



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 Antenna 4500MHz BW 3000MHz Size 10x4mm
TST Parts No.: TQ0189AA0000

Customer Parts No.: _____

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

Checked by: _____ Nina Chen *Nina Chen*

Approved by: _____ Kazuma Lee *Kazuma Lee*

Date: _____ 2023/04/14

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 Antenna 4500MHz BW 3000MHz Size 10x4mm

MODEL NO.: TQ0189AA0000

REV. NO.:1.0

A. Maximum Rating:

1. Operating Temperature Range: -30°C to +85°C
2. Storage Temperature Range: -30°C to +85°C
3. Moisture Sensitivity Level: Level 1 (MSL 1)

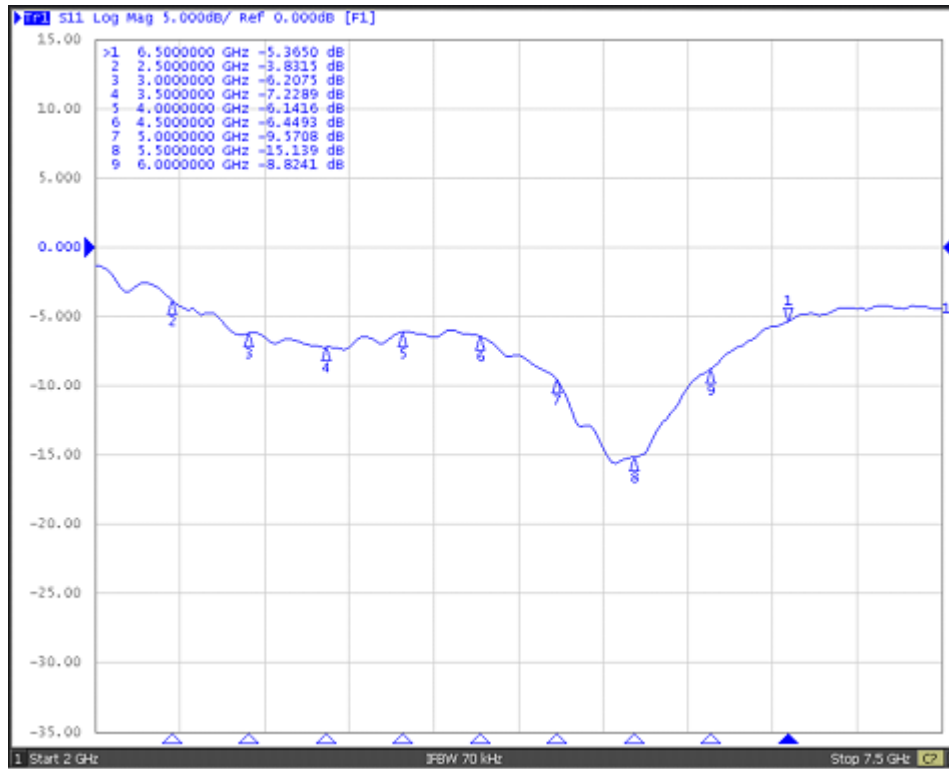
RoHS Compliant
Lead free
Lead-free soldering

Electrostatic Sensitive Device (ESD)

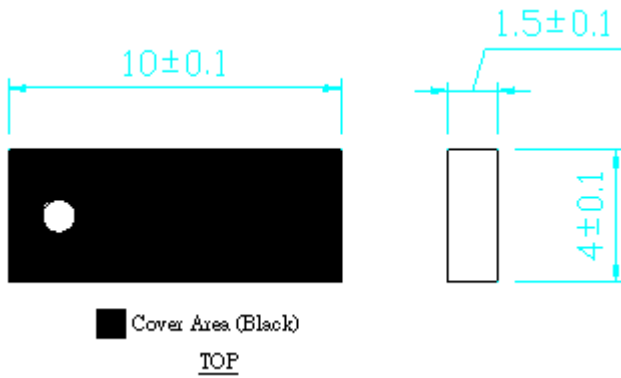
B. Electrical Characteristics:

Parameter	Specification
Working Frequency	3000~6000 MHz
Polarization	Linear
Impedance	50 Ω

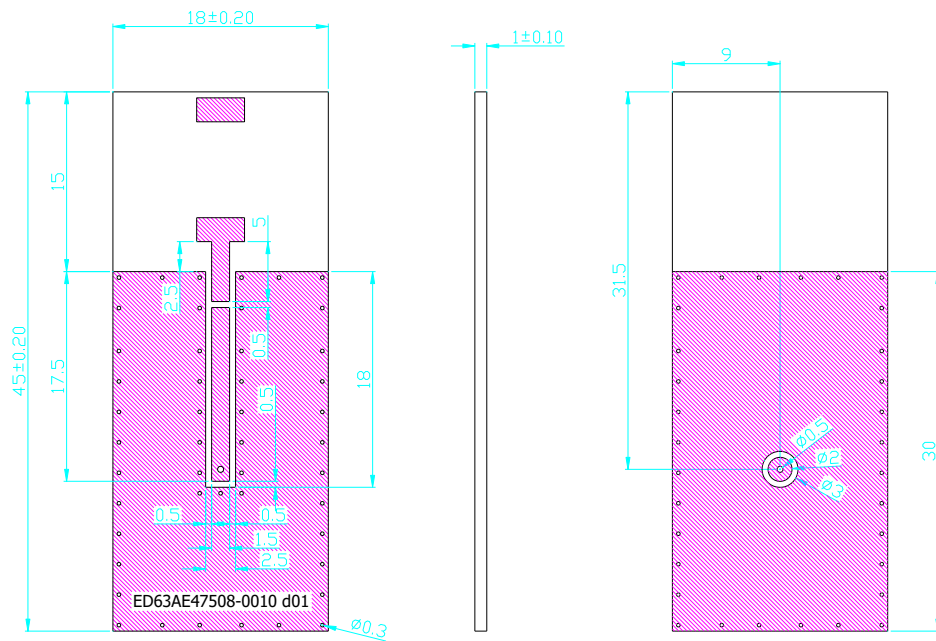
C. Frequency Characteristics:



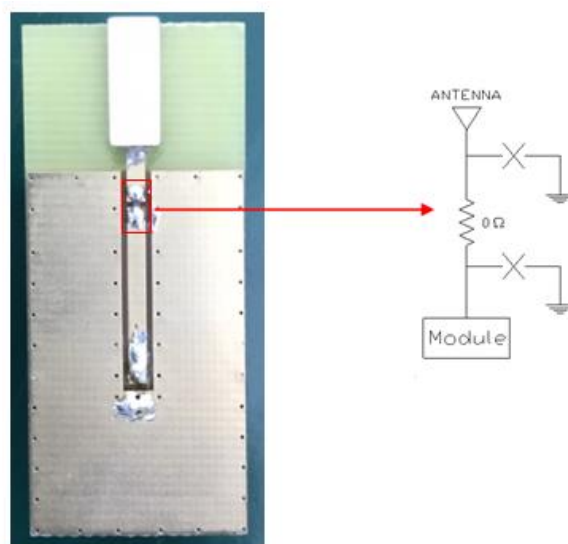
D. Dimension:



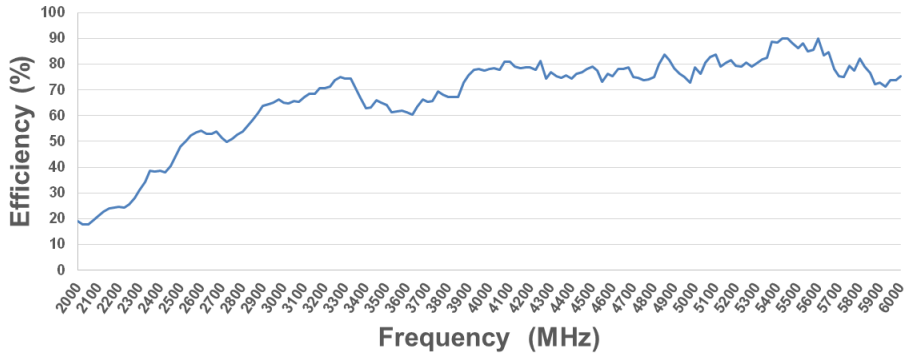
Demo Board Dimension



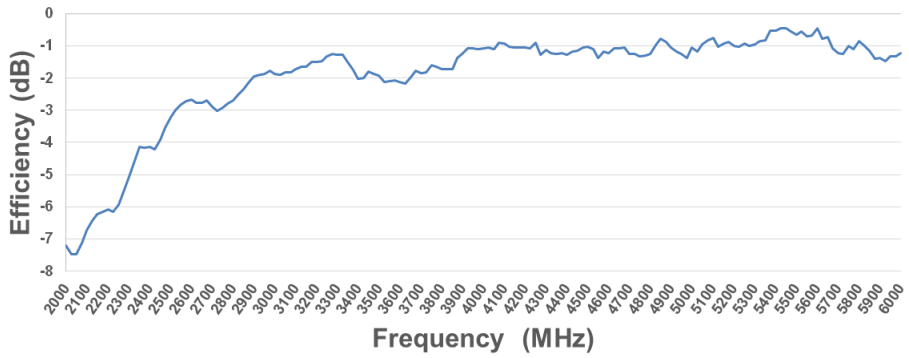
Antenna Measurement on Demo Board



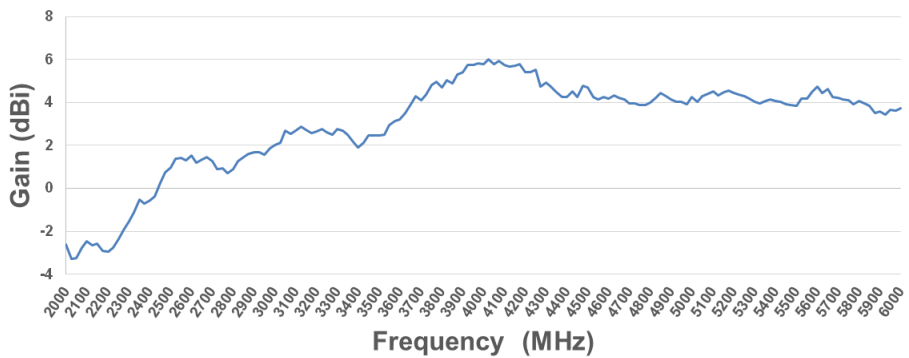
Efficiency



Average Gain

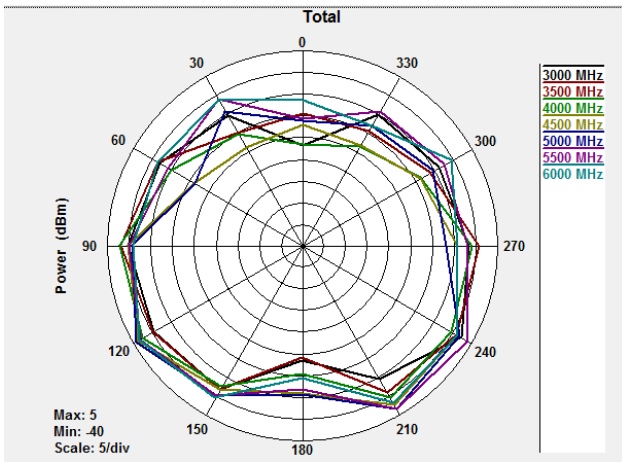
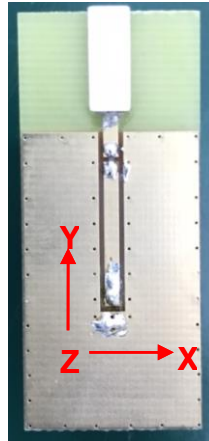


Peak Gain

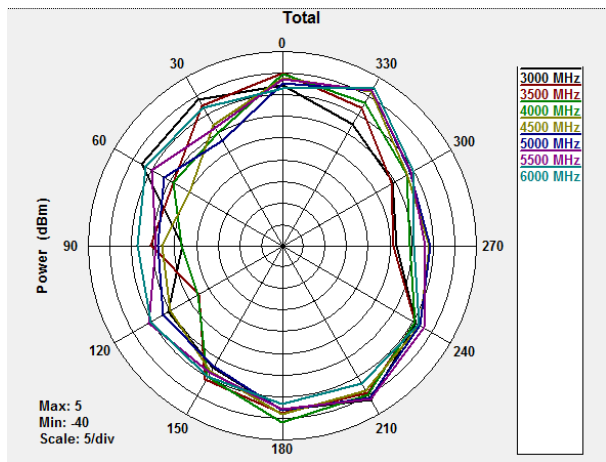


Frequency (MHz)	3000	3500	4000	4500	5000	5500	6000
Efficiency(%)	65.03	64.11	78.21	79.03	78.62	86.07	75.20
Average Gain(dB)	-1.86	-1.93	-1.06	-1.02	-1.04	-0.65	-1.23
Peak Gain(dBi)	2.01	2.48	5.79	4.70	4.24	3.83	3.72

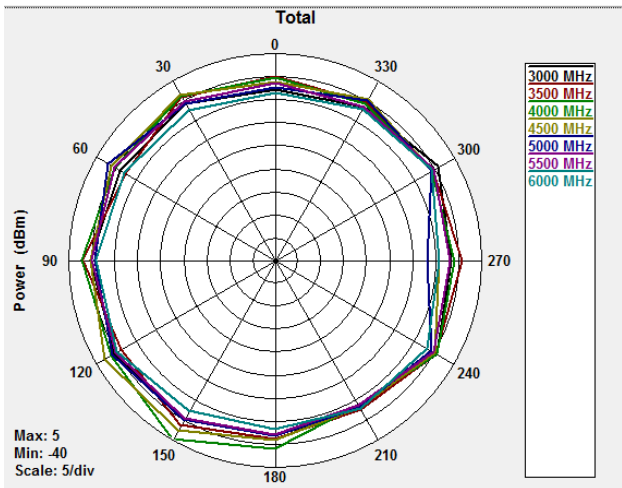
Antenna 2D Pattern



XY-Plane

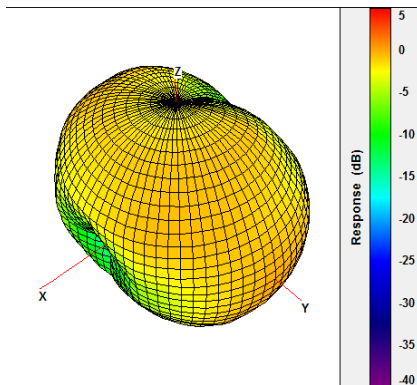
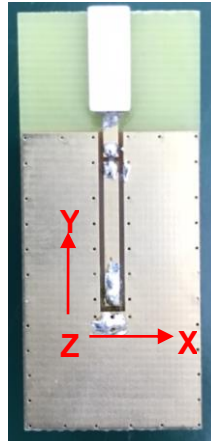


XZ-Plane

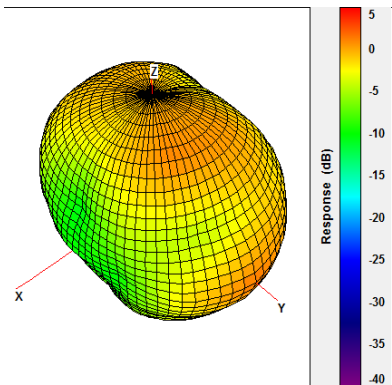


YZ-Plane

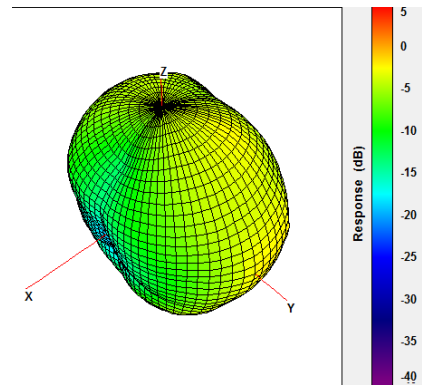
Antenna 3D Pattern



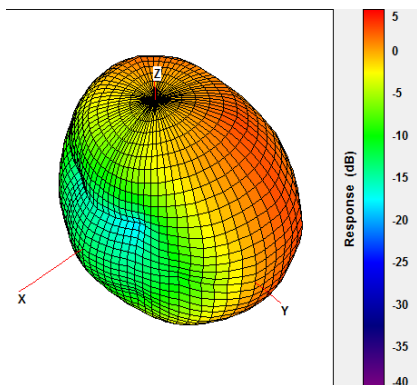
3000MHz



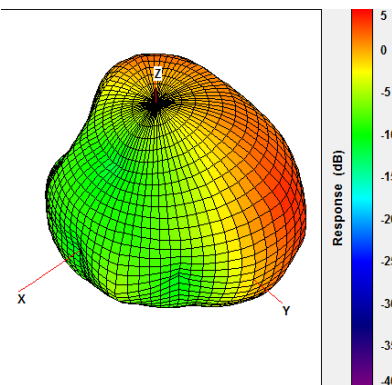
3500MHz



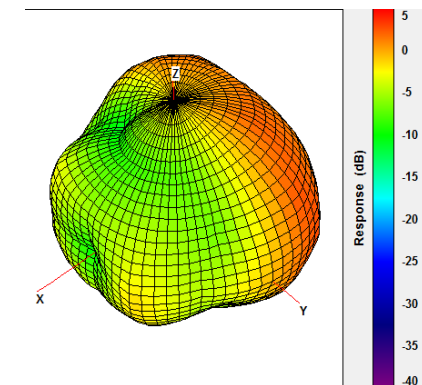
4000MHz



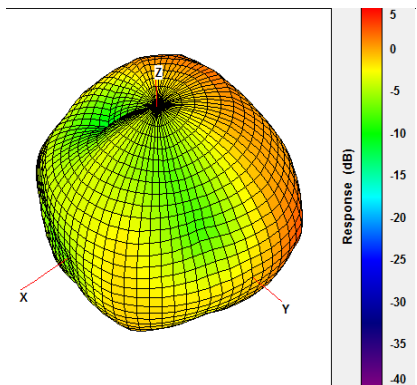
4500MHz



5000MHz



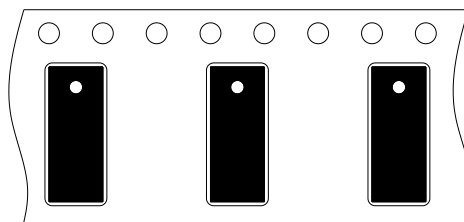
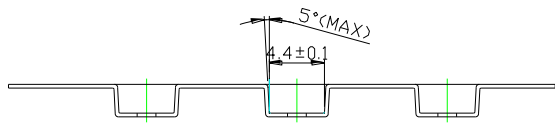
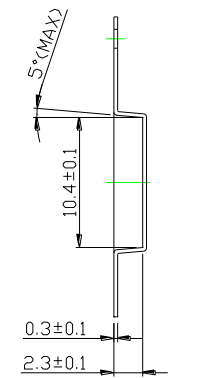
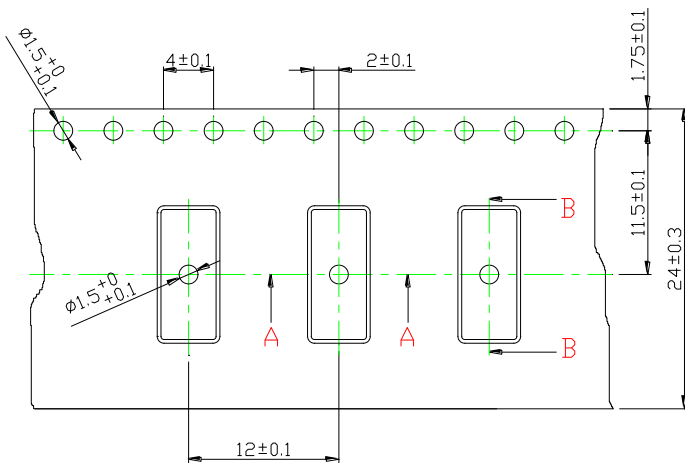
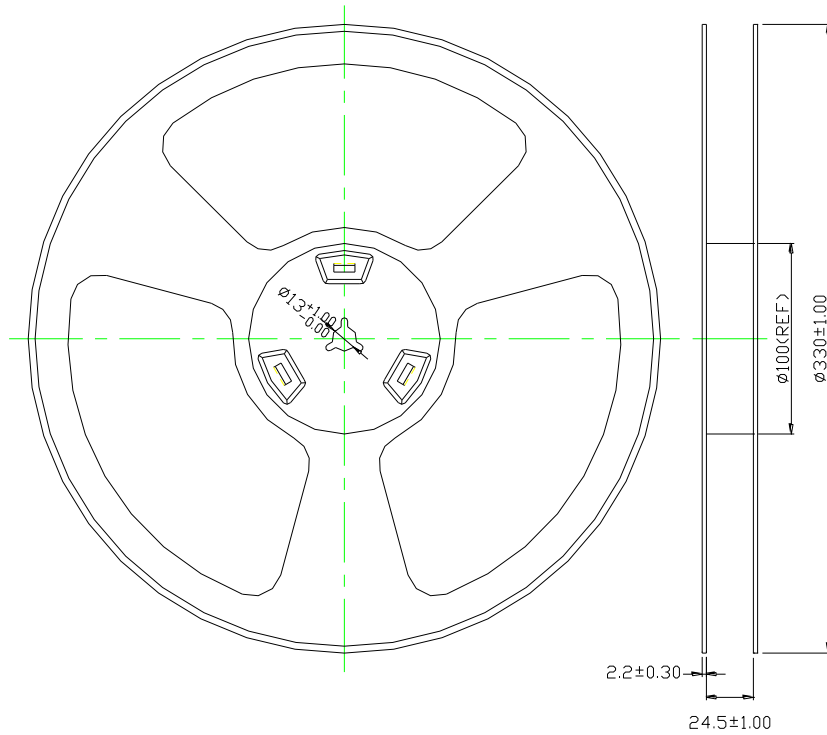
5500MHz



6000MHz

E. Packing:

Pieces/tape : 2000pcs.



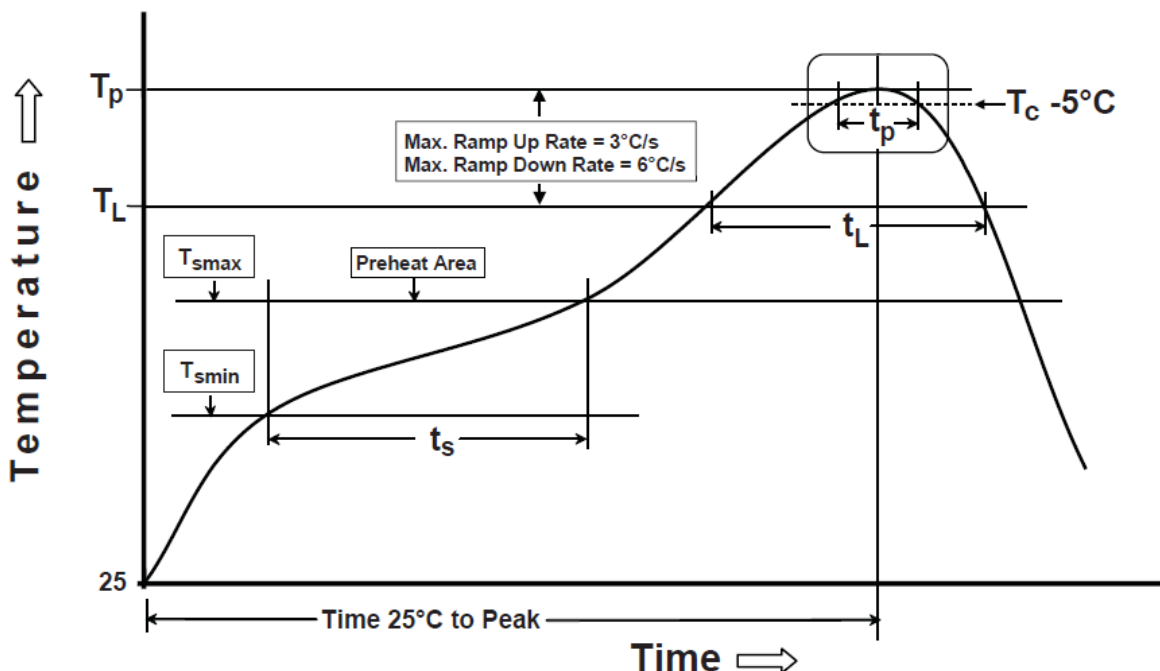
F. Recommended Reflow Profile:

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.