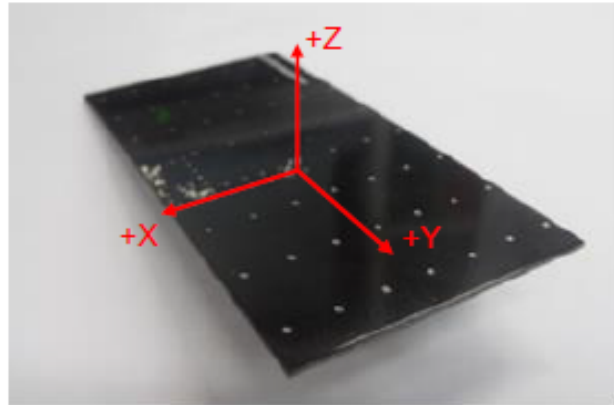
Matching Circuit Component								
NO.	1	2	3	4	5	6	7	8
Description	1.2pF	1pF	N.A	N.A	N.A	1.2nH	1nH	N.A

E. Frequency Characteristics:



Return Loss	2400MHz	2450MHz	2500MHz	5150MHz	5550MHz	5850MHz
S11	-10.04	-18.27	-10.19	-15.71	-13.79	-10.18

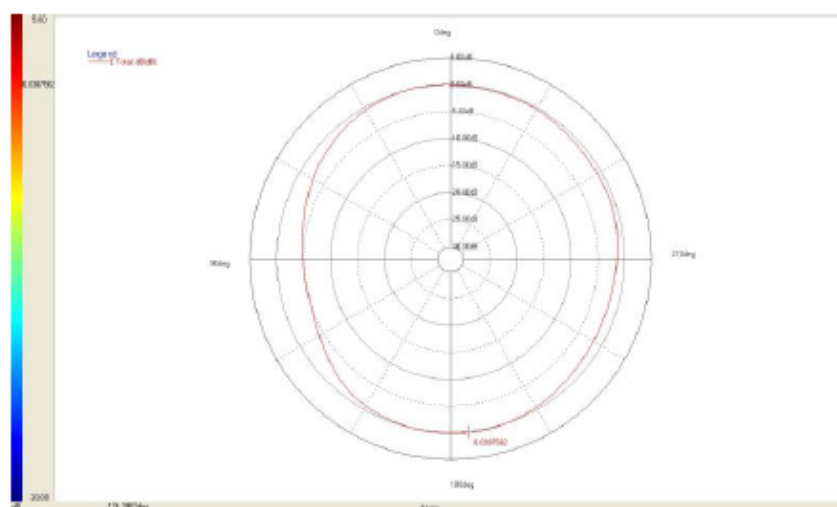
3D Pattern :



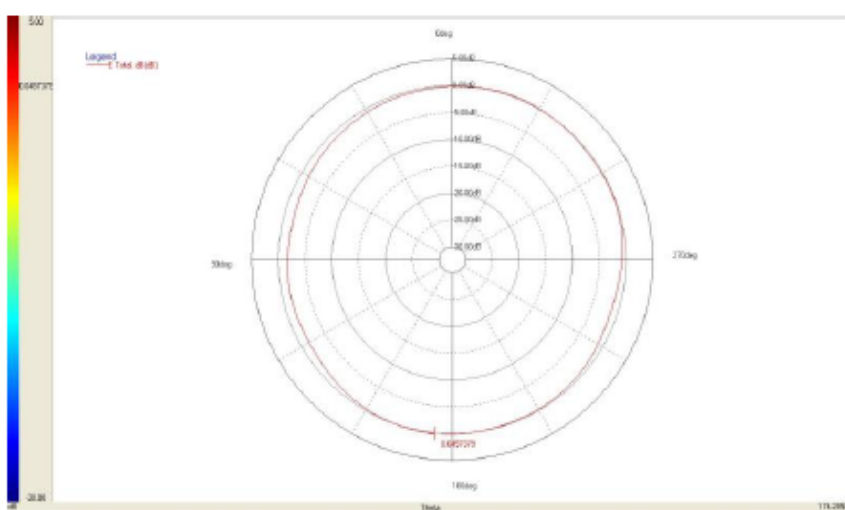
Electrical performance

2D Radiation Pattern

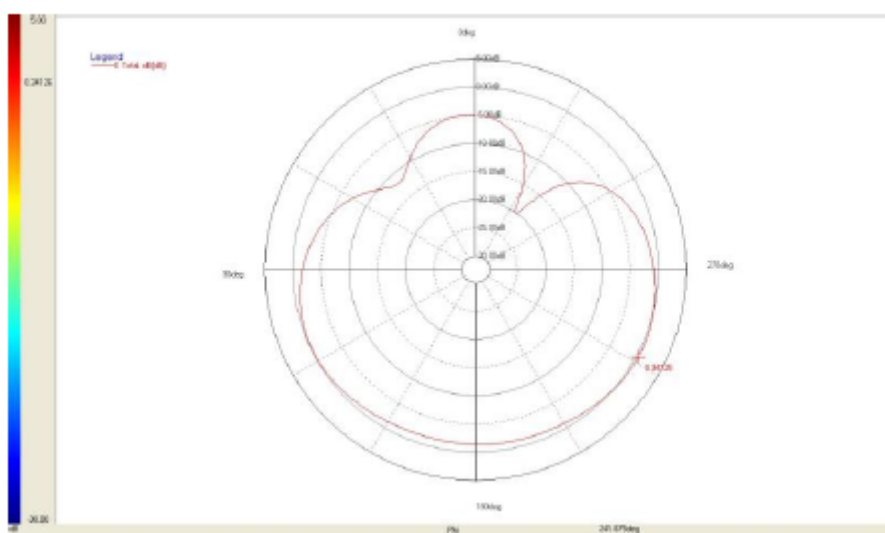
XZ-Plane 2450MHz



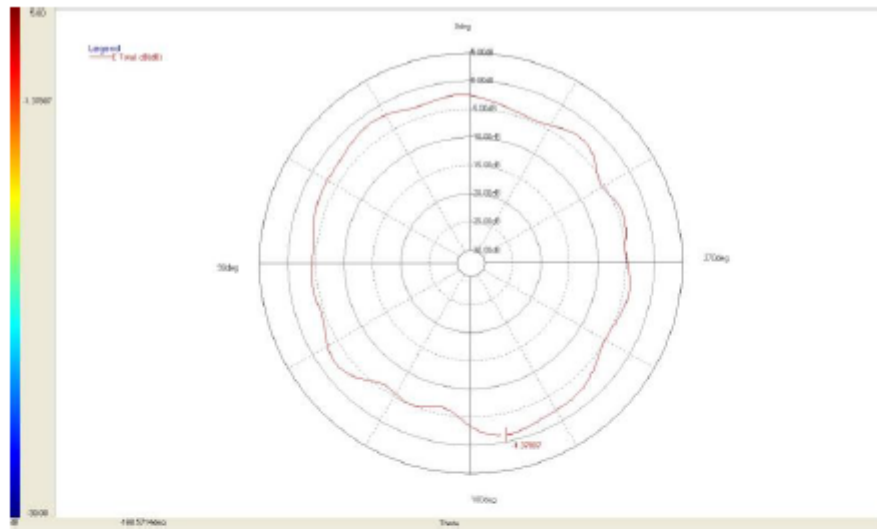
YZ-Plane 2450MHz



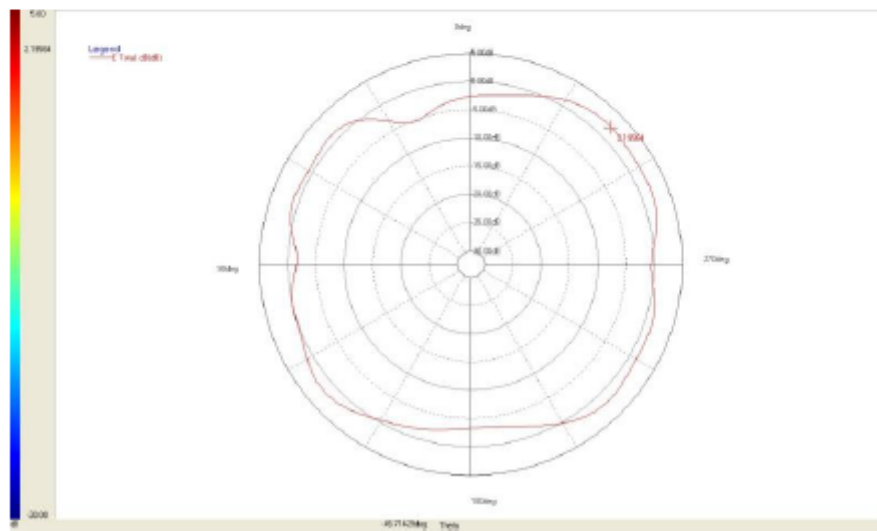
XY-Plane 2450MHz



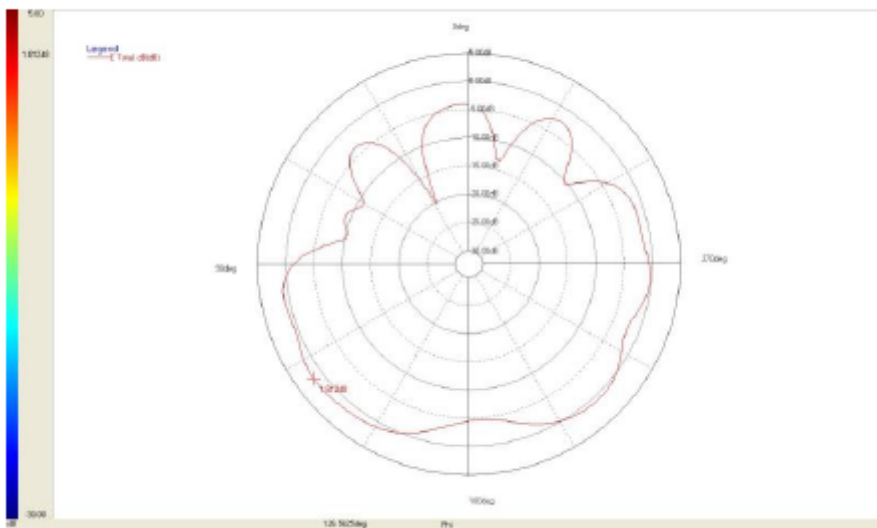
XZ-Plane 5550MHz



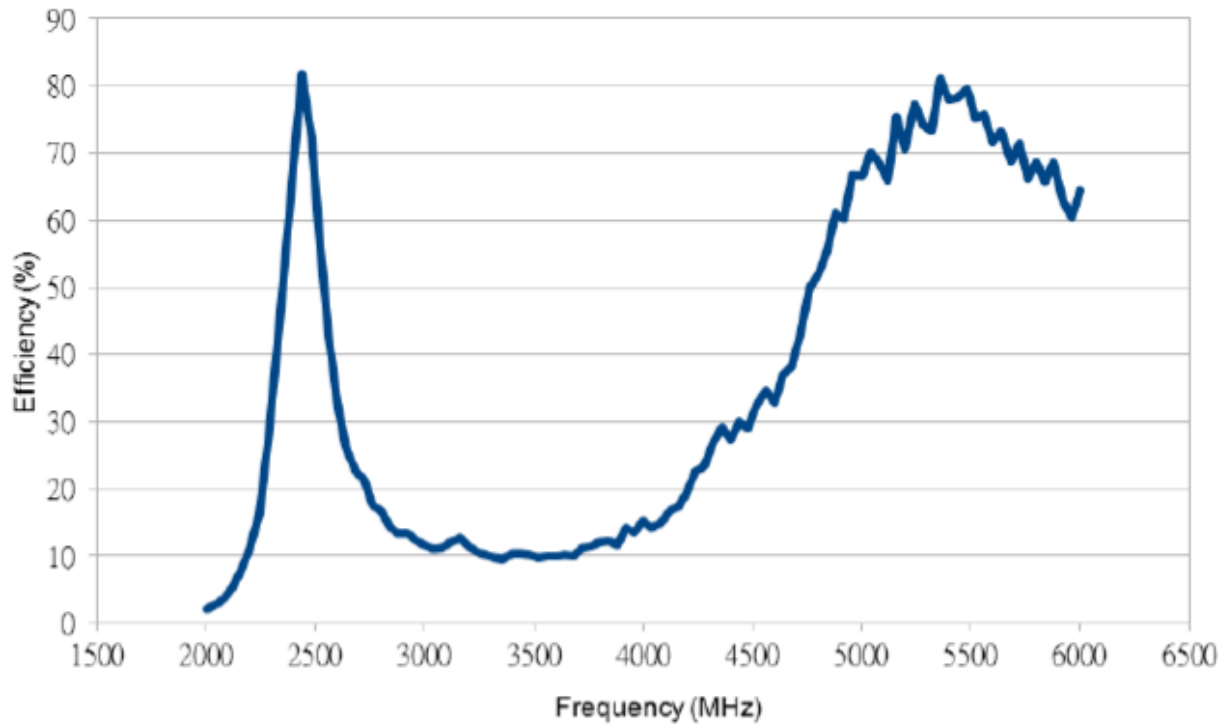
YZ-Plane 5550MHz



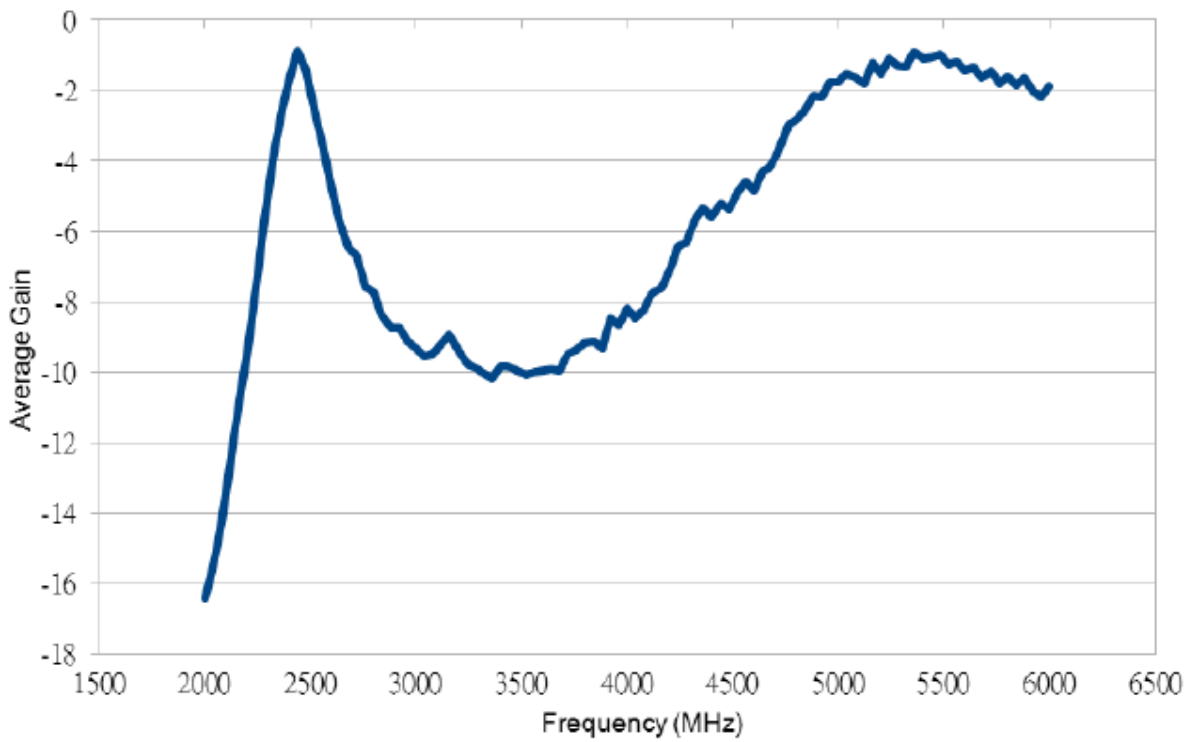
XY-Plane 5550MHz



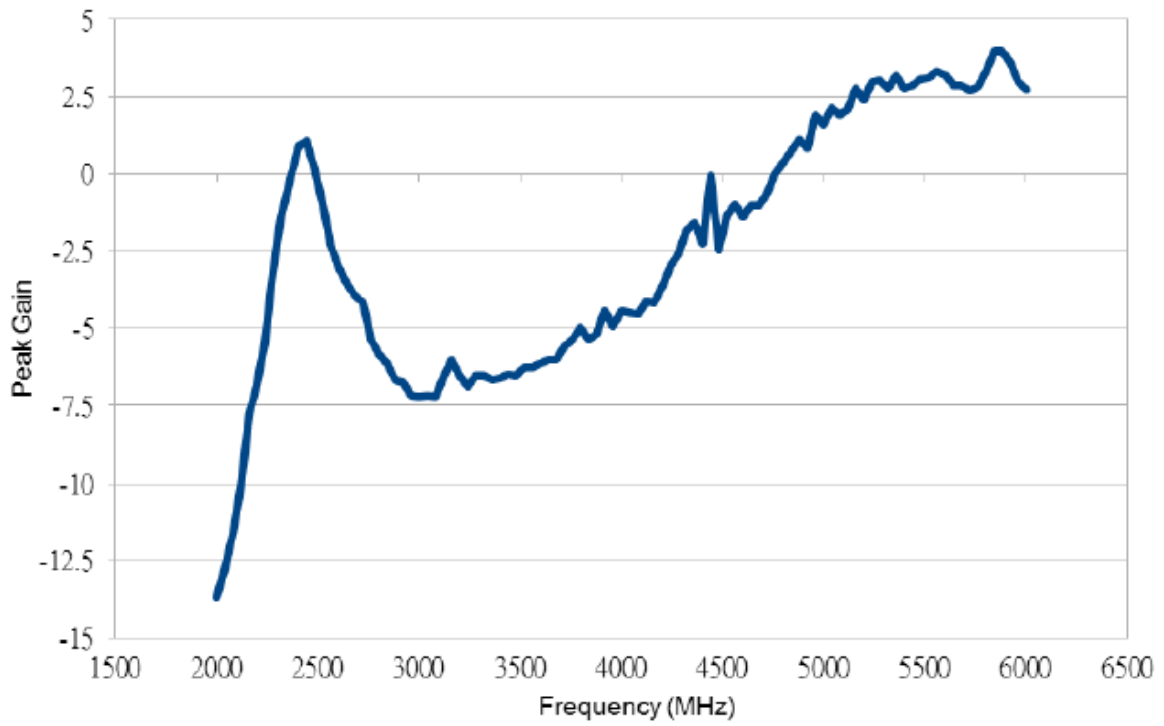
Efficiency :



Average Gain :



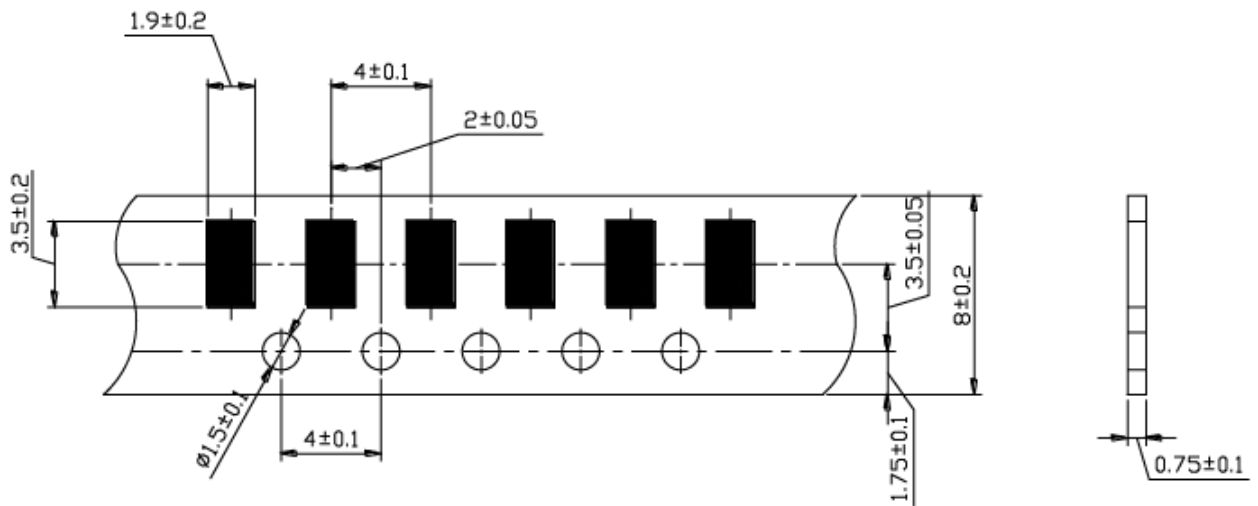
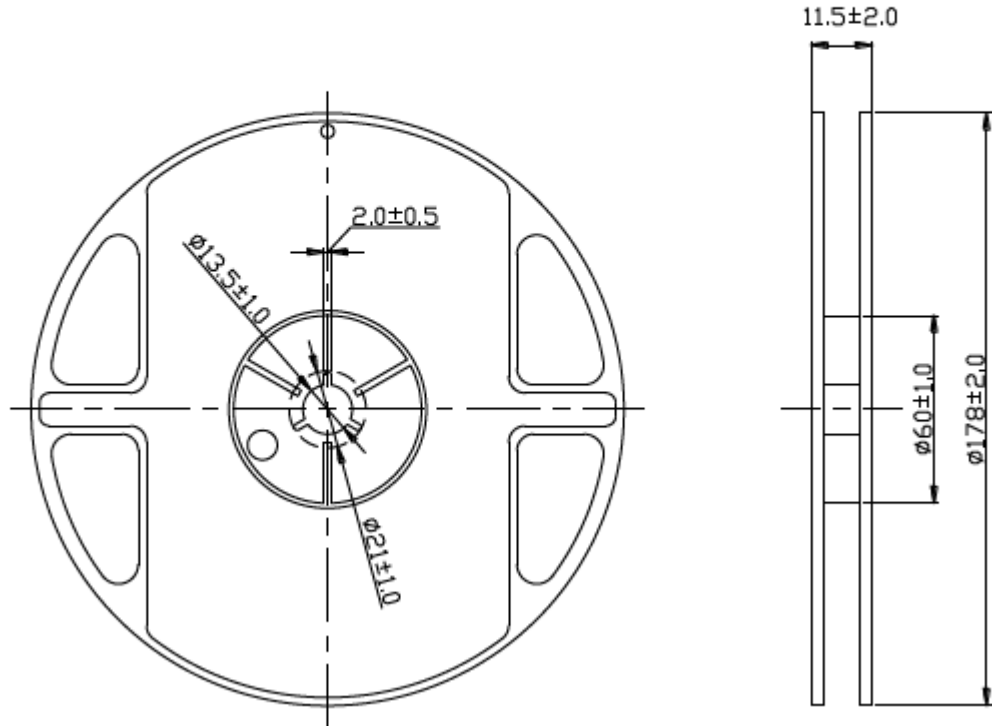
Peak Gain :



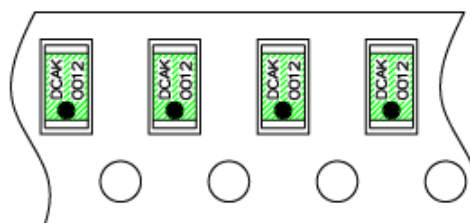
WLAN	2400MHz	2450MHz	2500MHz	5150MHz	5850MHz
Efficiency(%)	68.02	79.73	65.16	75.38	65.62
Average	-1.67	-0.98	-1.86	-1.22	-1.82
Peak	0.88	1.05	-0.19	2.56	4.01

F. Packing:

- 1. Blister tape to IEC 286-3, polyester.
- 2. Pieces/tape: 5000 pcs.
- 3. Moisture sensitivity level: Level 1



Marking direction



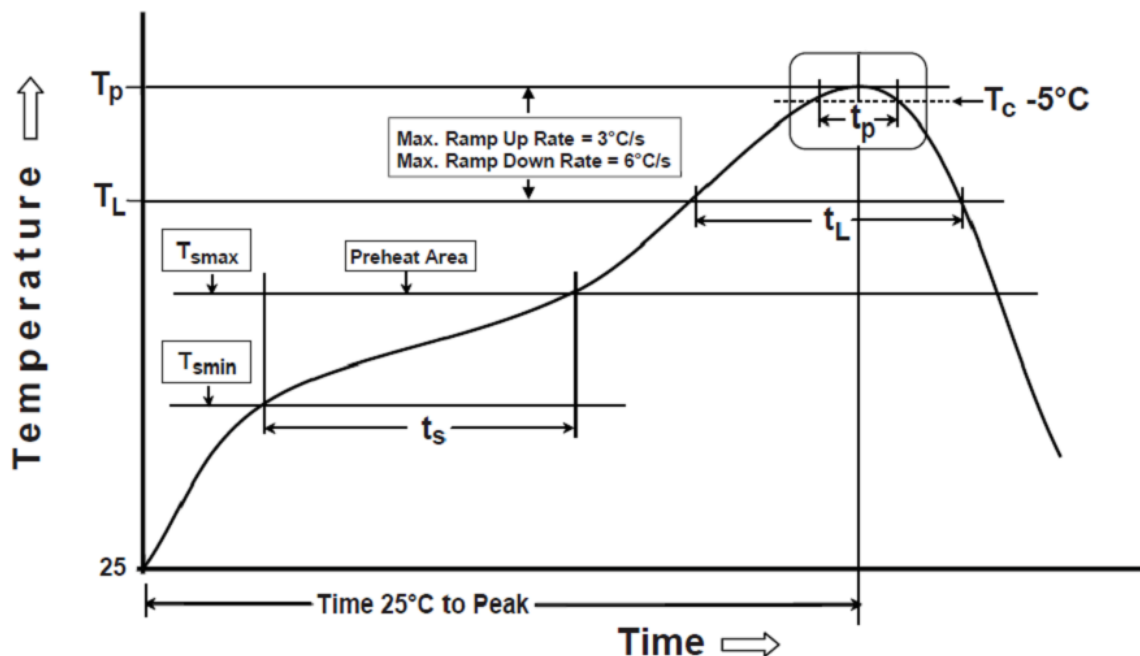
G. Recommended Solder Profile:

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

Phase	Profile features	Pb-Free Assembly (SnAgCu)
PREHEAT	-Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(t_s) form (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
RAMP-UP	Avg. Ramp-up Rate (T_{smax} to TP)	3°C/second(max)
REFLOW	-Temperature(T_L) -Total Time above T_L (t_L)	217°C 30-100 seconds
PEAK	-Temperature(T_P) -Time(t_p)	260°C 5-10 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



Soldering With Iron:

Soldering condition : Soldering iron temperature 270 ± 10 °C .

Apply preheating at 120°C for 2-3 minutes. Finish soldering for each terminal within 3 seconds, if soldering iron over temperature 270 ± 10 °C or 3 seconds, it will make component surface peeling or damage. Soldering iron can not leakage of electricity.