



TAI-SAW TECHNOLOGY CO., LTD.

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Product Specifications Approval Sheet

Product Description: Print Chip Antenna 2450MHz Size 5.0x2.0mm

TST Parts No.: TQ0204AA0000

Customer Parts No.: _____

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

Checked by: _____ Nina Chen *Nina Chen*

Approved by: _____ Kazuma Lee *Kazuma Lee*

Date: _____ 2023/07/07

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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Print Chip Antenna 2450MHz Size 5.0x2.0mm

MODEL NO.: TQ0204AA0000

REV. NO.:1.0

A. Maximum Rating:

1. Operating Temperature Range: -40°C to +105°C
2. Storage Temperature Range: 0°C to +40°C
3. Moisture Sensitivity Level: Level 1 (**MSL 1**)

RoHS Compliant
Lead free
Lead-free soldering

Electrostatic Sensitive Device (ESD)

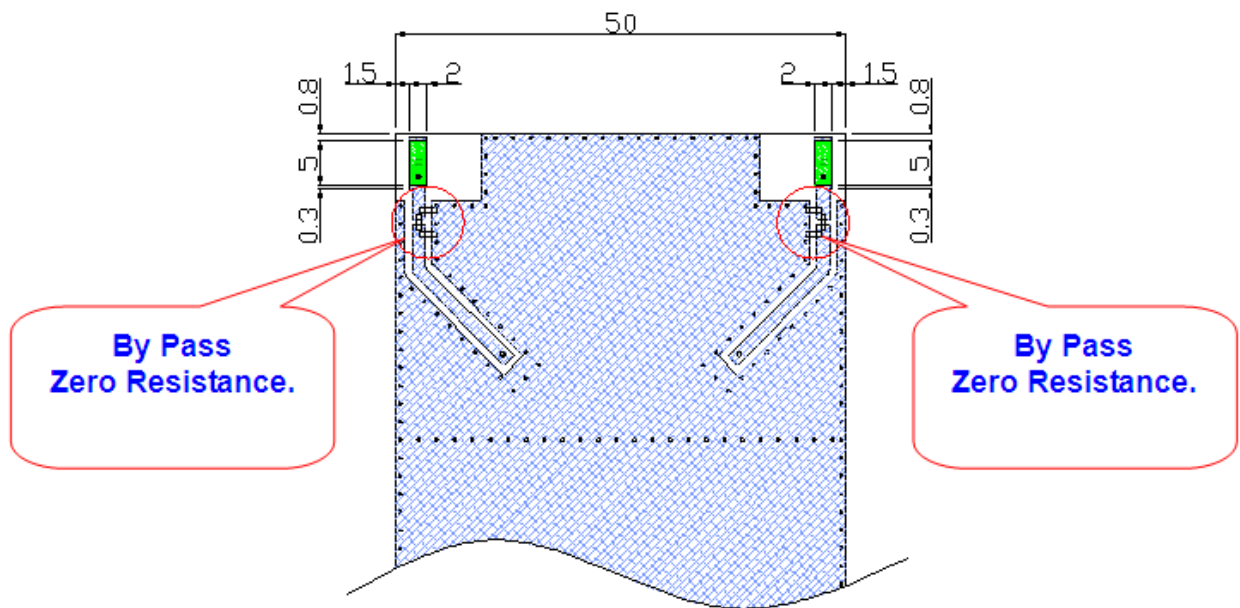
B. Electrical Characteristics:

Parameter	Specification
Working Frequency	2400-2500 MHz
Return Loss	< -10dB
VSWR	2.0max
Peak Gain	1.0 dBi (typ)
Polarization	Linear
Azimuth	Omni-directional
Impedance	50 Ω

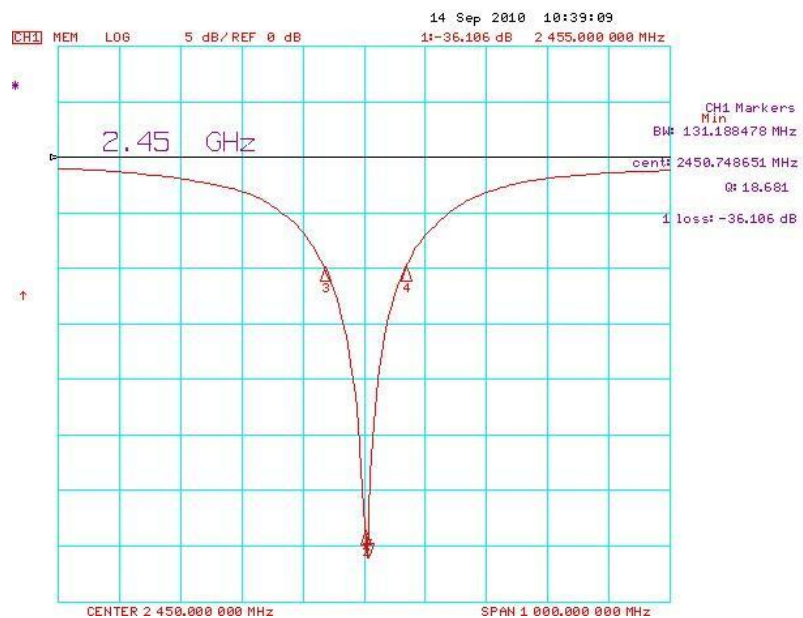
D. Frequency Characteristics:

Layout 1 Measurement

Matching Circuit

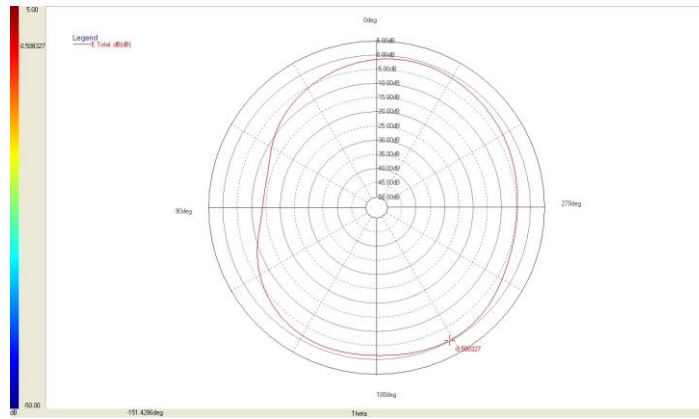


S11 Response curve (Work Frequency)

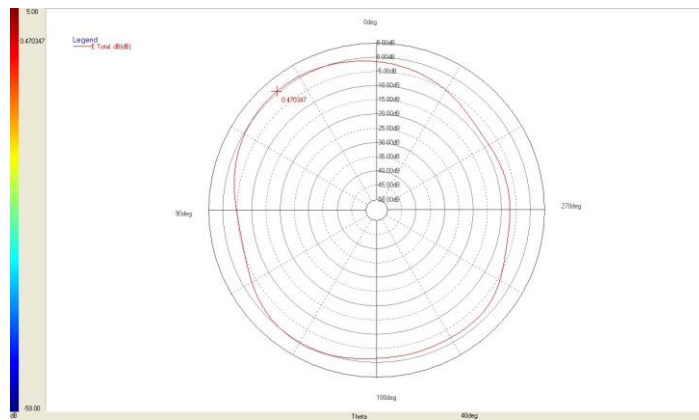


Item	Frequency	Return Loss	Bandwidth
Value	2450 MHz	-25.40dB	124.9 MHz

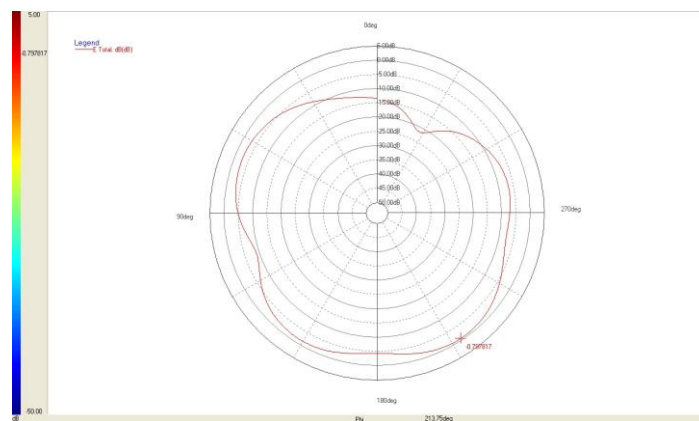
Electrical performance



XZ-Plane 2450MHz



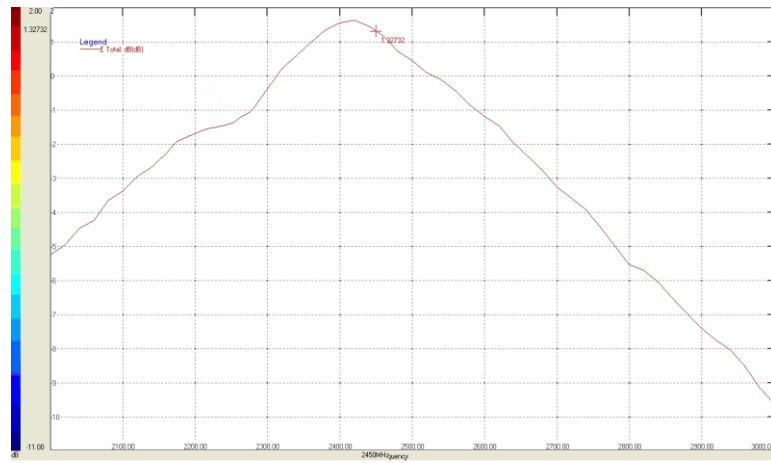
YZ-Plane 2450MHz



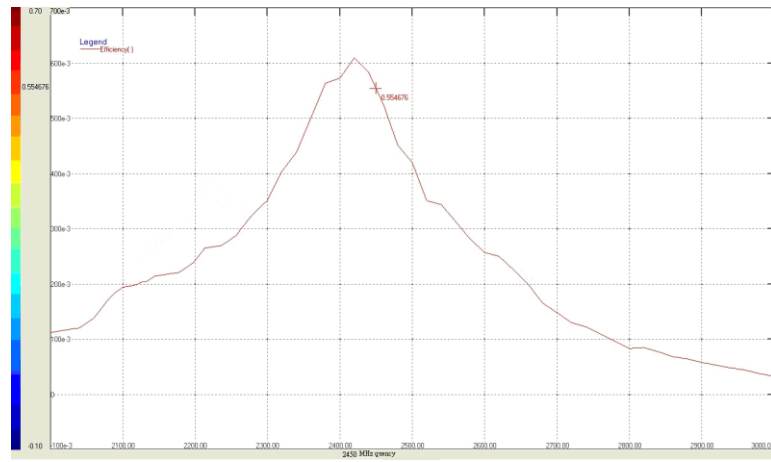
XY-Plane 2450MHz

2450MHz	Peak Gain
XZ-Plane	-0.50
YZ-Plane	0.47
XY-Plane	-0.79

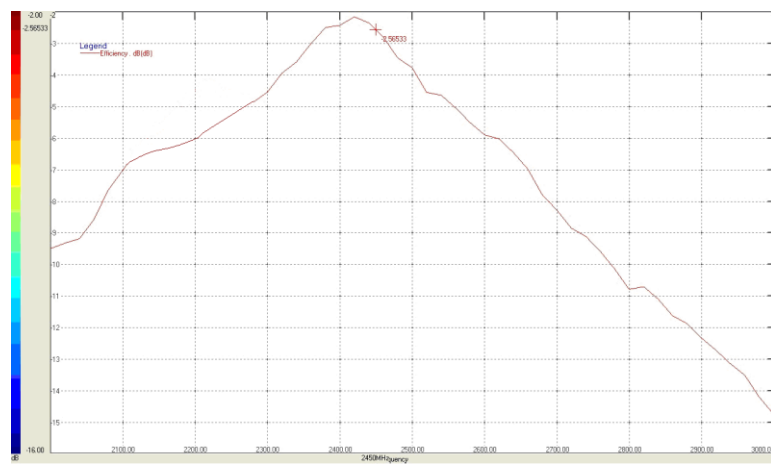
(Unit : dBi)



Peak Gain



Efficiency



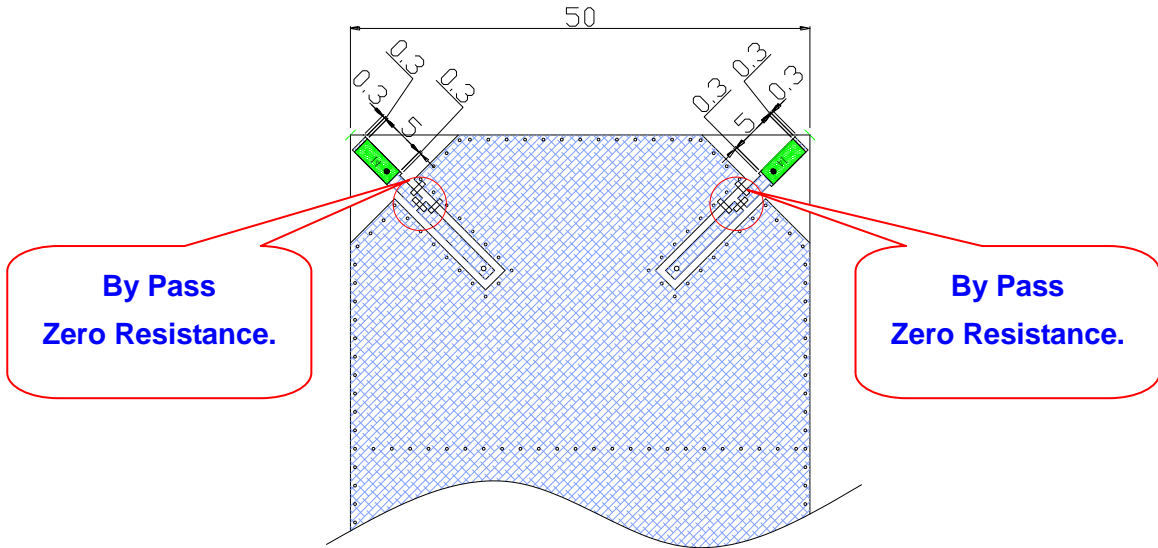
Average Gain

Item	Peak Gain	Efficiency	Average
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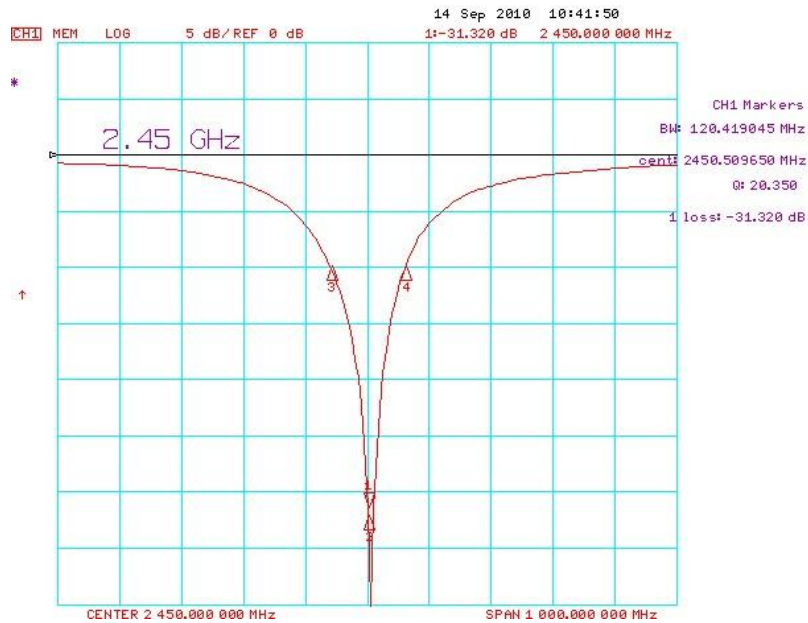
Value	1.32 dBi	55%	-2.56 dBi
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Layout 2 Measurement

Matching Circuit



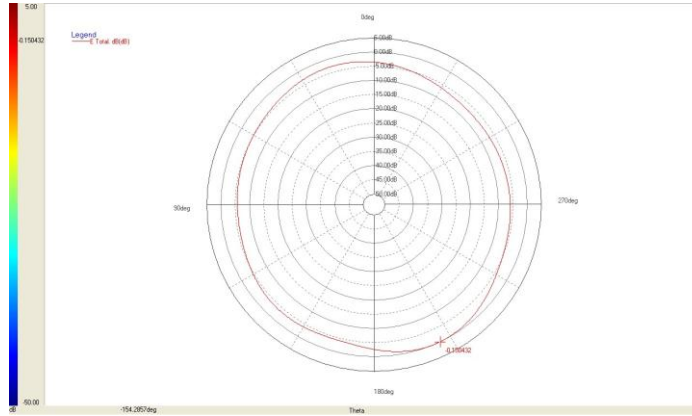
S11 Response curve (Work Frequency)



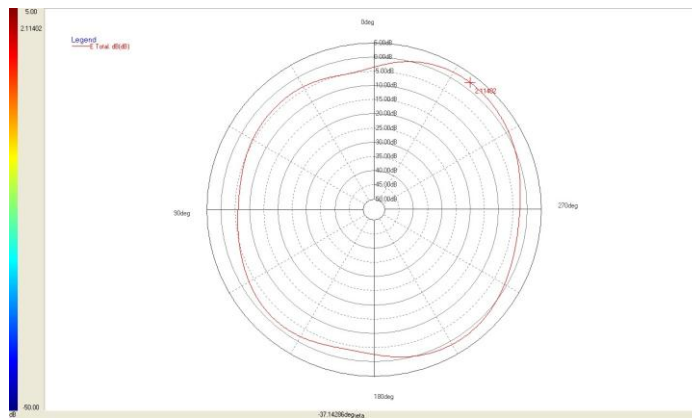
Item	Frequency	Return Loss	Bandwidth
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Value	2450 MHz	-25.74dB	125.63 MHz
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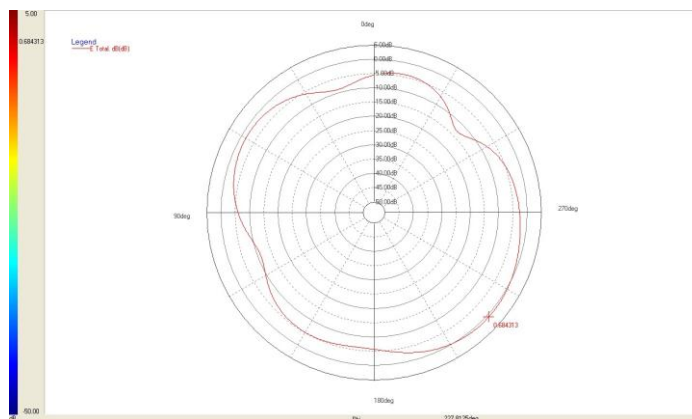
Electrical performance



XZ-Plane 2450MHz



YZ-Plane 2450MHz



XY-Plane 2450MHz

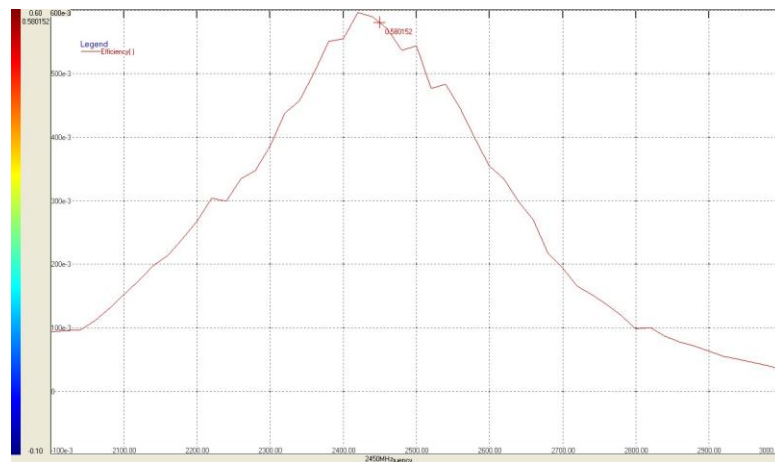
2450MHz	Peak Gain
XZ-Plane	-0.15

YZ-Plane	2.11
XY-Plane	0.68

(Unit : dBi)



Peak Gain



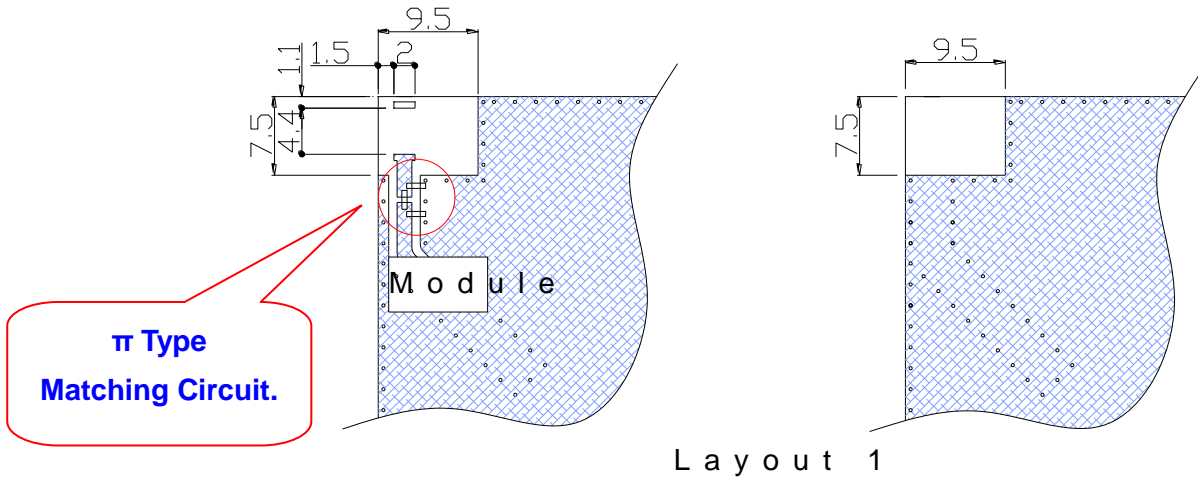
Efficiency



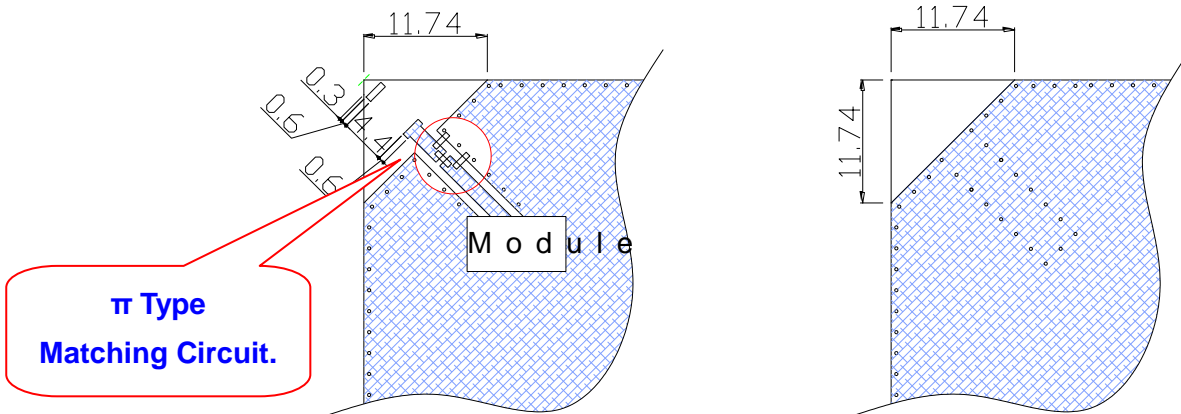
Average Gain

Item	Peak Gain	Efficiency	Average
Value	2.66 dBi	58.01%	-2.36 dBi

Customer's Requirement Layout Dimension



L a y o u t 1

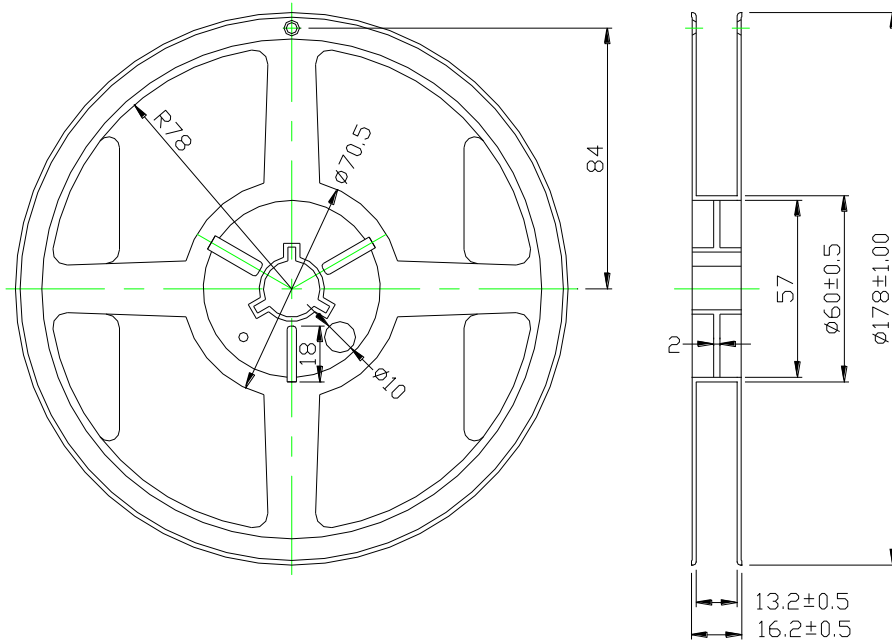


L a y o u t 2

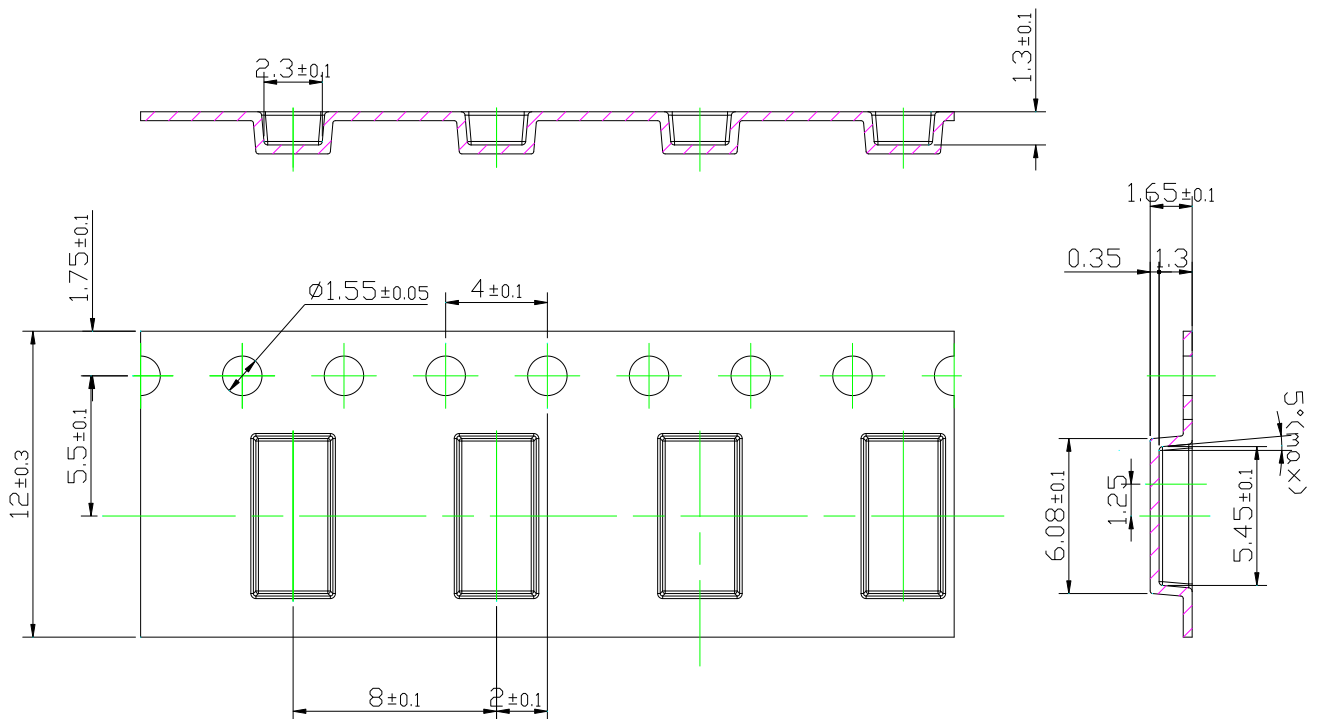
E. Packing:

1.Reel Dimensions:

Pieces/tape : 1500 pcs.



2.Tape Dimensions:



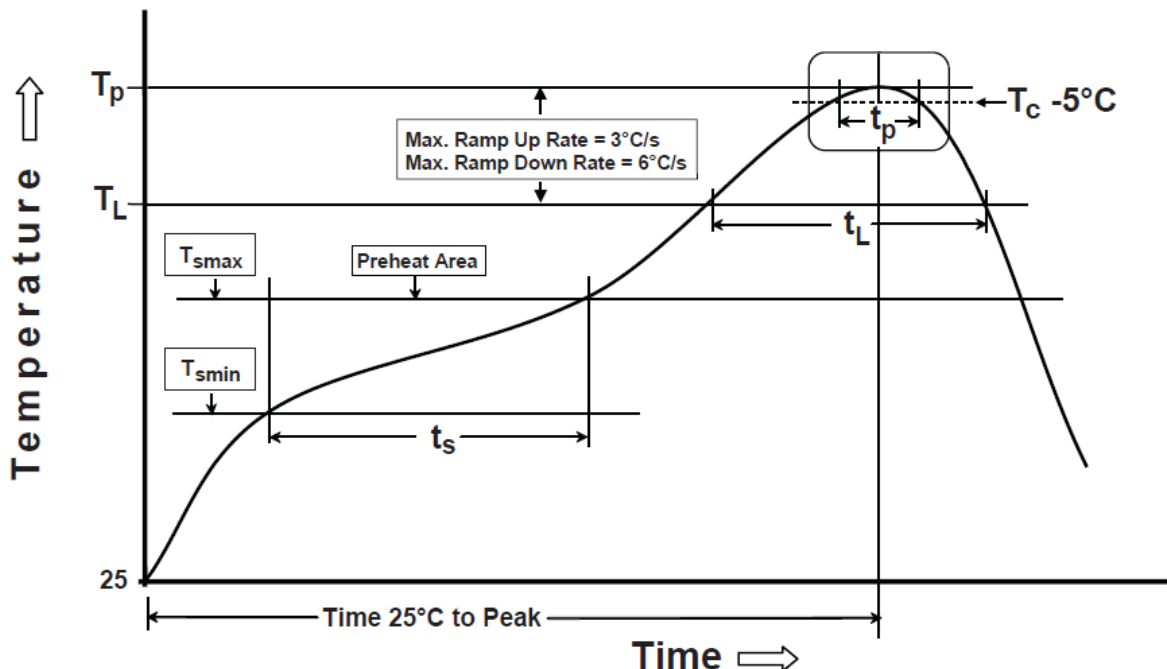
F. Recommended Reflow Profile:

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(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 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.