



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
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Product Specifications Approval Sheet

Product Description: Dielectric Chip Antenna 2442 MHz Size3.05x1.6 mm
TST Parts No.: TQ0092AA0000

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 2442MHz Size3.05x1.6 mm

MODEL NO.: TQ0092AA0000

REV. NO.:1.0

A. Maximum Rating:

1. Operating Temperature: -40°C to +105°C
2. Storage Temperature: -40°C to +85°C
3. Moisture Sensitivity Level: Level 1 (MSL 1)

RoHS Compliant
Lead free
Lead-free soldering

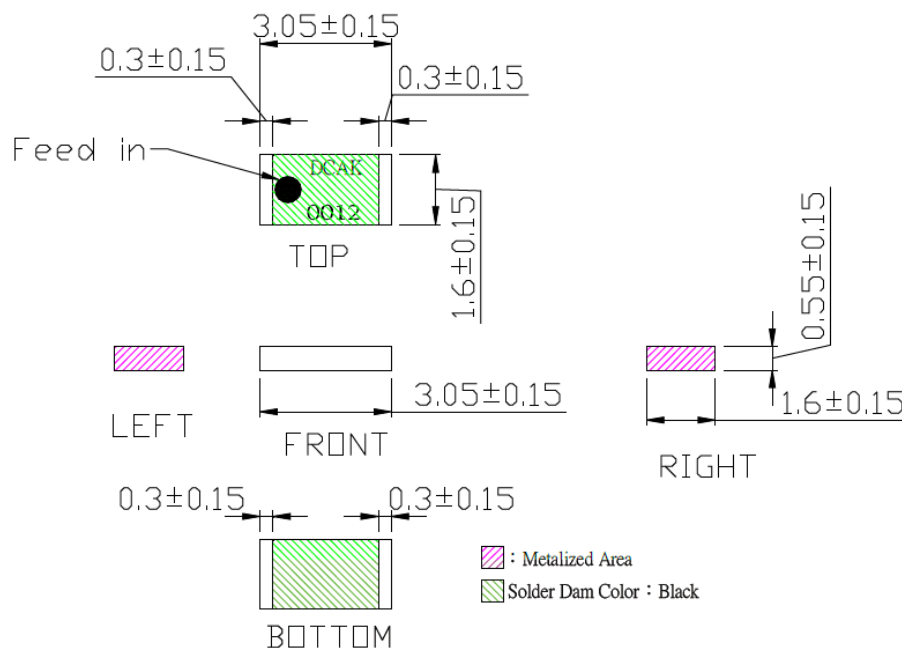
Electrostatic Sensitive Device (ESD)

B. Electrical Characteristics:

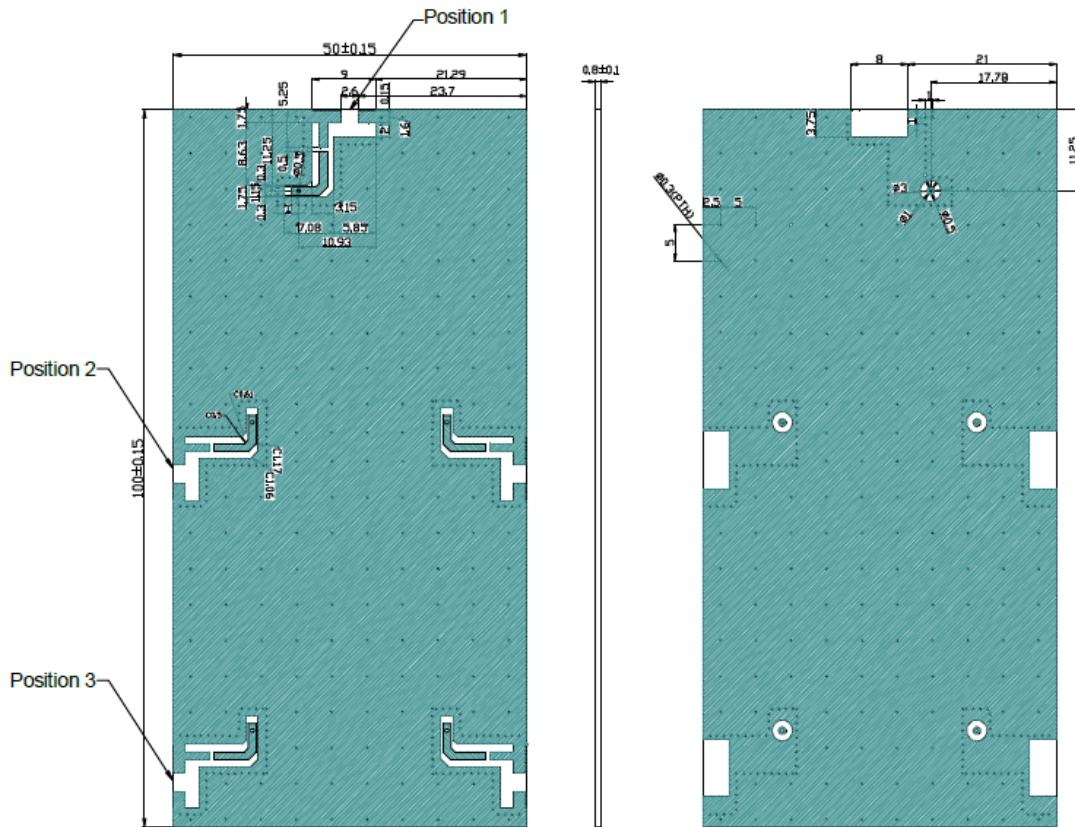
Item	Spec
Working Frequency	2442 MHz
Return Loss	< -10dB
VSWR	2.0 max
Peak gain	1.0dBi (typ)
Polarization	Linear
Azimuth	Omini-directional

C. Dimension:

Antenna Dimension

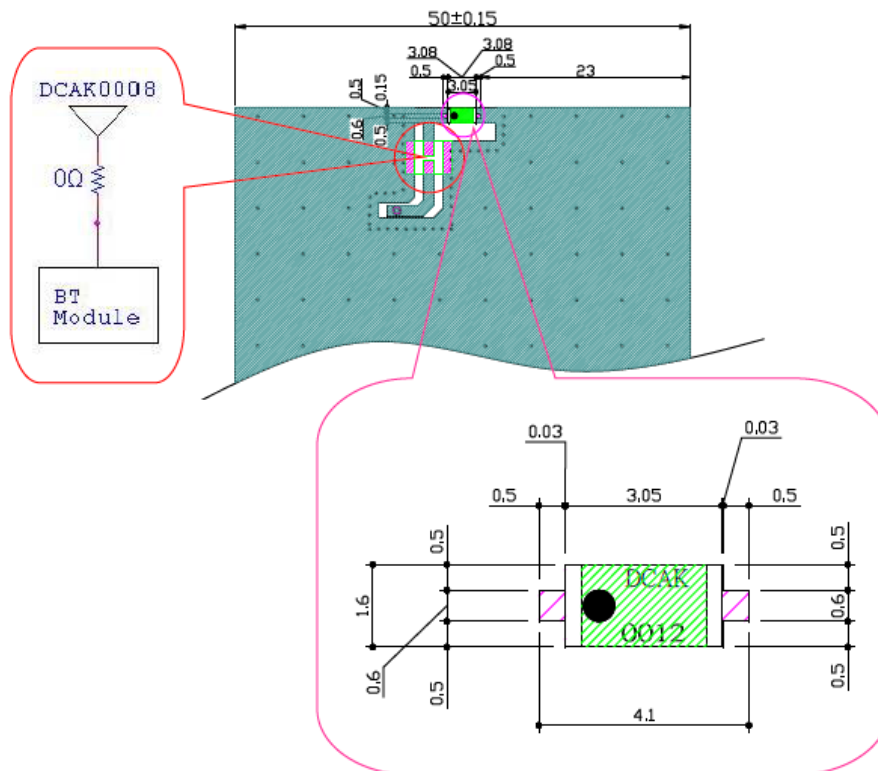


Demo Board Dimension

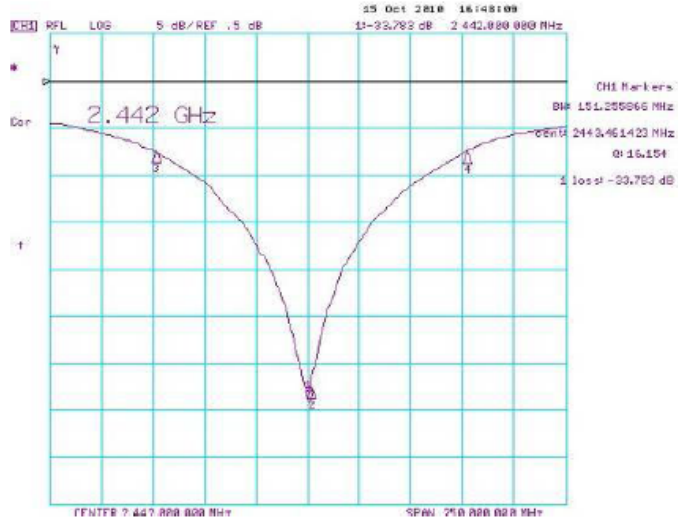


D. Matching Circuit:

Position 1 Matching Circuit

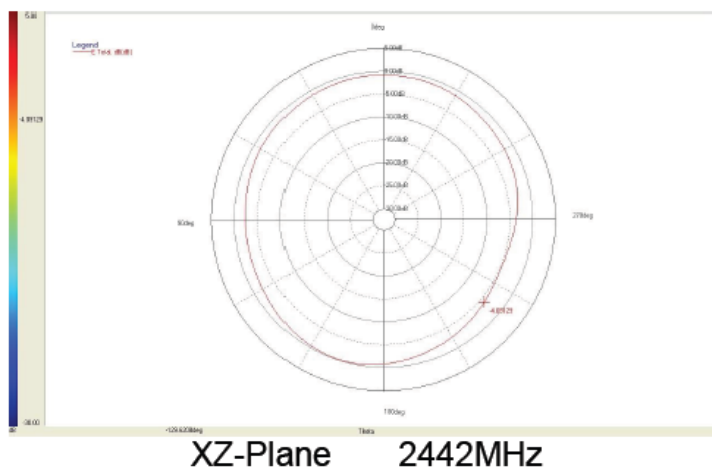
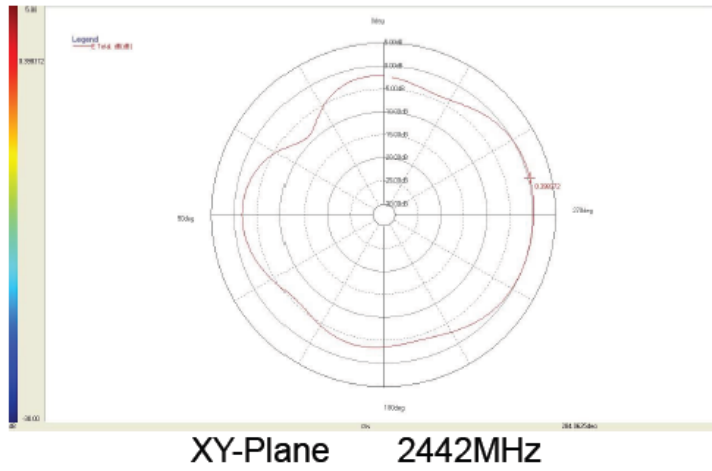


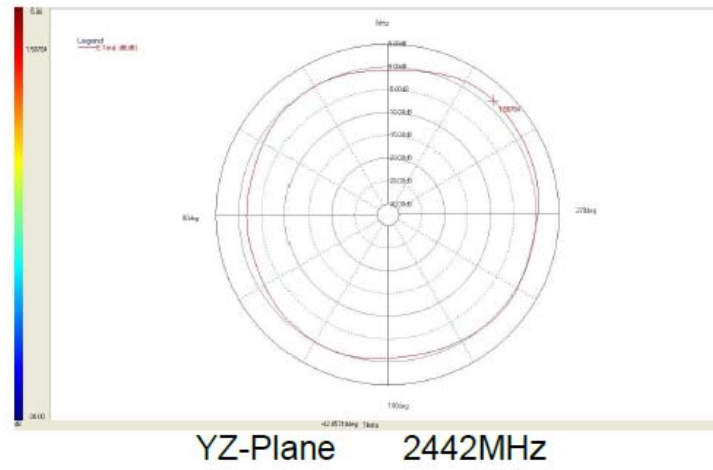
S11 Response curve (Work Frequency)



Item	Frequency	Return Loss	Bandwidth
Value	2442 MHz	-33.78dB	151.25 MHz

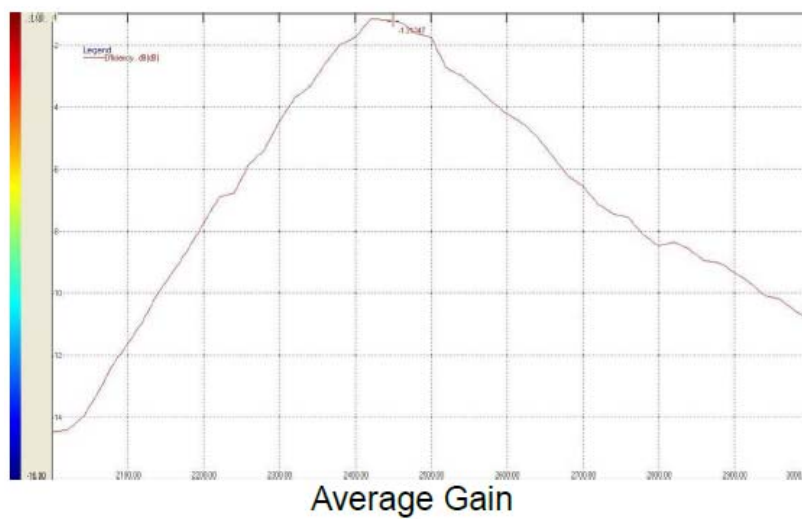
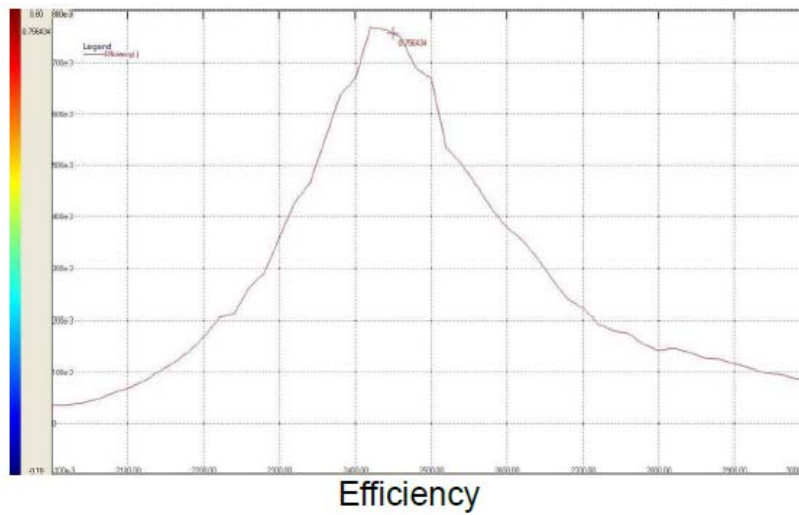
Electrical performance

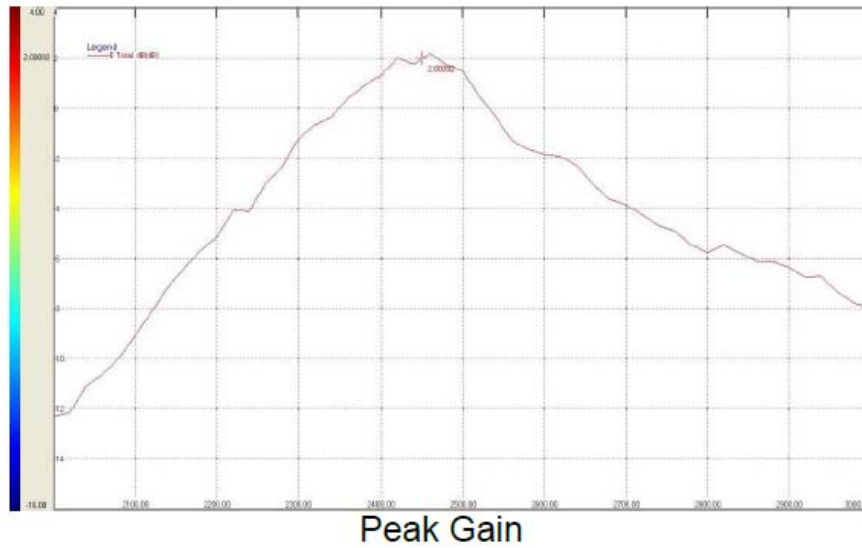




2442MHz	Peak Gain
XY-Plane	0.39
XZ-Plane	-4.09
YZ-Plane	1.50

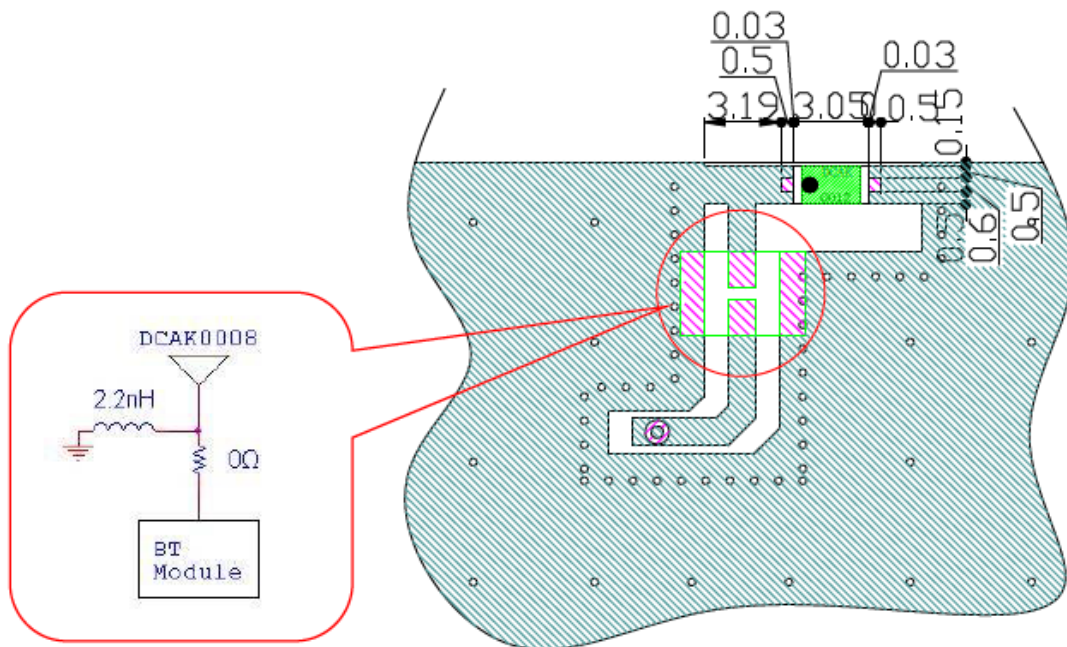
(Unit : dBi)



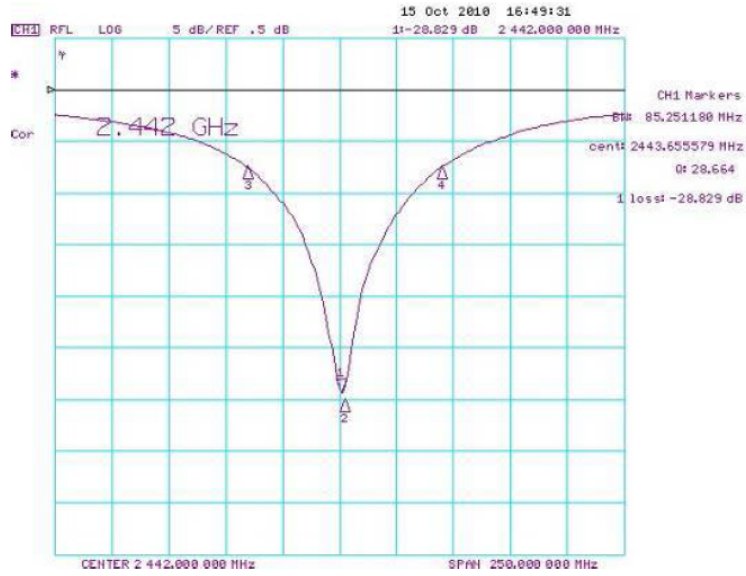


Item	Efficiency	Average	Peak Gain
Value	75.64%	-1.21dBi	2.00dBi

Position 2 Matching Circuit

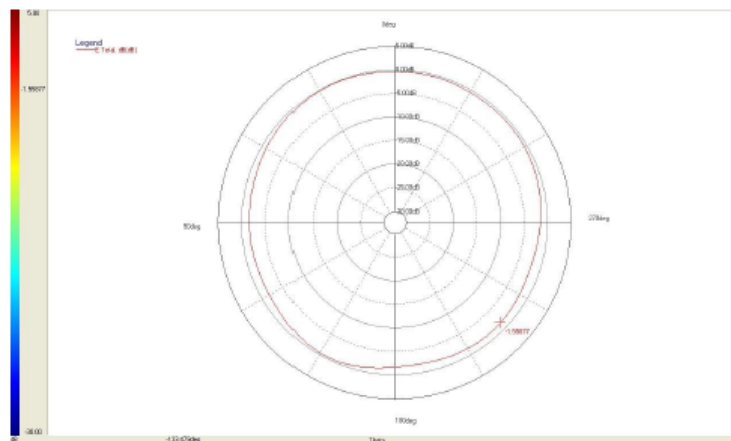
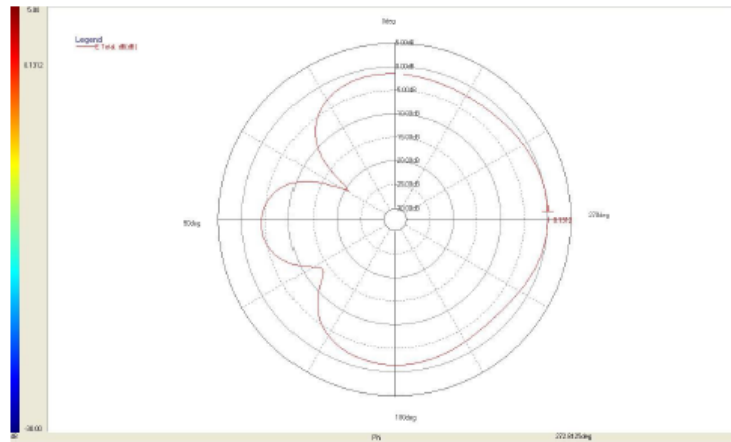


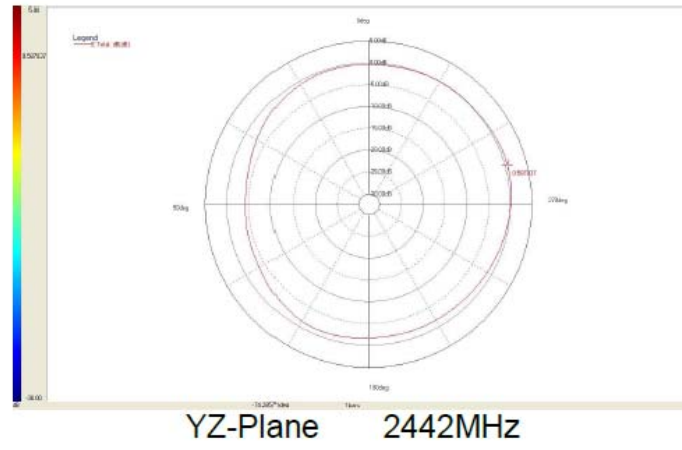
S11 Response curve (Work Frequency)



Item	Frequency	Return Loss	Bandwidth
Value	2442 MHz	-28.82 dB	85.25 MHz

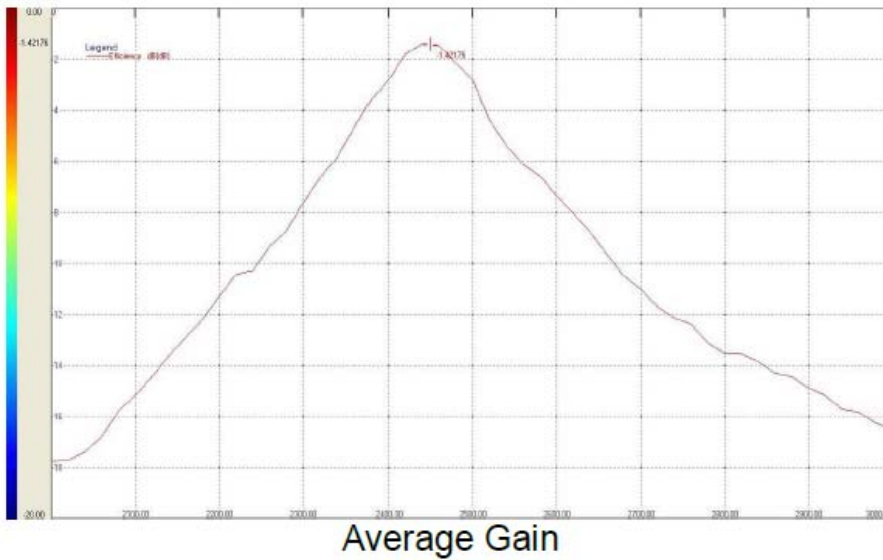
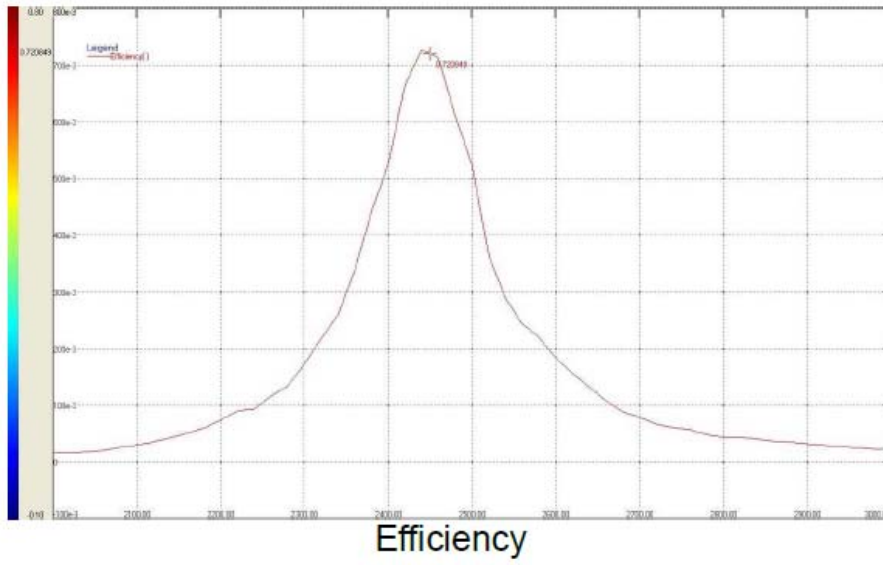
Electrical performance

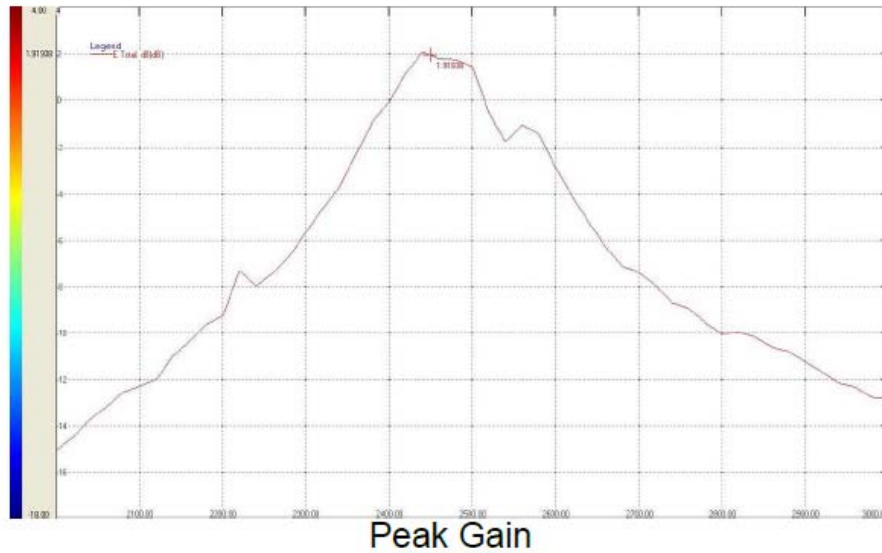




2442MHz	Peak Gain
XY-Plane	0.13
XZ-Plane	-1.55
YZ-Plane	0.58

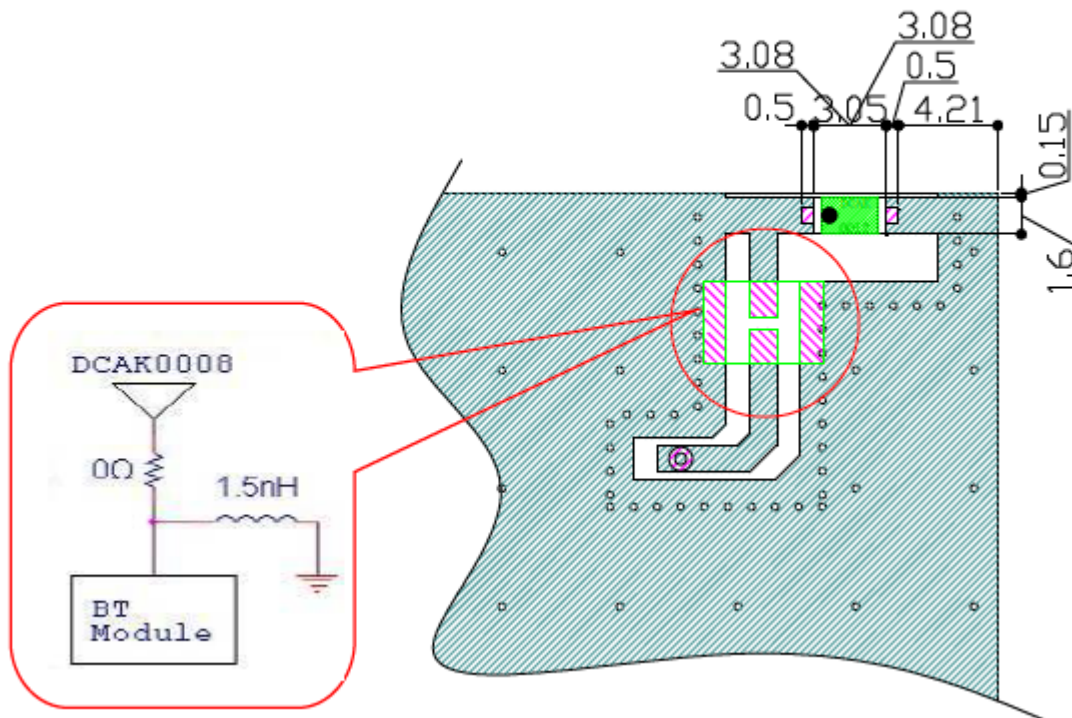
(Unit : dBi)



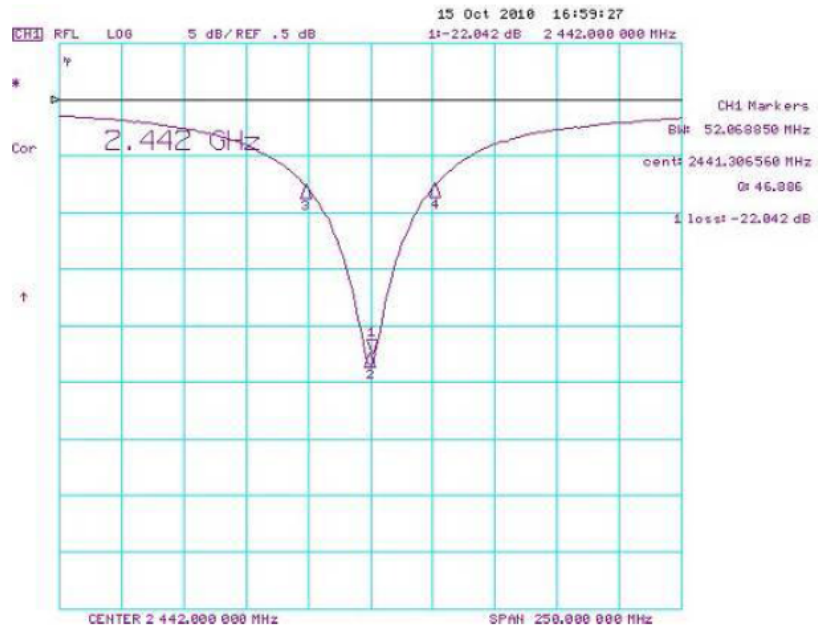


Item	Efficiency	Average	Peak Gain
Value	72.08%	-1.42dBi	1.91dBi

Position 3 Matching Circuit

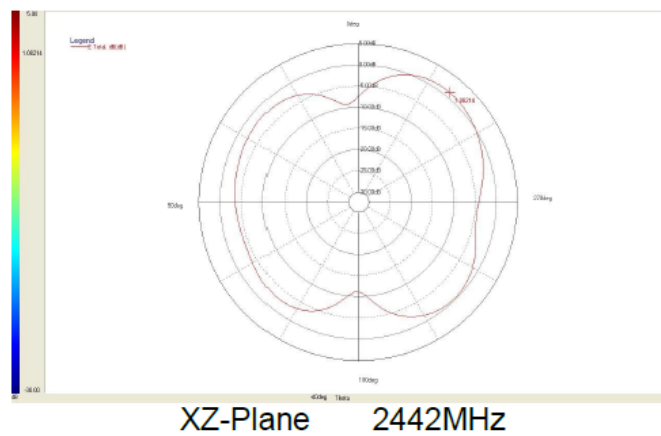
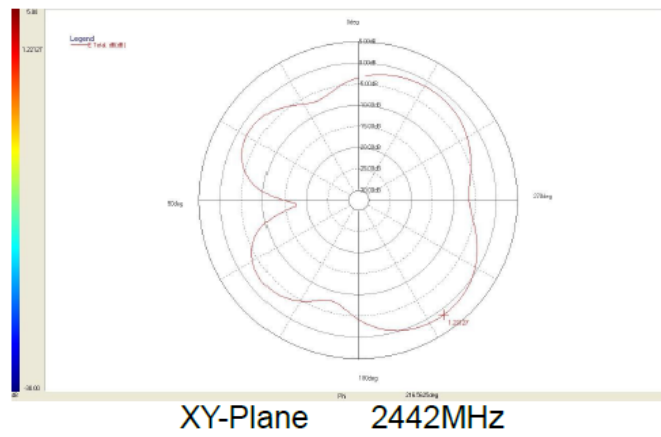


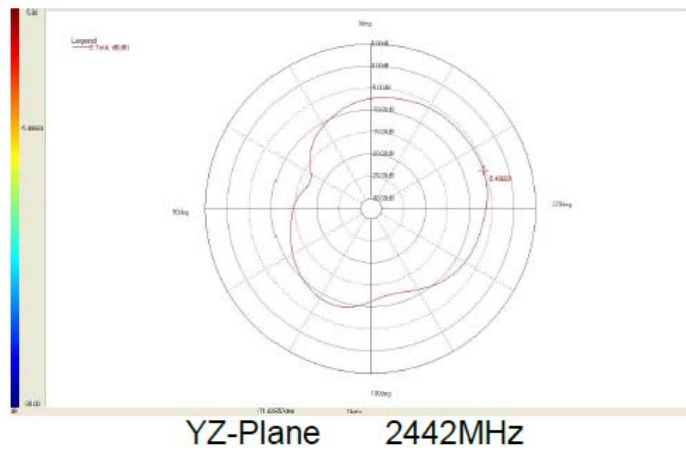
S11 Response curve (Work Frequency)



Item	Frequency	Return Loss	Bandwidth
Value	2442 MHz	-22.04 dB	52.06 MHz

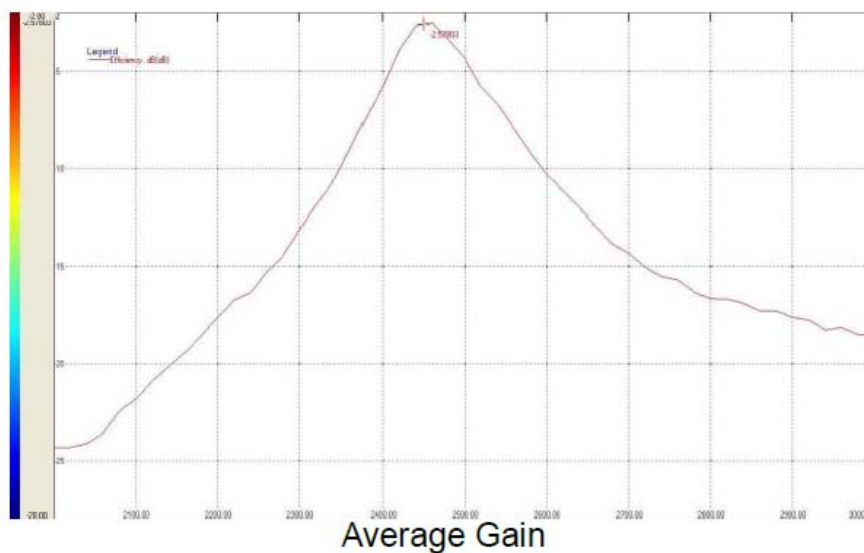
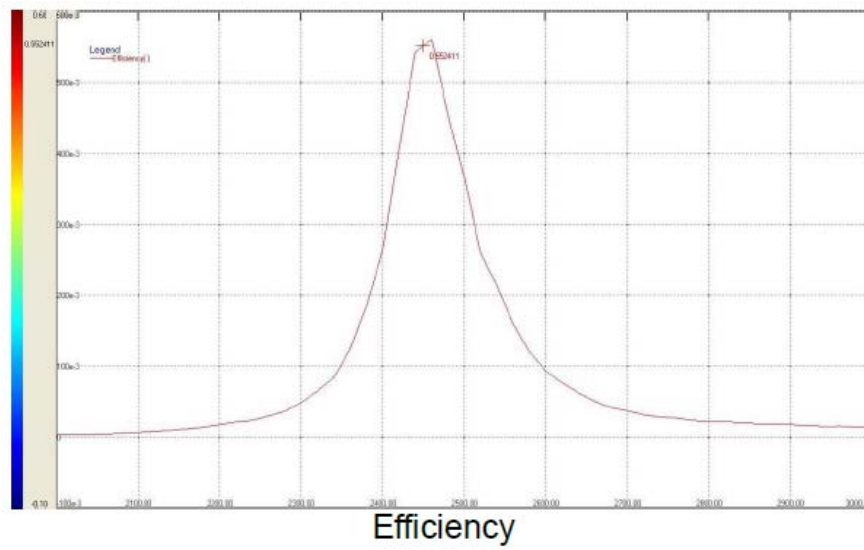
Electrical performance

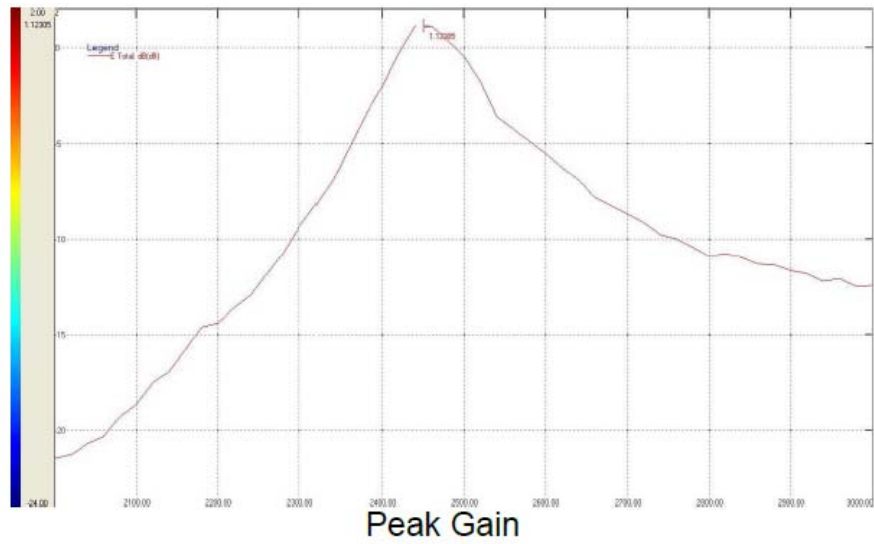




2450MHz	Peak Gain
XY-Plane	1.22
XZ-Plane	1.08
YZ-Plane	-5.48

(Unit : dBi)

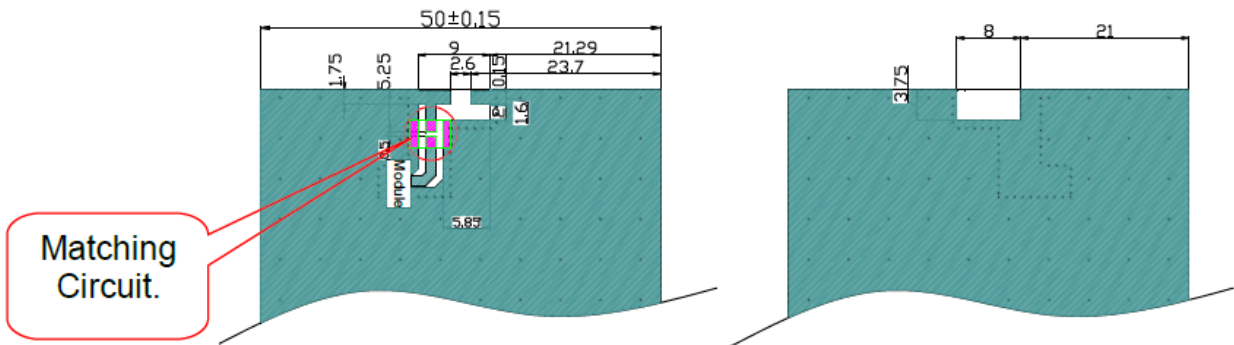




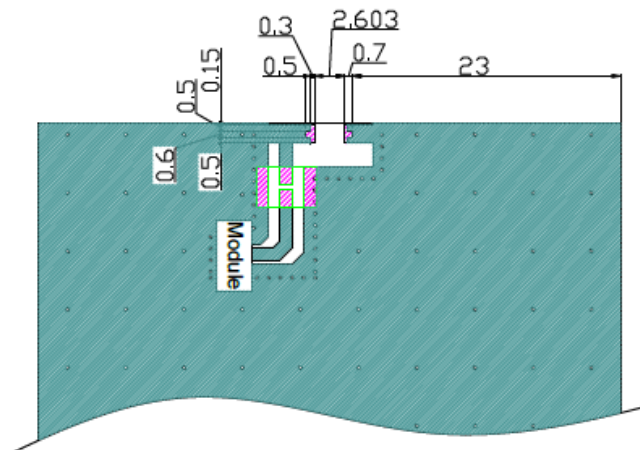
Item	Efficiency	Average	Peak Gain
Value	55.24%	-2.57dBi	1.12dBi

Customer's Requirement Layout Dimension

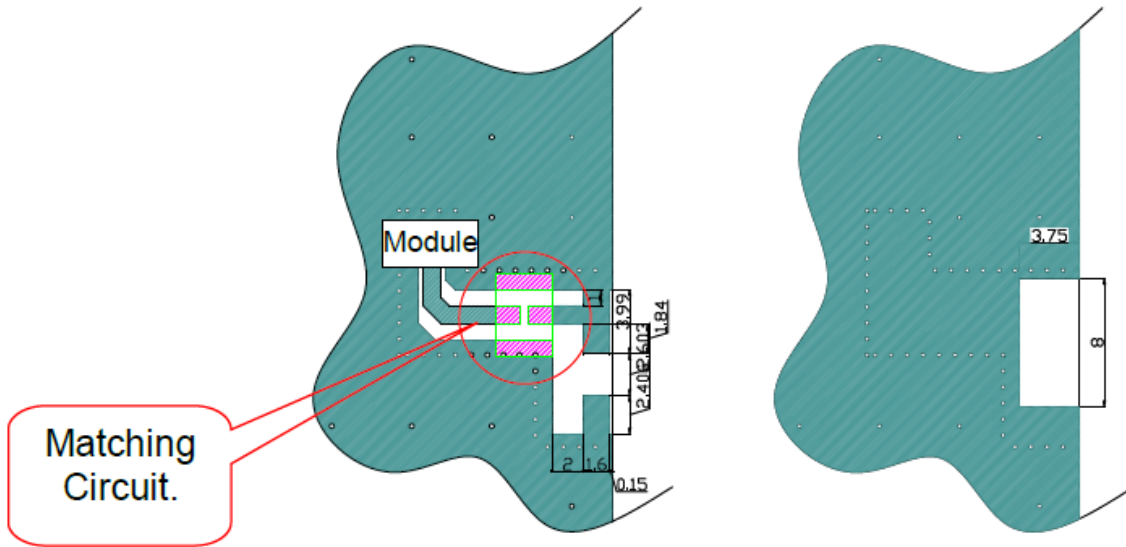
Layout 1 Dimension



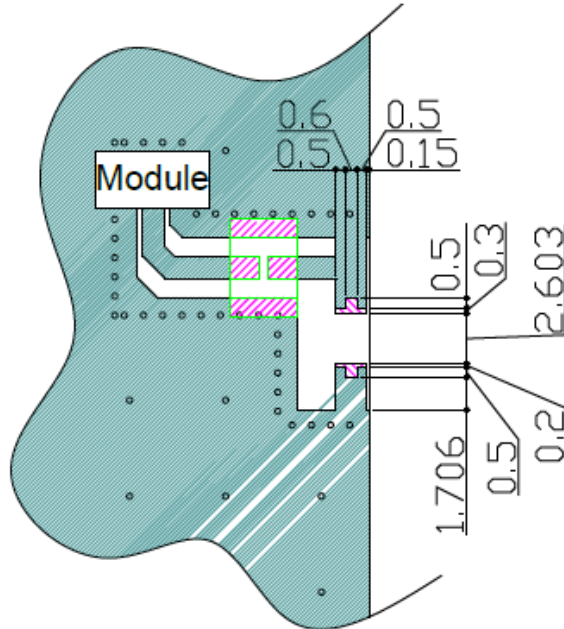
Single and Pad Layout Dimension



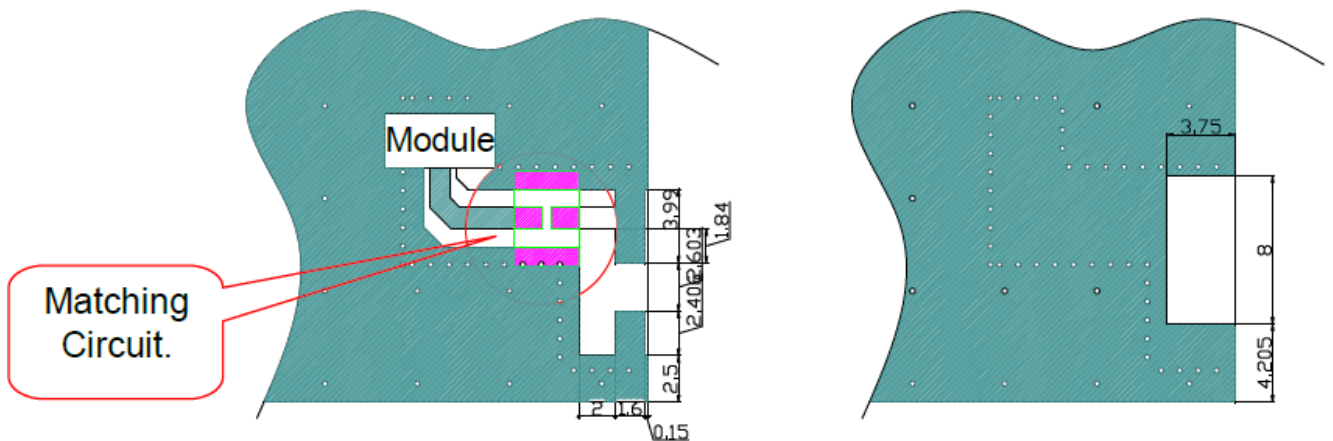
Layout 2 Dimension



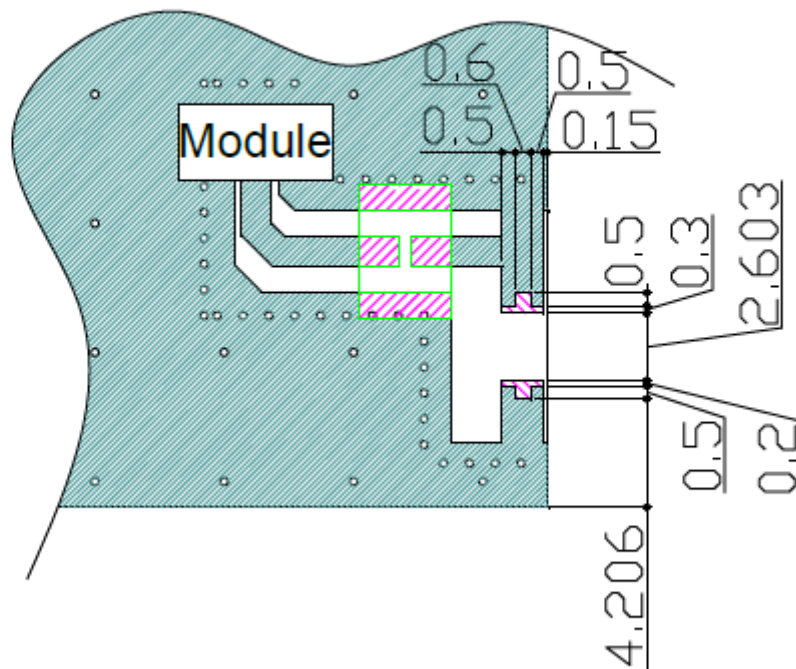
Single and Pad Layout Dimension



Layout 3 Dimension

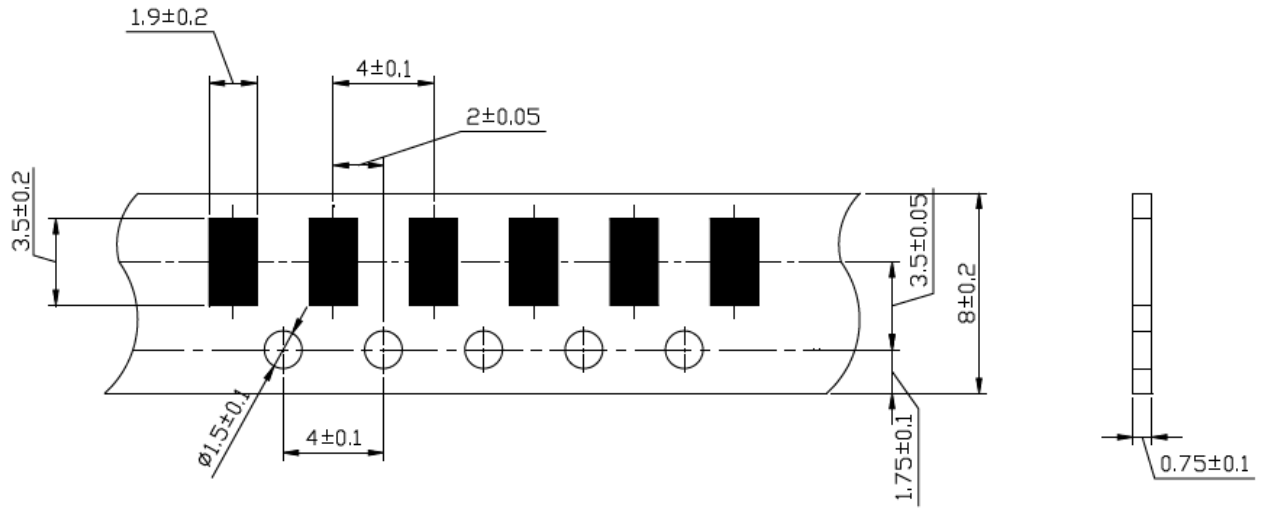
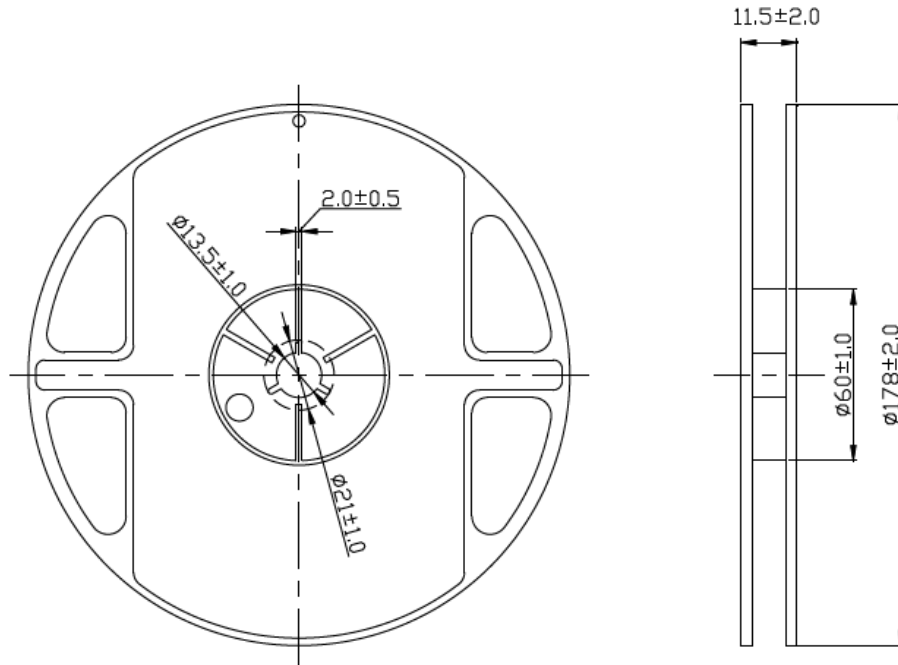


Single and Pad Layout Dimension

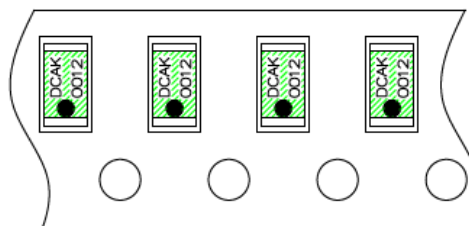


F. Packing:

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



Marking direction



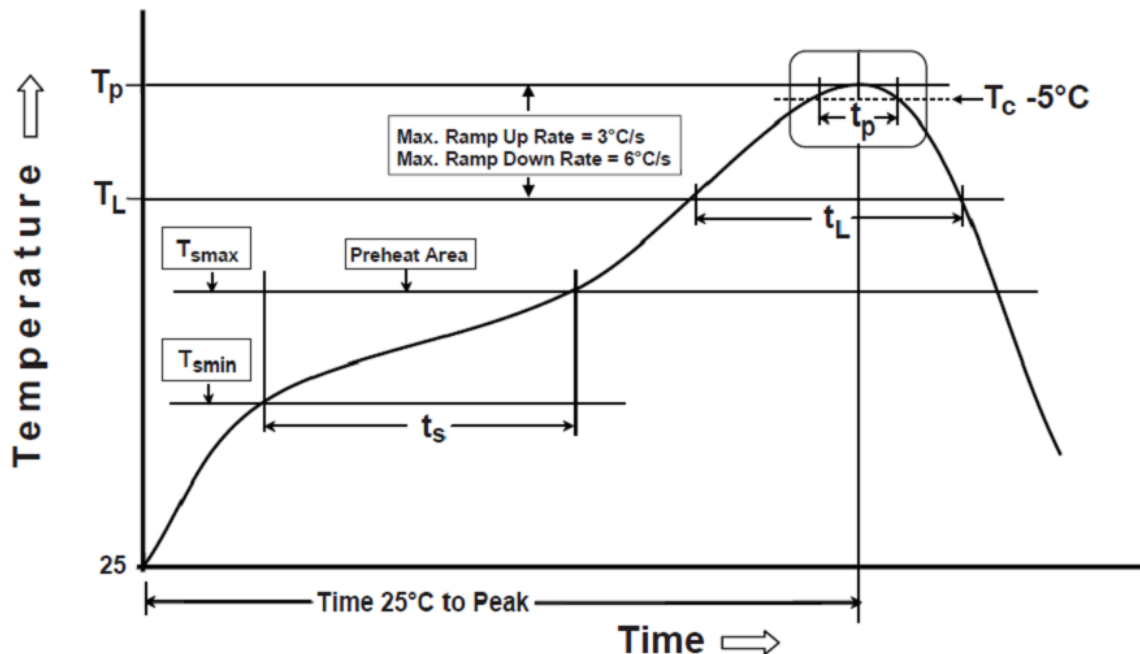
G. Recommended Solder Profile:

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.