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
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Product Specifications Approval Sheet

Product Description: Dielectric Antenna 1592 MHz Size 25×25mm
TST Parts No.: TQ0190AA0000
Customer Parts No.:_____

Customer signature required

Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by:_____ Nina Chen Nina Chen

Approved by:_____ Kazuma Lee Kazuma Lee

Date:_____ 2023/04/17

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 1592 MHz Size 25×25mm

MODEL NO.: TQ0190AA0000 REV. NO.:1.0

A. Maximum Rating:

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

RoHS Compliant
Lead free
Lead-free soldering

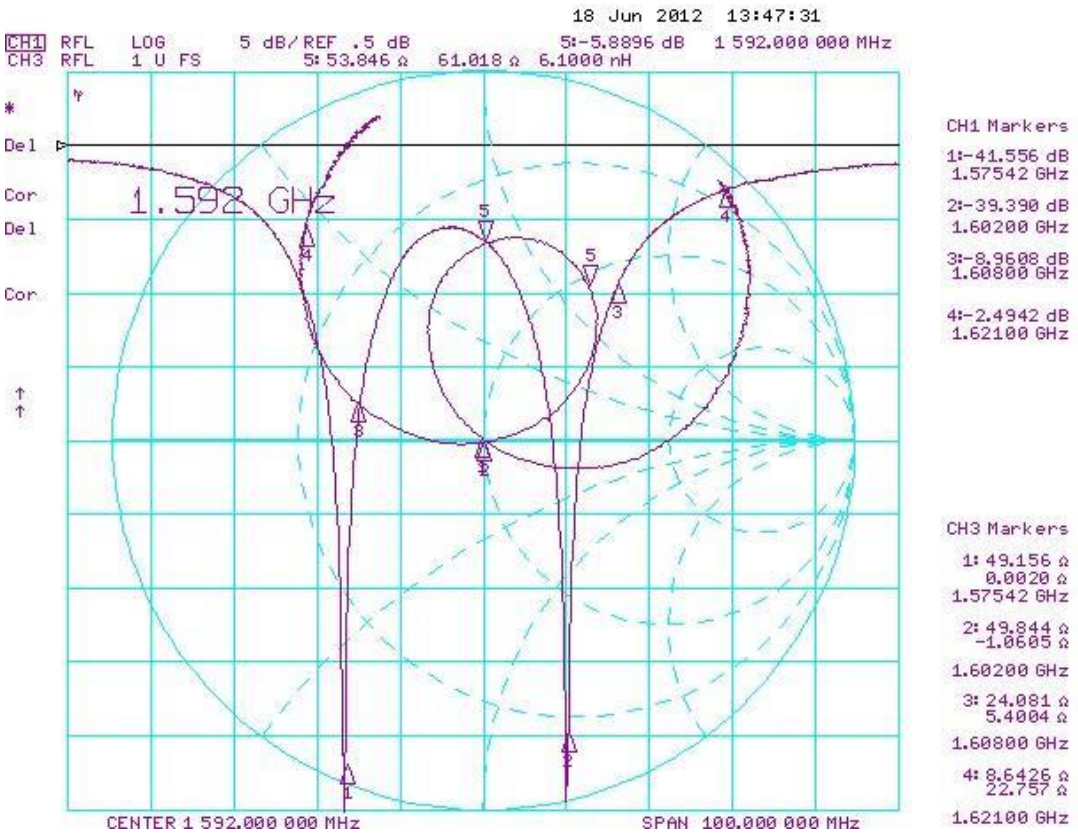
Electrostatic Sensitive Device (**ESD**)

B. Electrical Characteristics:

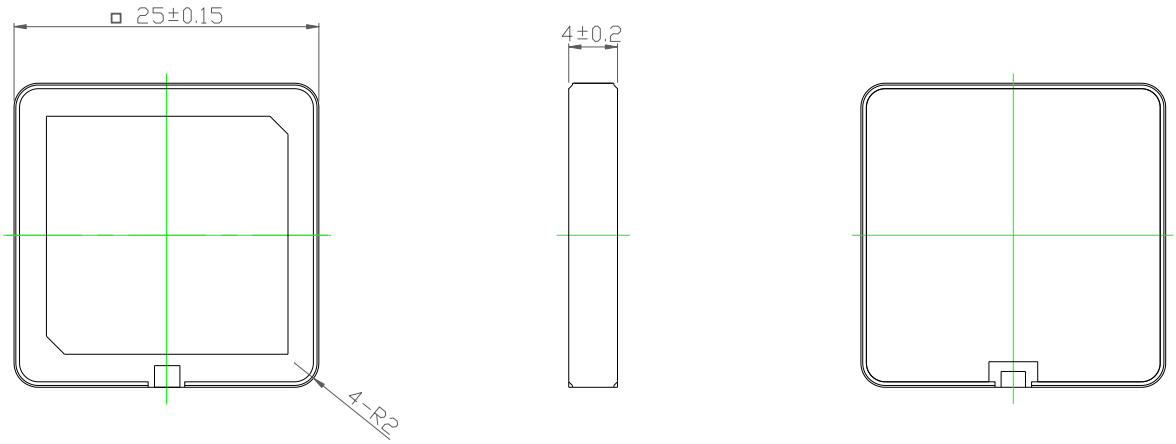
Parameter	Specification	Notes
Range Of Receiving Frequency	GPS：1575.42 ±1.023 MHz GLONASS：1602±5MHz	
Center Frequency	1592MHz ± 3MHz	With 50×50 mm GND Plane
VSWR	1.5 max	Center Frequency
Gain at Zenith	GPS：-0.14 dBi typ. GLONASS：1.75 dBi typ.	
Gain at 10° Elevation	- - -	
Axial Ratio	- - -	
Impedance	50 Ohm	
Frequency Temperature Coefficient(τf)	-40°C to +105°C	0 ± 20ppm / ℃

C.Frequency Characteristics:

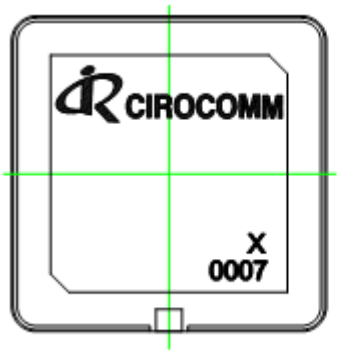
Return Loss, SWR, Impedance, measured on the test fixture.



D. Dimension:

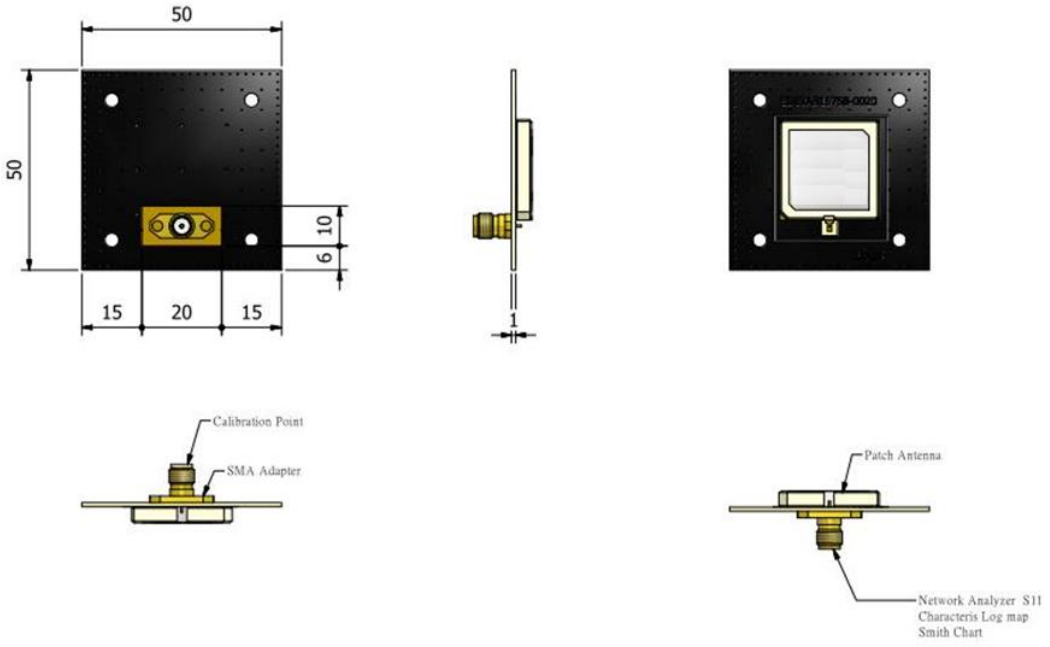


Unit:mm

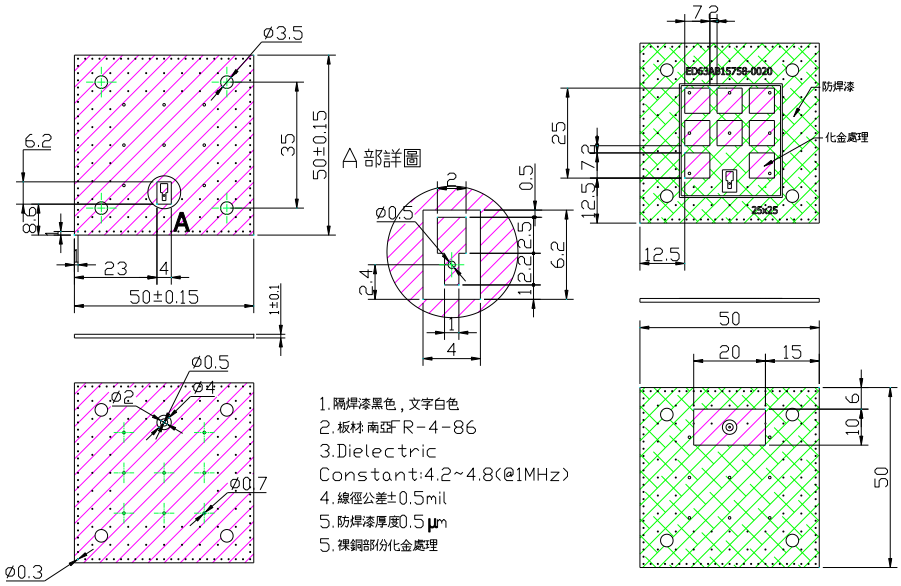


NOTE:
X: manufacture location

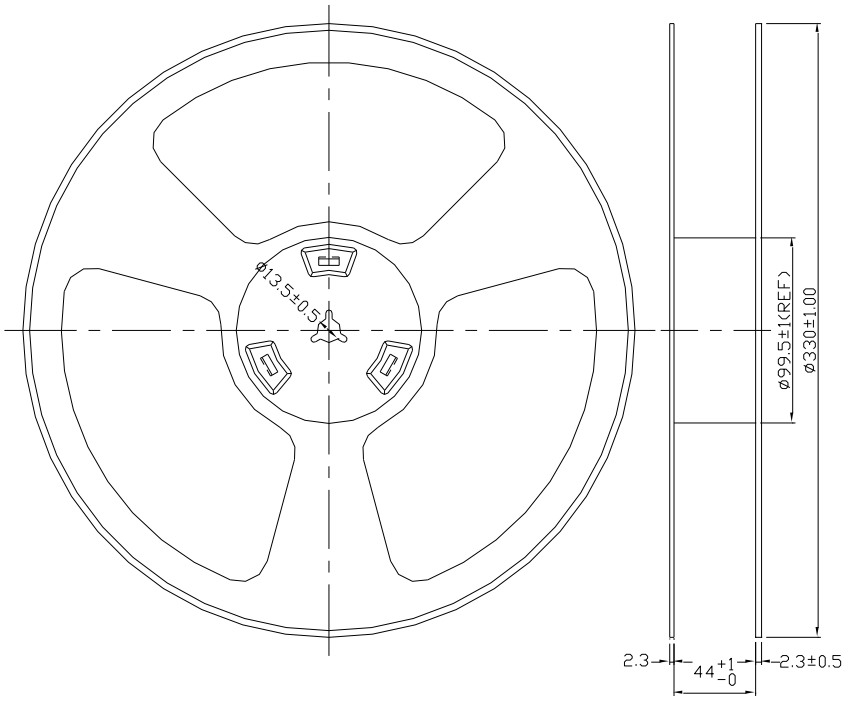
Ground Plane Dimension

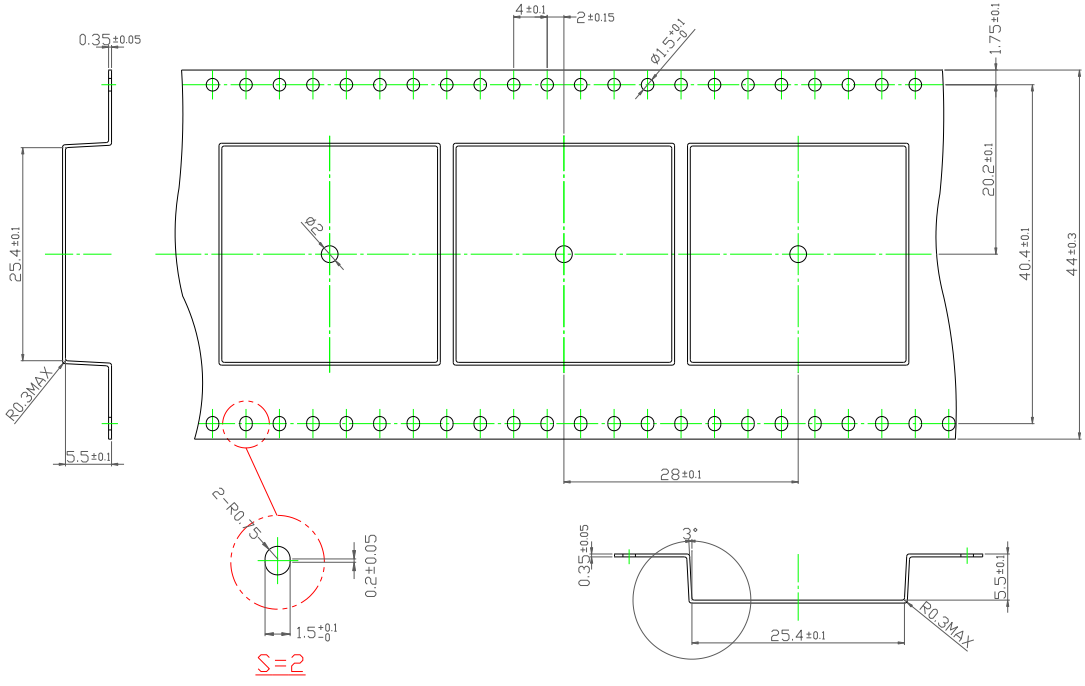


PCB



E. Packing:


ø13.5±0.5
ø99.5±1(REF)
ø330±1.00
2.3
44 +1 -0
2.3±0.5


0.35±0.05
4±0.1
2±0.15
ø1.5 +0.1 -0
1.75±0.1
ø2
20.2±0.1
40.4±0.1
44±0.3
25.4±0.1
R0.3MAX
5.5±0.1
28±0.1
2-R0.15
0.2±0.05
1.5 +0.1 -0
S=2
0.35±0.05
3°
5.5±0.1
25.4±0.1
R0.3MAX

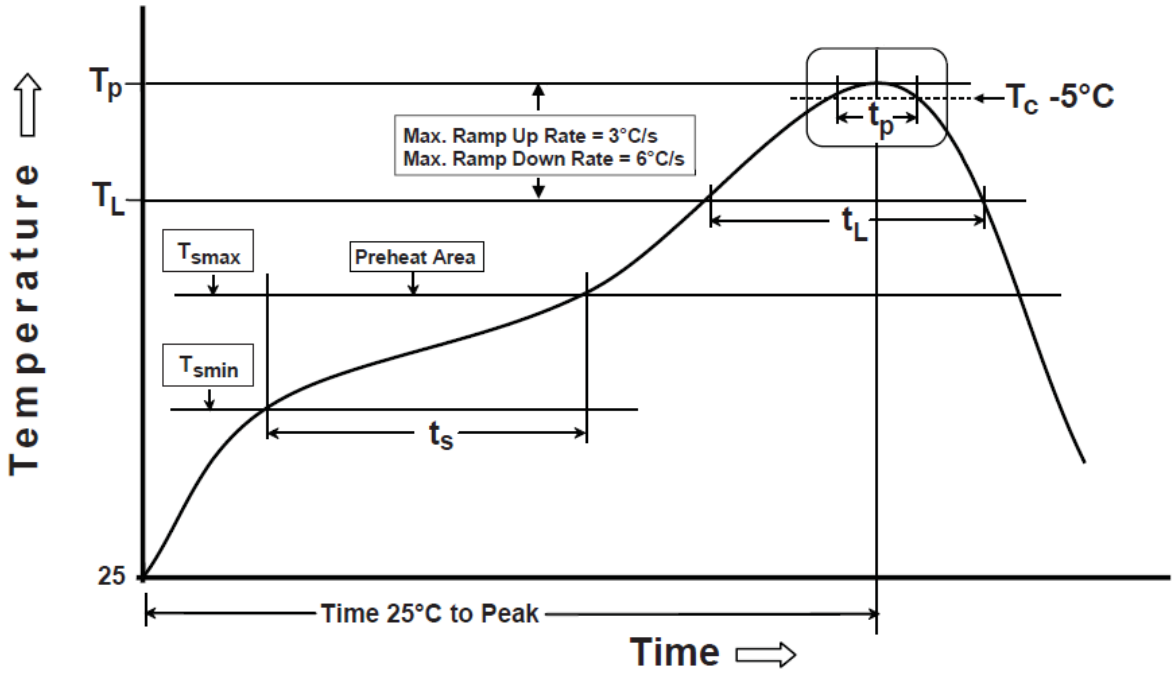
F. Recommended Reflow Profile:

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℃ 200℃ 60-120 seconds
RAMP-UP	Avg. Ramp-up Rate (Tsmax to TP)	3℃/second(max)
REFLOW	-Temperature(TL) -Total Time above TL (t L)	217℃ 30-100 seconds
PEAK	-Temperature(TP) -Time(tp)	260℃ 5-10 second
RAMP-DOWN	Rate	6℃ / second max.
Time from 25℃ 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



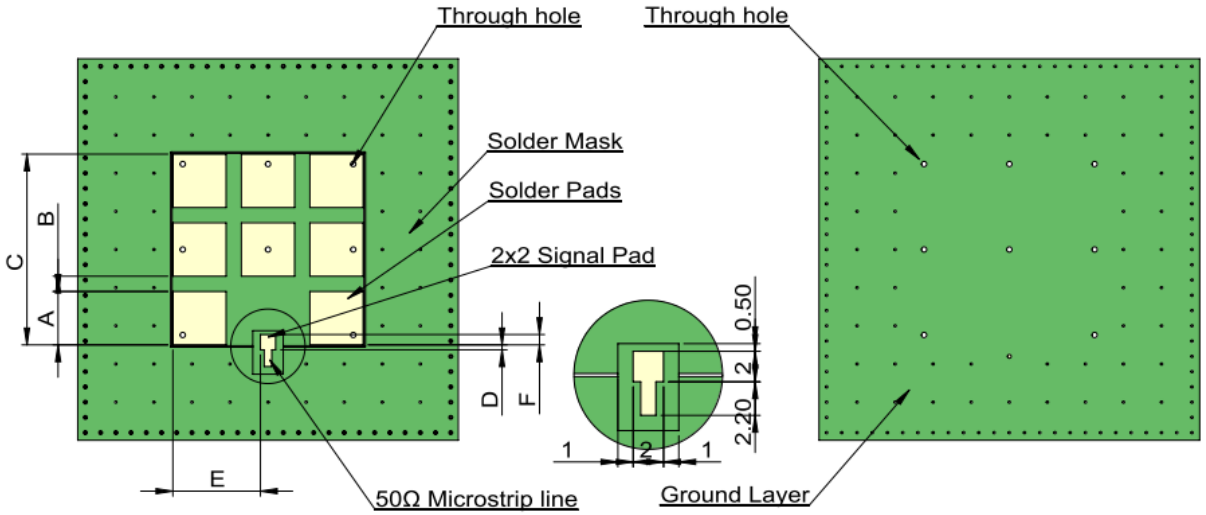
Soldering With Iron:

Soldering condition : Soldering iron temperature 270±10 ℃.

Apply preheating at 120℃ for 2-3 minutes. Finish soldering for each terminal within 3 seconds, if soldering iron over temperature 270±10 ℃ or 3 seconds, it will make component surface peeling or damage.

Soldering iron can not leakage of electricity.

Recommendations of the Antenna Foot Print Tables：



Type/Size	A	B	C	D	E	F
25x25x4	7±0.2	2±0.2	25±0.2	0.65±0.2	11.5±0.2	1.35±0.2

Recommendations of the PCB layout：

a. It needs at least 5mm clearance between LCD panel/shielding and around antenna.

b. Keep ground area around antenna as symmetrical as possible.

c. It’s can’t be obscured metal in top of antenna space.