



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
Taoyuan, 324, Taiwan, R.O.C.

TEL: 886-3-4690038 FAX: 886-3-4697532

E-mail: tstsales@mail.taisaw.com Web: www.taisaw.com

Product Specifications Approval Sheet

Product Description: Dielectric Chip Antenna 1585.5MHz BW 49MHz Size 3.05x1.6mm
TST Parts No.: TQ0188AA0000

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 Chip Antenna 1585.5MHz BW 49MHz Size 3.05x1.6mm

MODEL NO.: TQ0188AA0000

REV. NO.:1.0

A. Maximum Rating:

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

RoHS Compliant
 Lead free
 Lead-free soldering

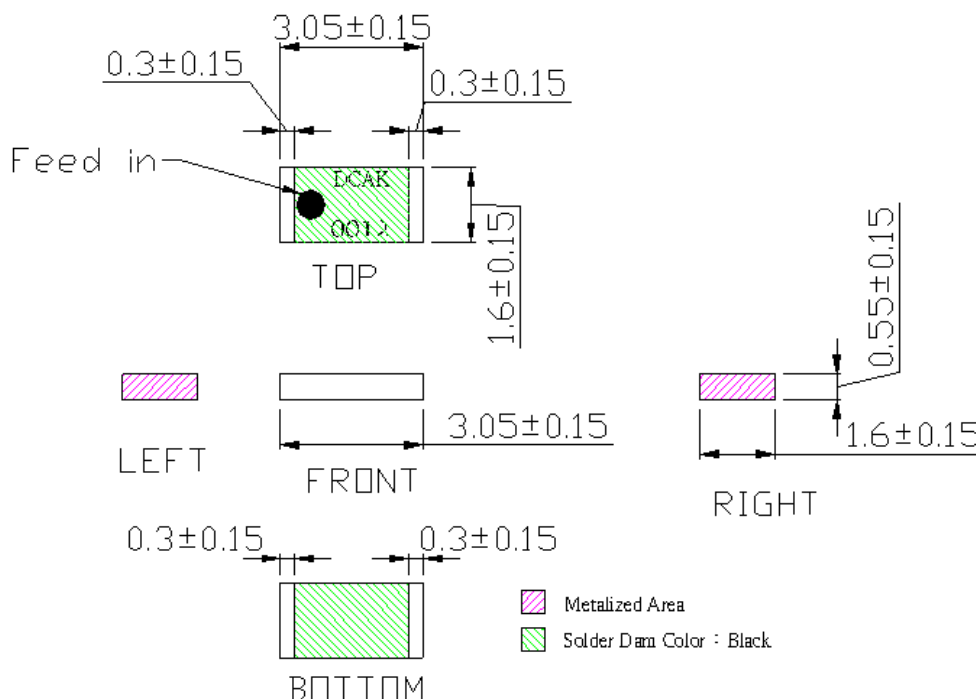
Electrostatic Sensitive Device (ESD)

B. Electrical Characteristics:

Parameter	Specification
Working Frequency	1561~1610MHz
VSWR	2.0max
Polarization	Linear
Impedance	50 Ω

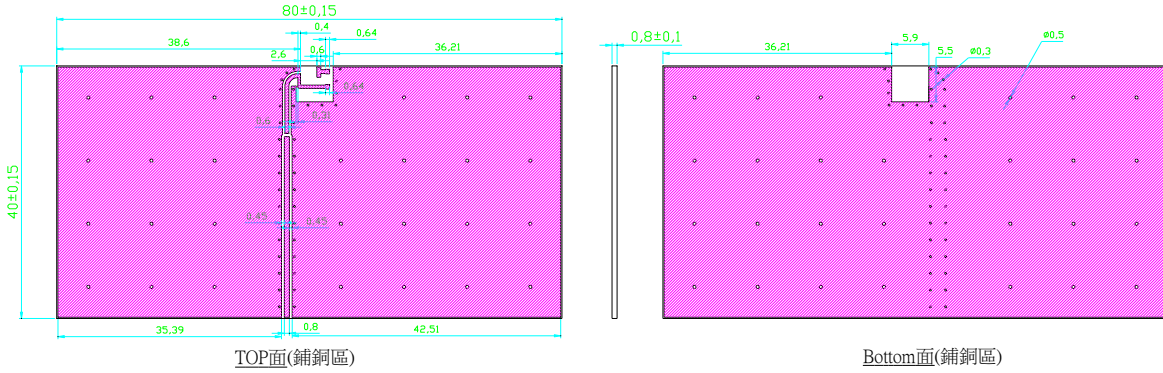
C. Dimension:

Antenna Dimension

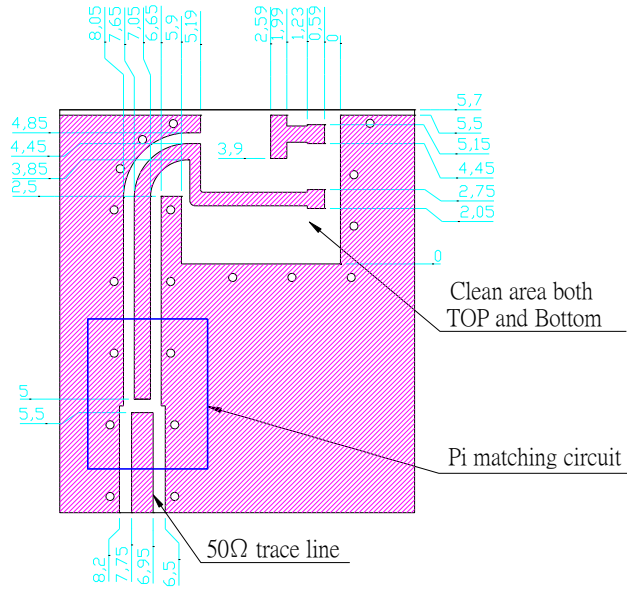


Unit: mm

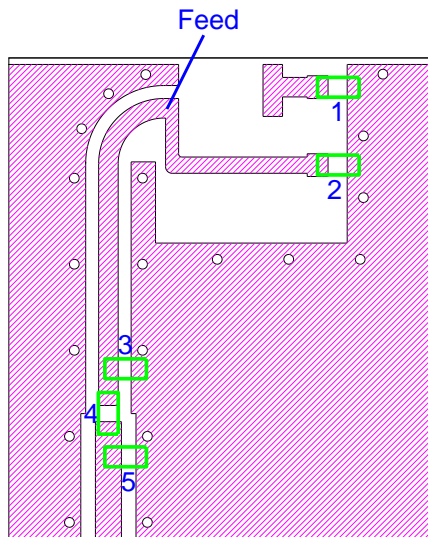
Demo Board Dimension



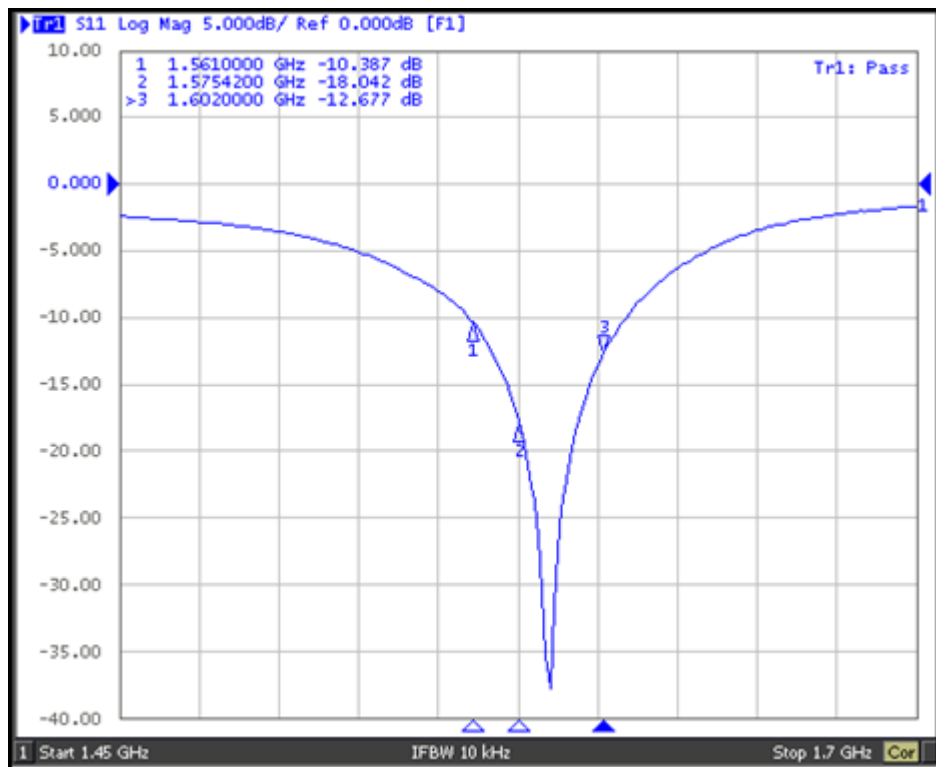
Recommend Layout dimension



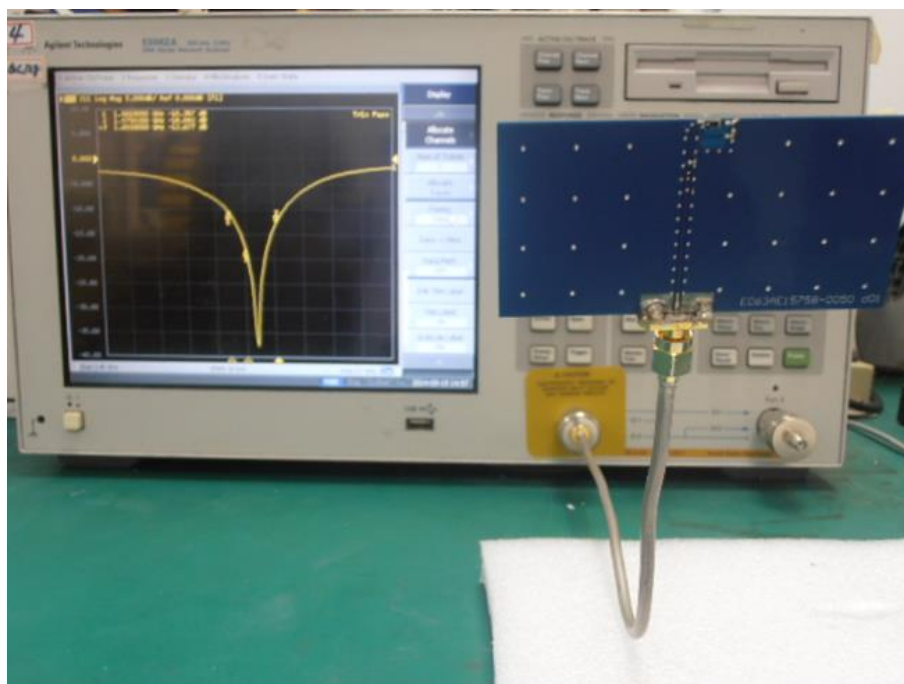
Matching Circuit



Matching Circuit Component					
NO.	1	2	3	4	5
Description	2pF	1pF	3.3pF	0omn	N.A

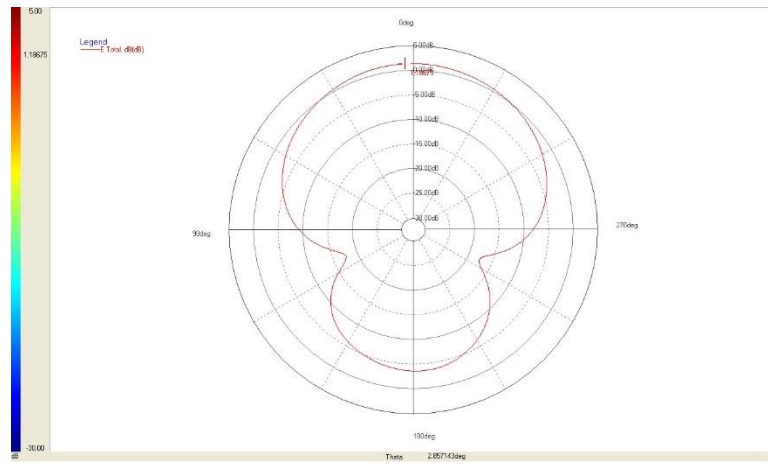


Frequency(MHz)	1561	1575.42	1602
S11(dB)	-10.38	-18.04	-12.67

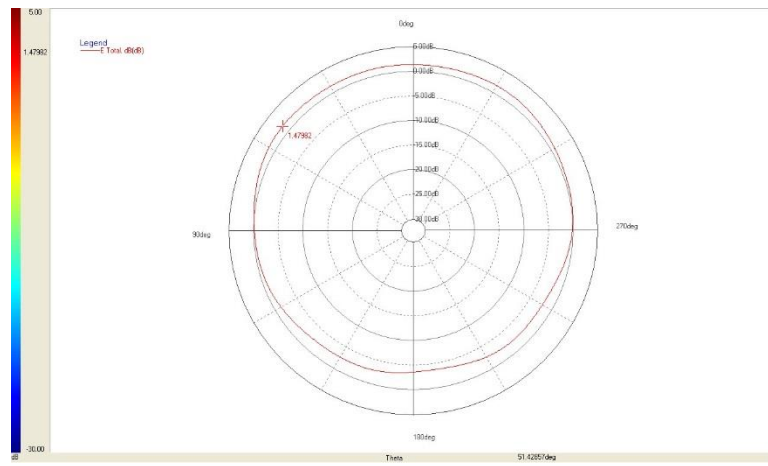


2D Radiation Pattern 1561 MHz

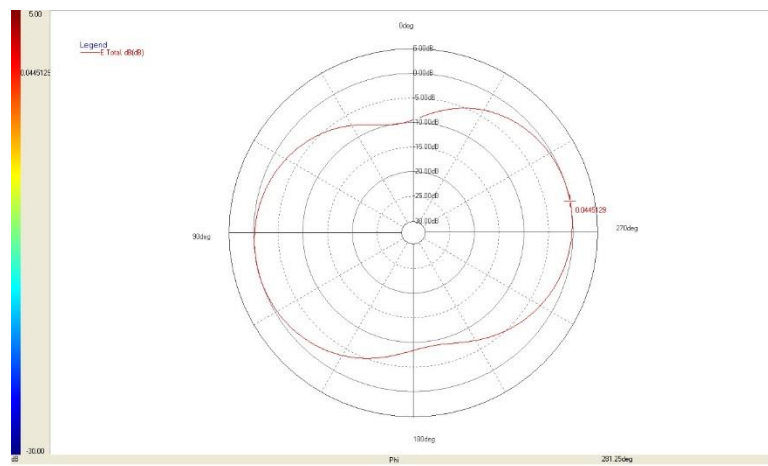
XZ



YZ

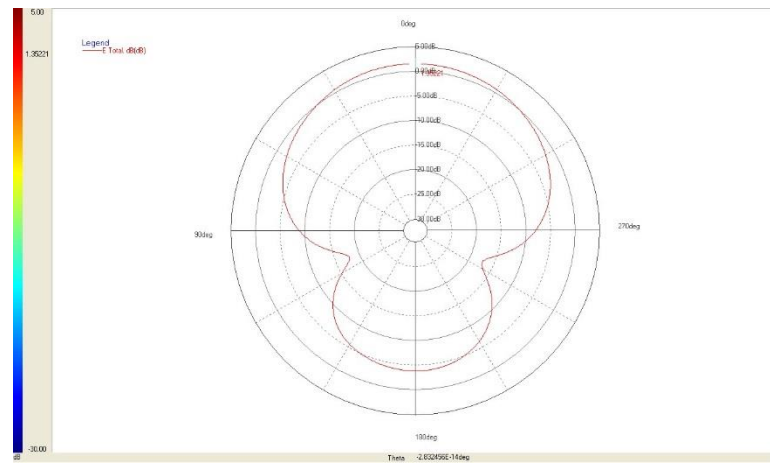


XY

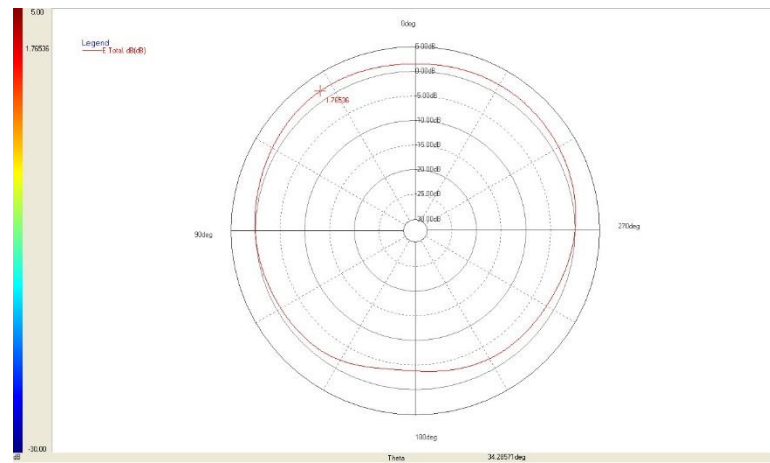


1575.42MHz

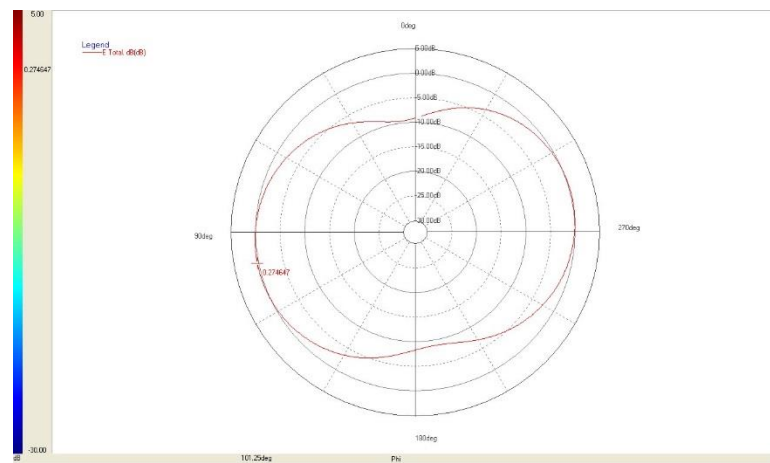
XZ



YZ

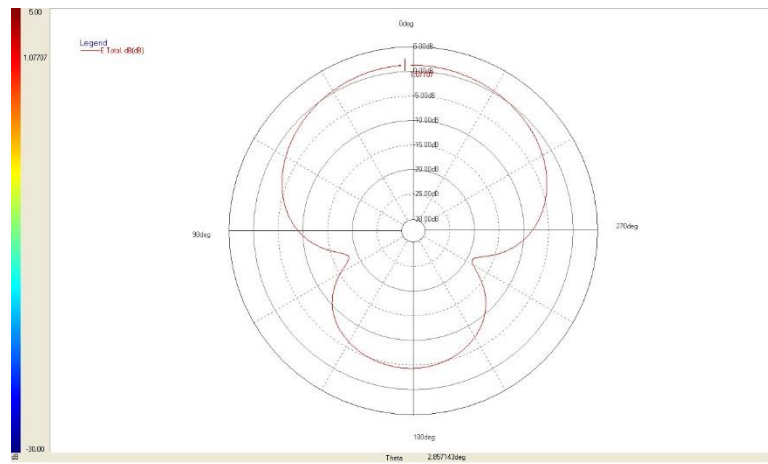


XY

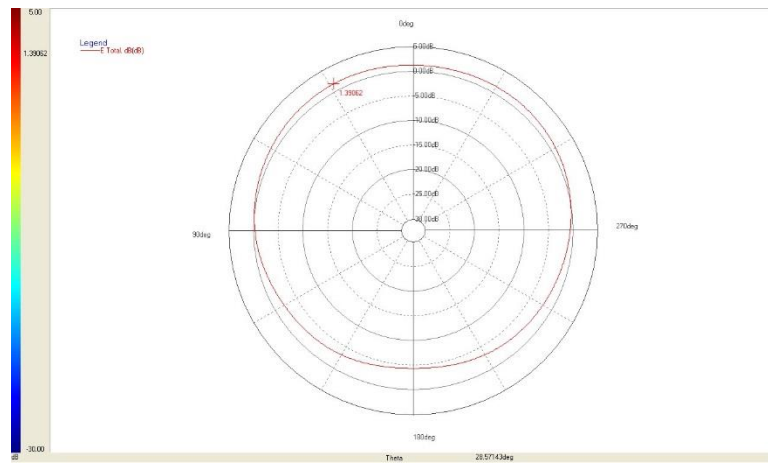


1602MHz

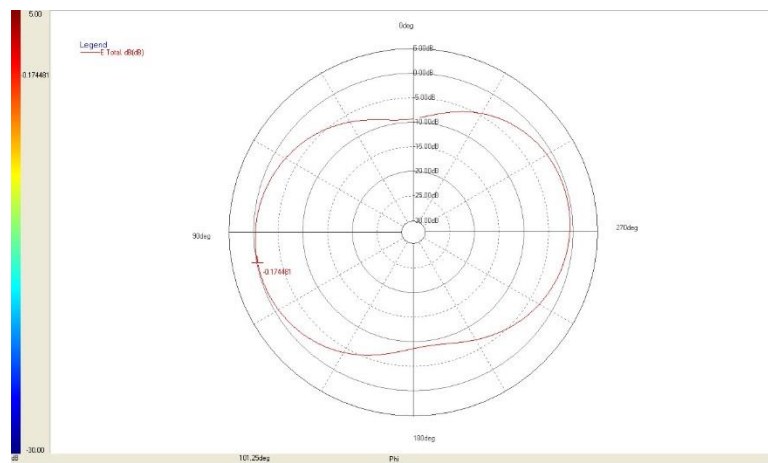
XZ



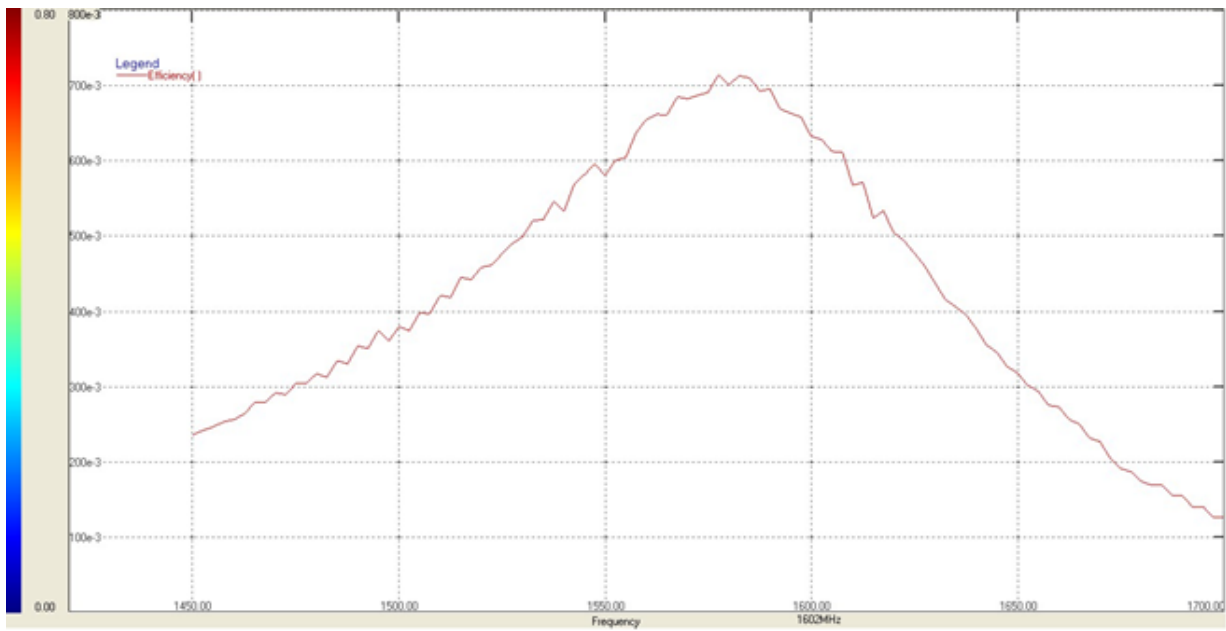
YZ



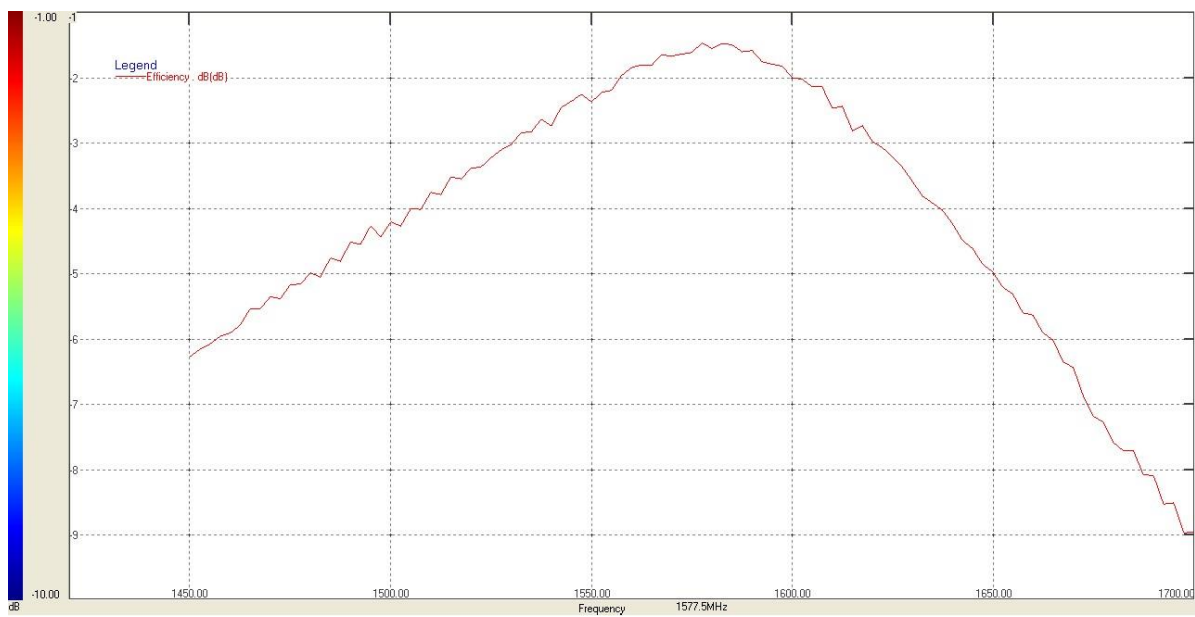
XY



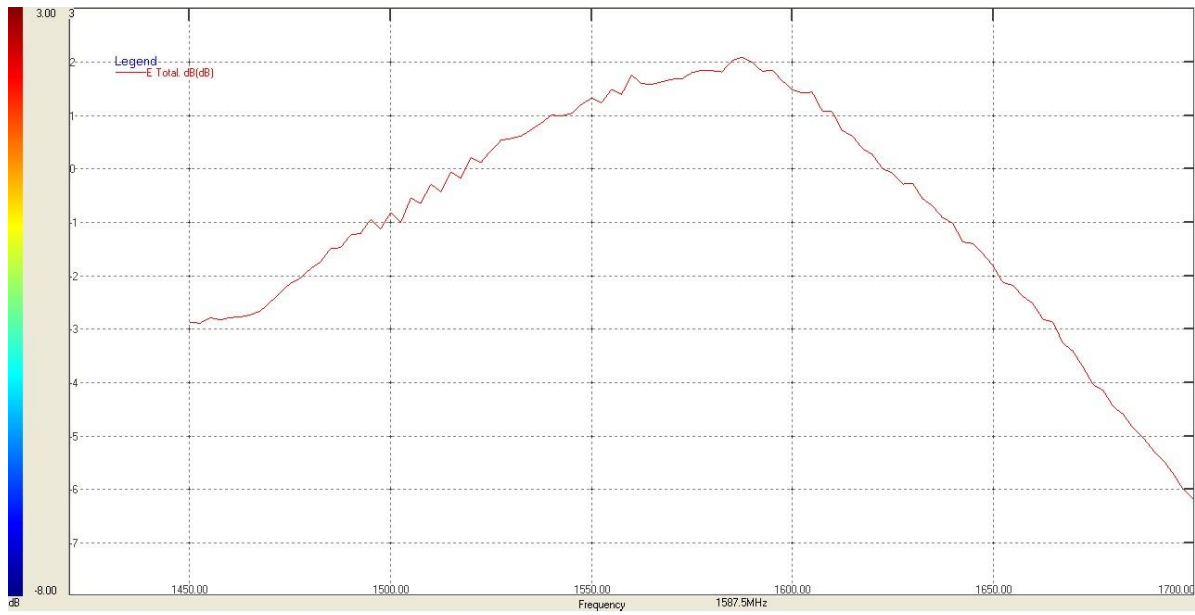
Efficiency :



Average Gain :

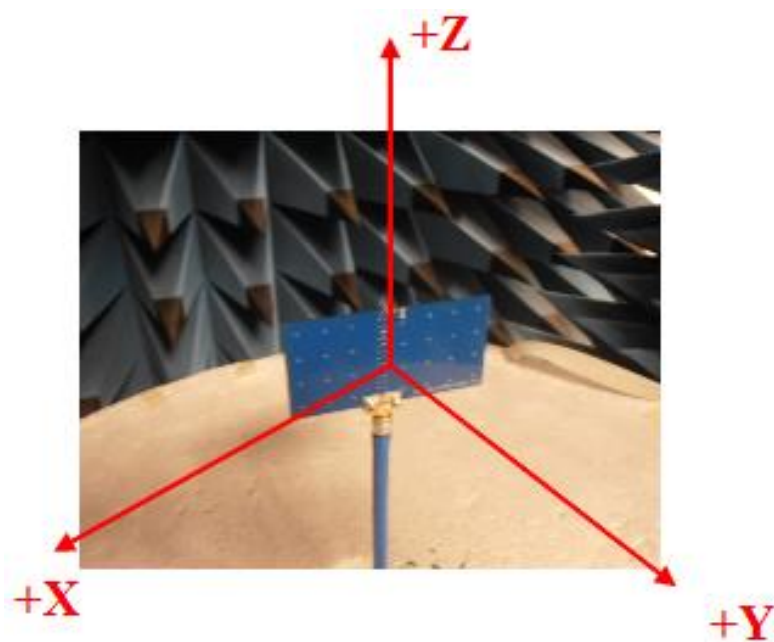


Peak Gain :

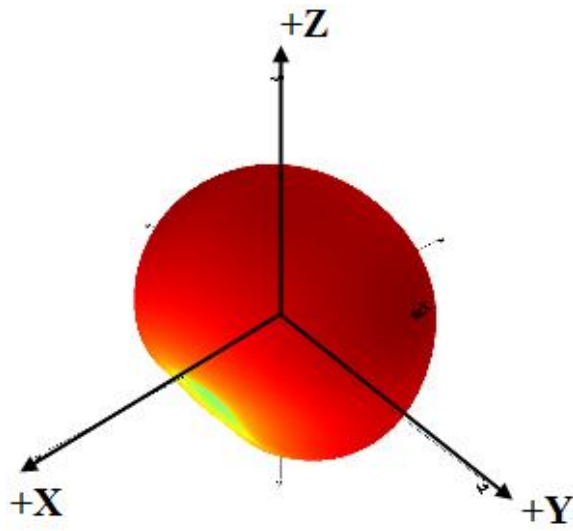


Frequency(MHz)	1561	1575.42	1602
Efficiency(%)	65.74	70.06	63.27
Average Gain(dBi)	-1.82	-1.54	-1.98
Peak Gain(dBi)	1.69	1.81	1.43

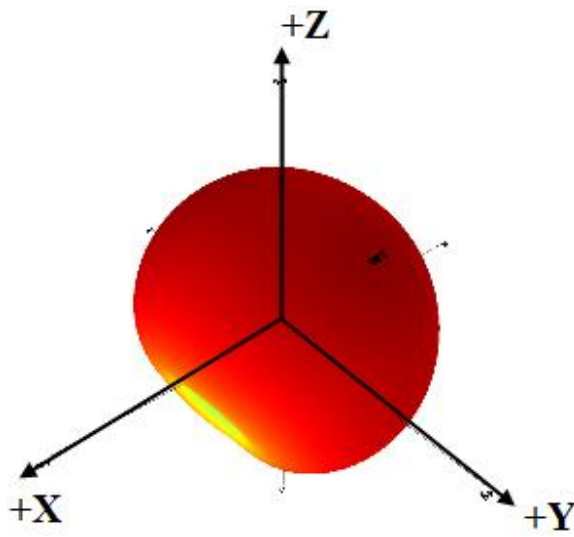
3D Radiation Pattern



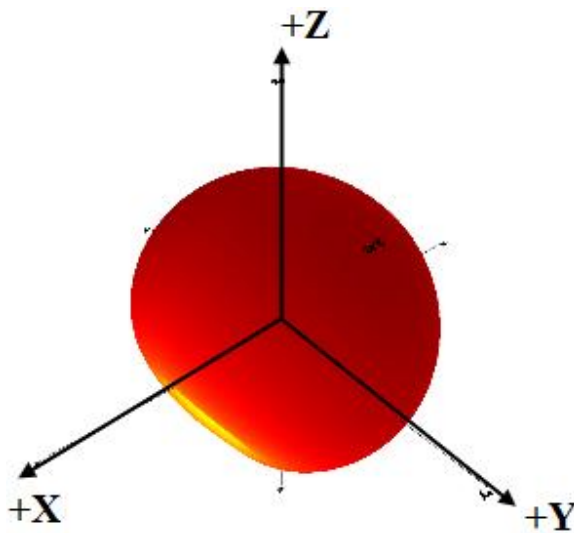
1561MHz



1575.42MHz

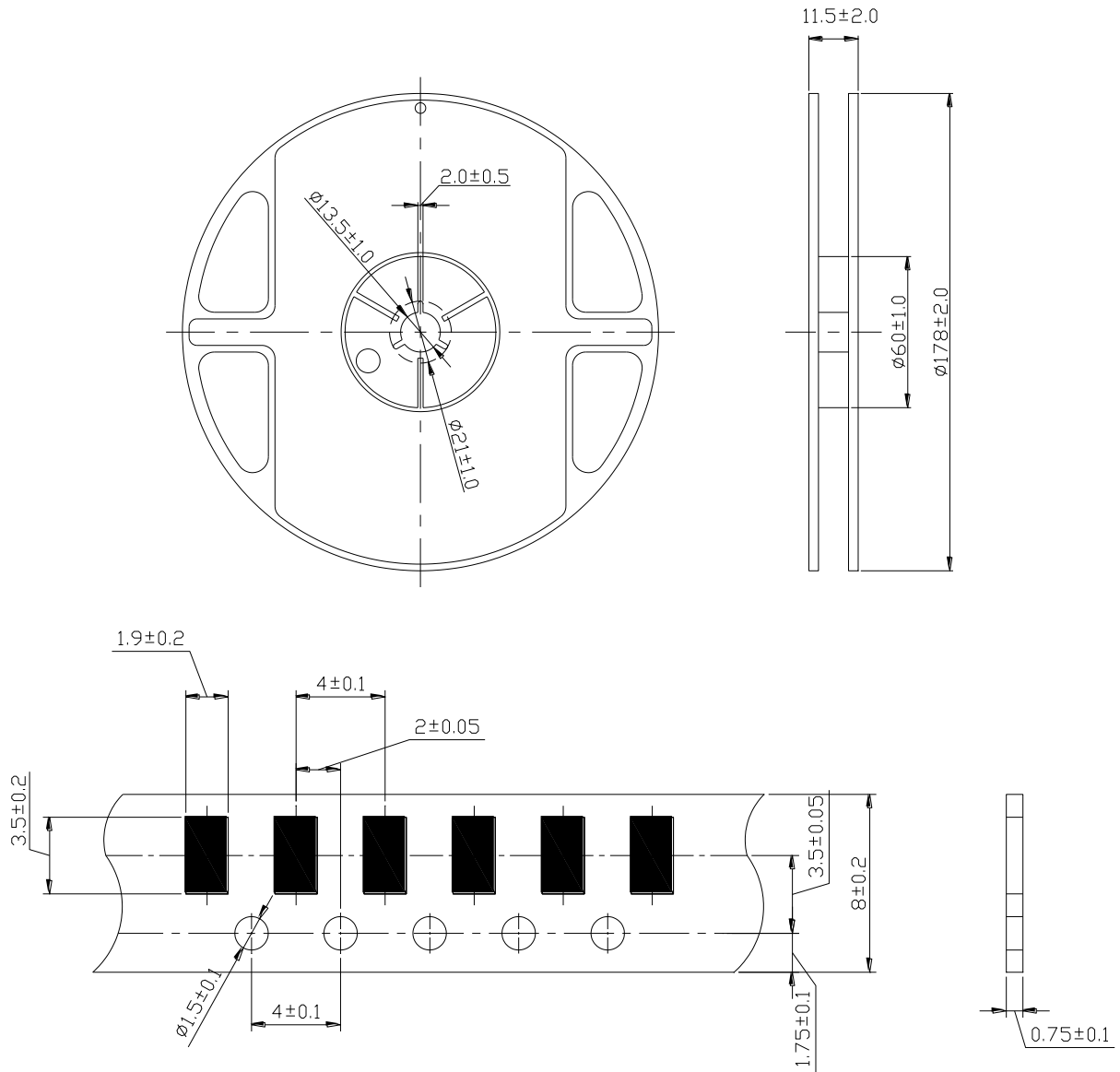


1602MHz

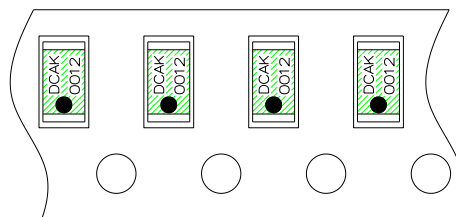


D. Packing:

Pieces/tape:5000 pcs.



Marking direction



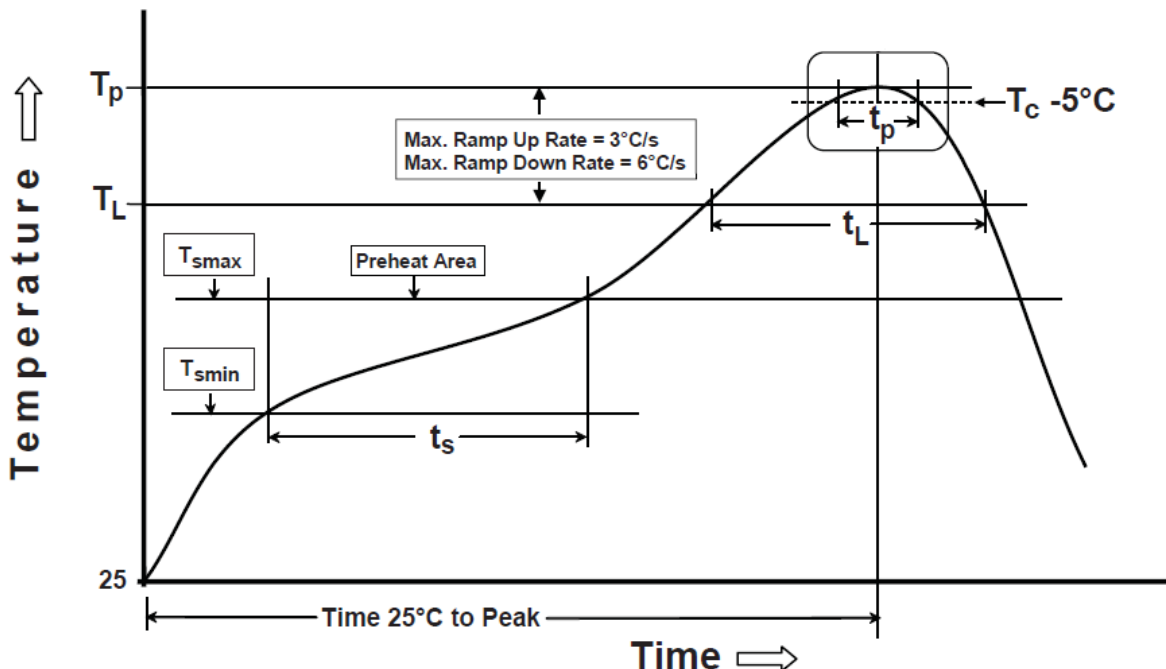
E. Recommended Reflow Profile:

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.