SPECIFICATION

Model No. : **SGGP.25.4.A.02**

Product Name : GPS/GLONASS/GALILEO SMT Patch Antenna

Features : 25mm*25mm*4.5mm

Single Feed SMT Mount

GPS/GALILEO: 1575MHz

GLONASS: 1602MHz

Patent pending

RoHS Compliant

1. Introduction

This ceramic 25mm GPS/GLONASS/GALILEO patch antenna is mounted via SMT process and has been pre-tuned for a 50*50mm ground plane. Custom part no's tuned for different ground-plane or layout positions and taking into account the specific conditions in your device can be created and supplied by Taoglas.

2. Specification

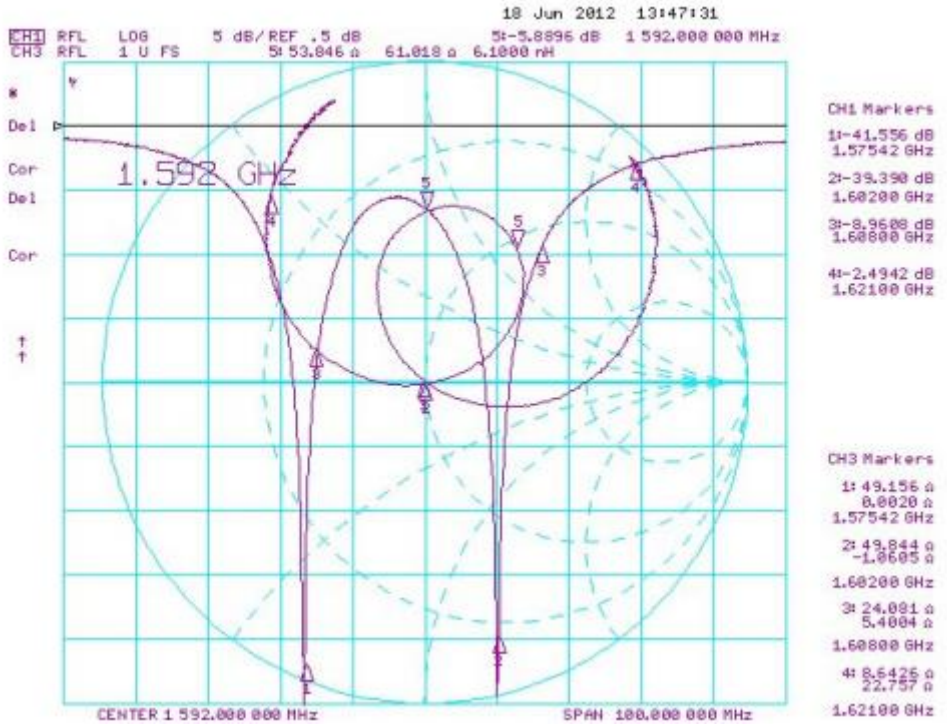
Original Patch Specification tested on 50*50mm ground plane

No	Parameter	Specification	Notes
1	Range of Receiving Frequency	GPS/GALILEO: 1575.42 MHz ± 1.023 MHz GLONASS: 1602± 5 MHz	
2	Center Frequency	1592± 3MHz	With 50*50mm ground plane
3	Bandwidth	8MHz min	Return Loss <-10 dB
4	VSWR	1.5 max	Center Frequency
5	Gain at Zenith	GPS/GALILEO: -0.14dBic typ. GLONASS: 1.75dBic typ.	
8	Polarization	RHCP	
9	Impedance	50 Ohms	
10	Frequency Temperature Coefficient (τf)	0 ± 20ppm / oC	-40ºC to +85ºC
11	Operating Temperature	-40°C to +85°C	

**Changes in user groundplane and environment will offset centre frequency

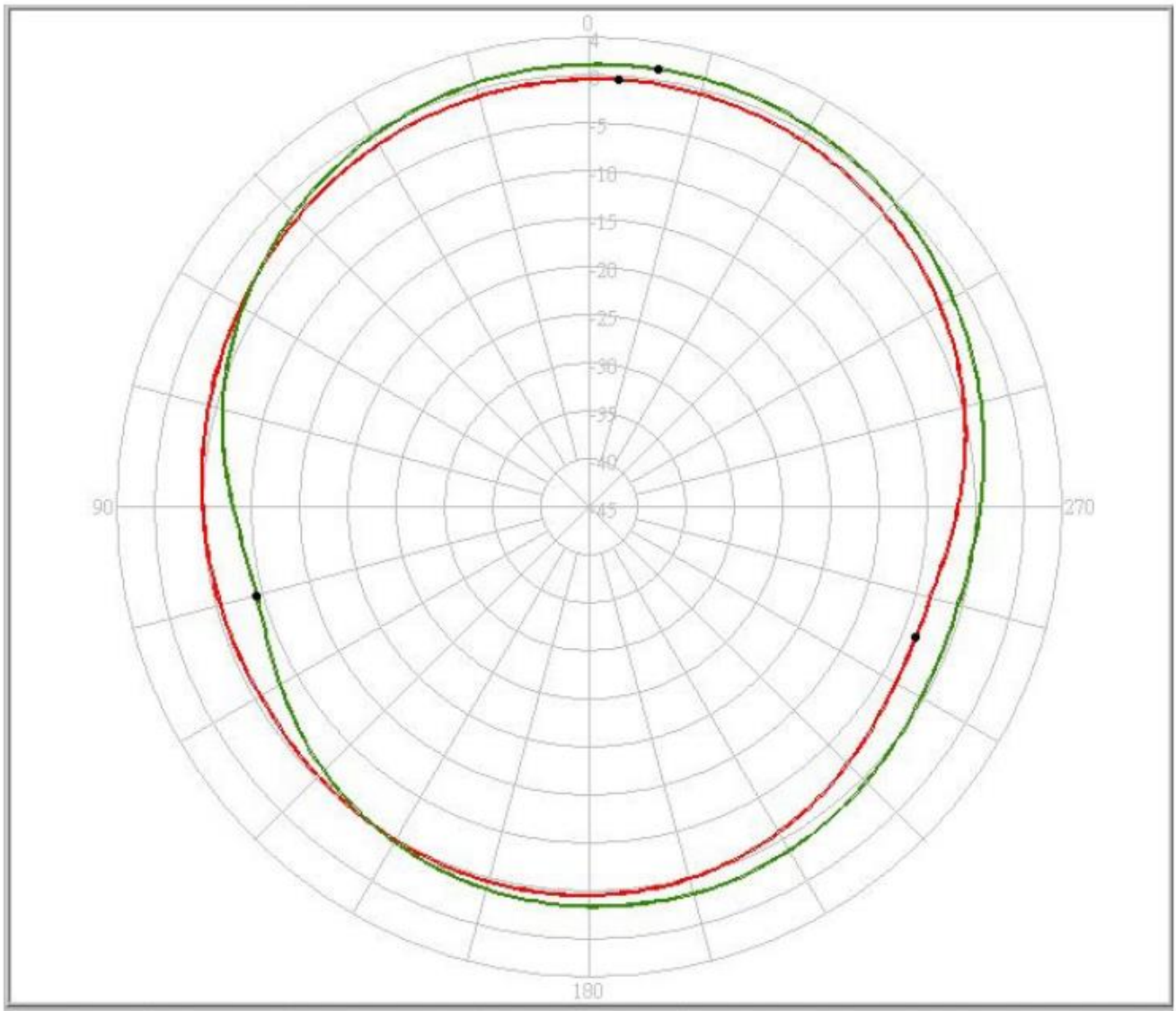
3. Electrical Specifications

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



4. Radiation Patterns

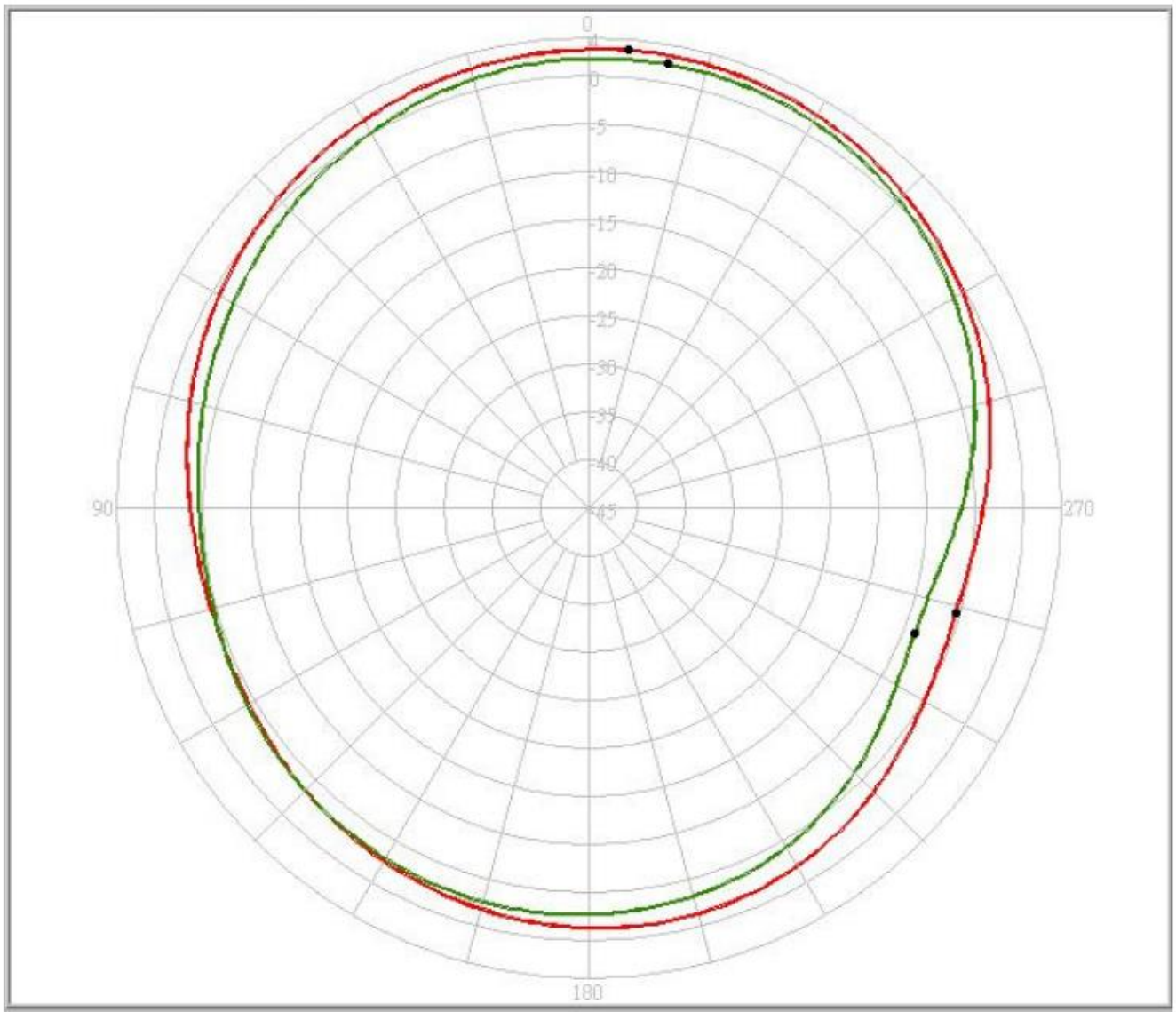
4.1. 1575MHz



Pattern		Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1		SGGP.25	XZ	1575.42	-0.36 / 356.00	-8.52 / 248.00	-3.54	V+H	2012/6/8
2		SGGP.25	YZ	1575.42	1.20 / 351.00	-9.29 / 105.00	-2.49	V+H	2012/6/8

1575.4 MHz XZ+YZ-Plane

4.2. 1602MHz

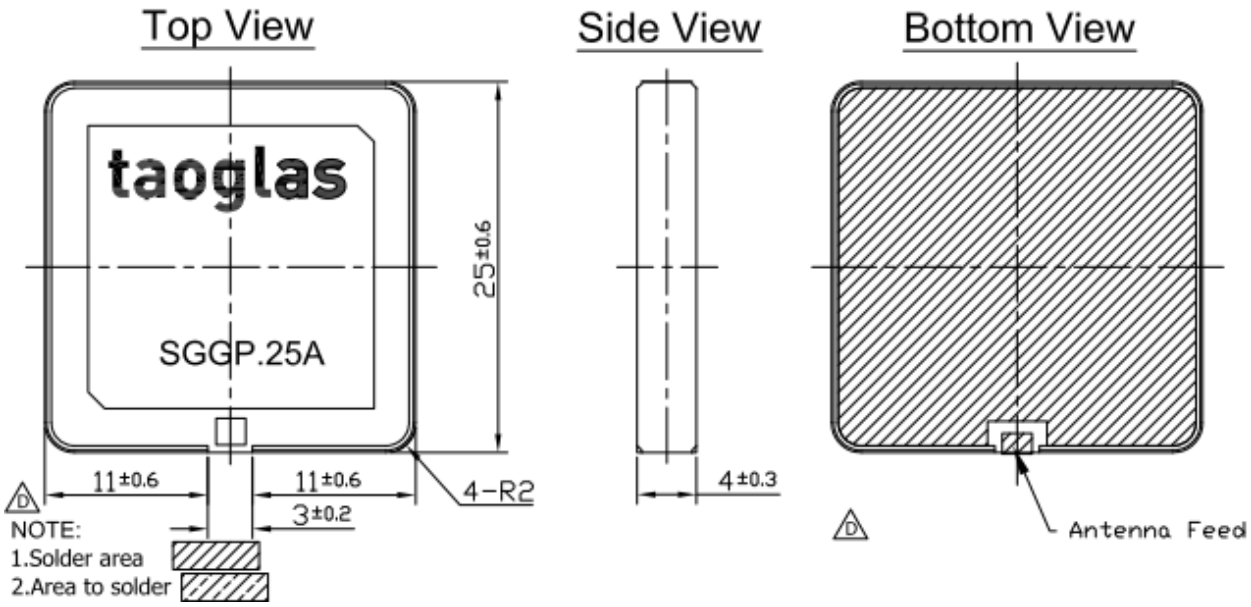


Pattern		Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1		SGGP.25	XZ	1602.00	2.88 / 355.00	-5.41 / 254.00	-0.65	V+H	2012/6/8
2		SGGP.25	YZ	1602.00	1.95 / 350.00	-8.76 / 249.00	-1.83	V+H	2012/6/8

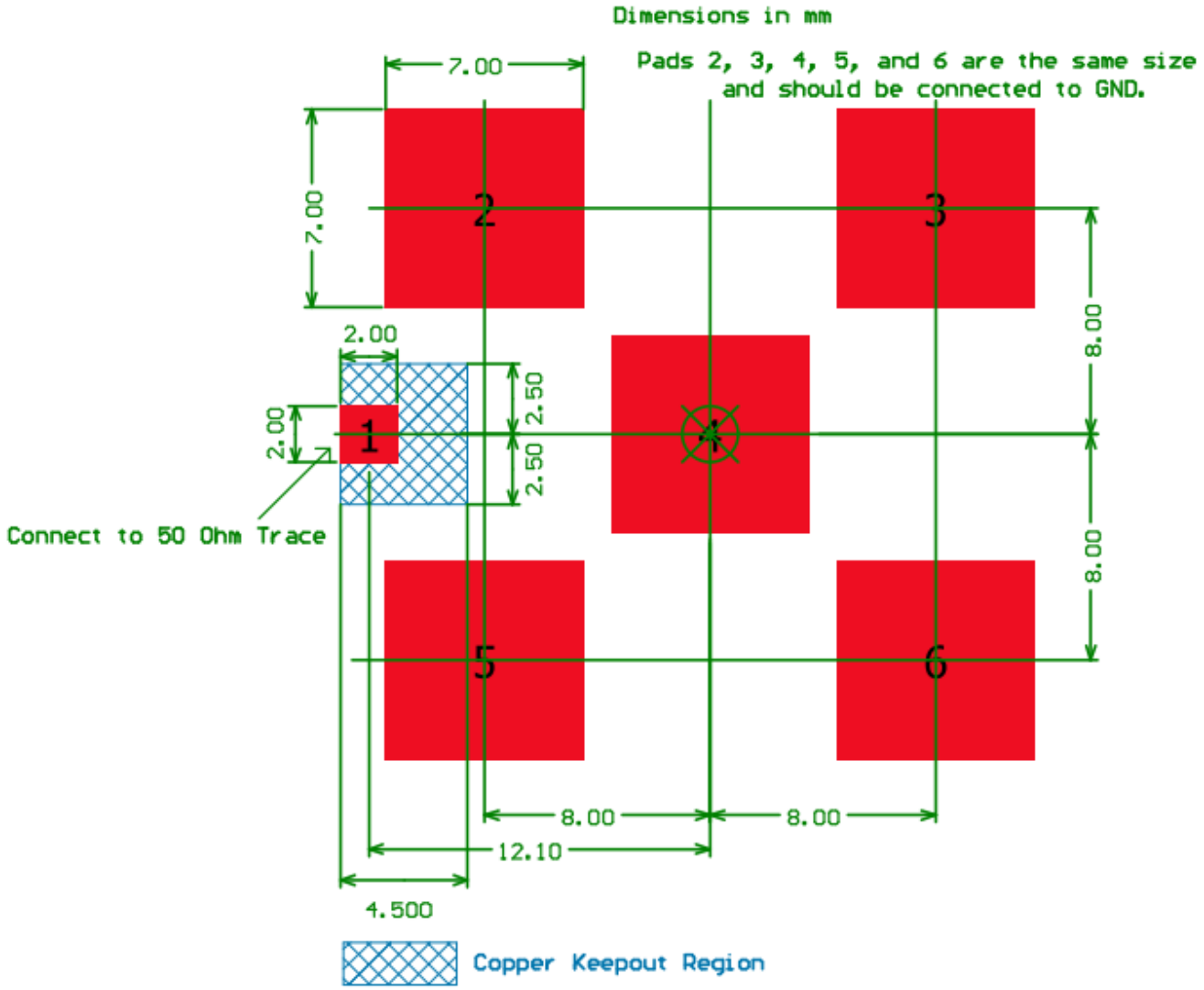
1602.0 MHz XZ+YZ-Plane

5. Mechanical Specifications

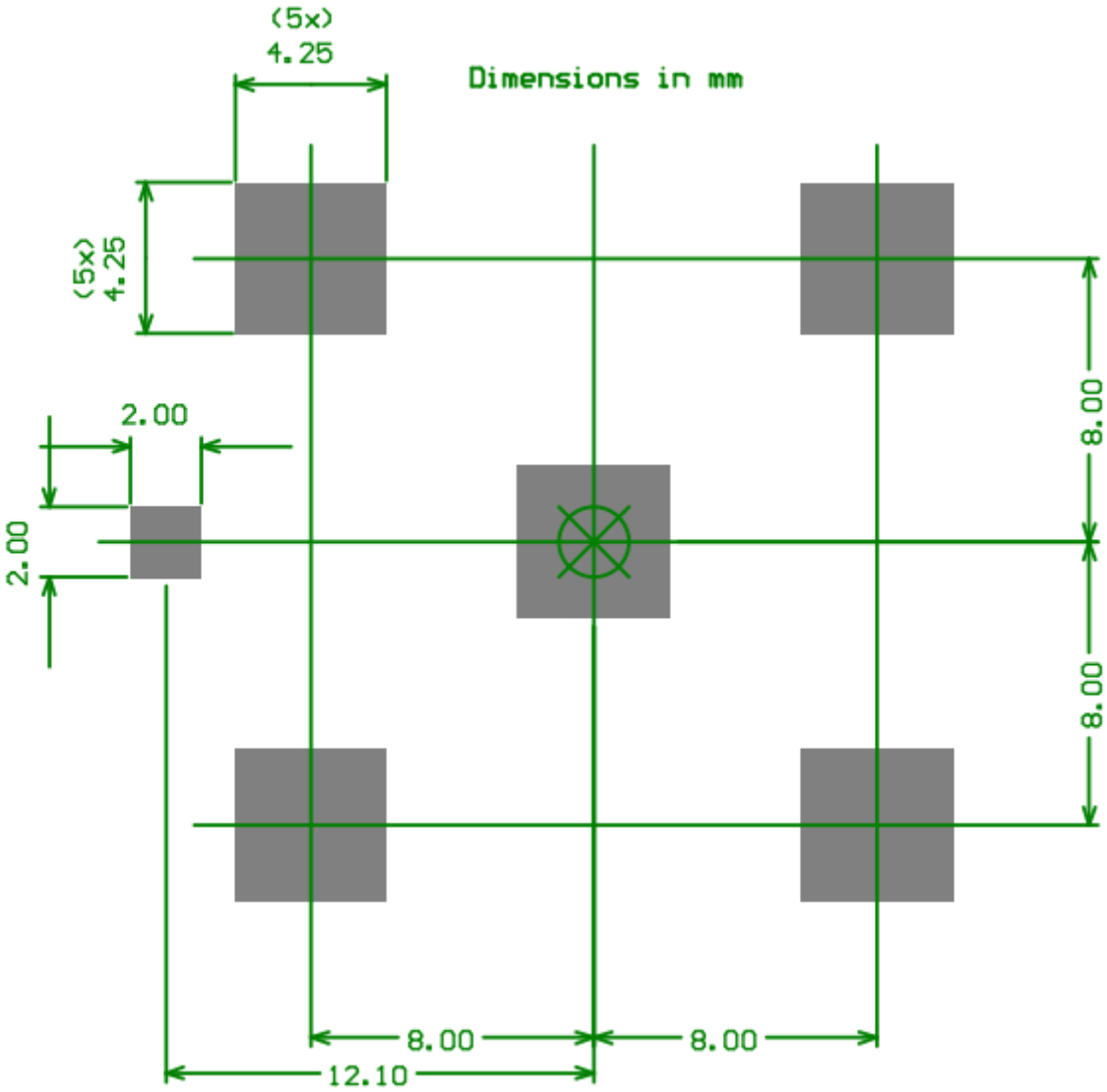
5.1. Antenna Dimensions and Drawing



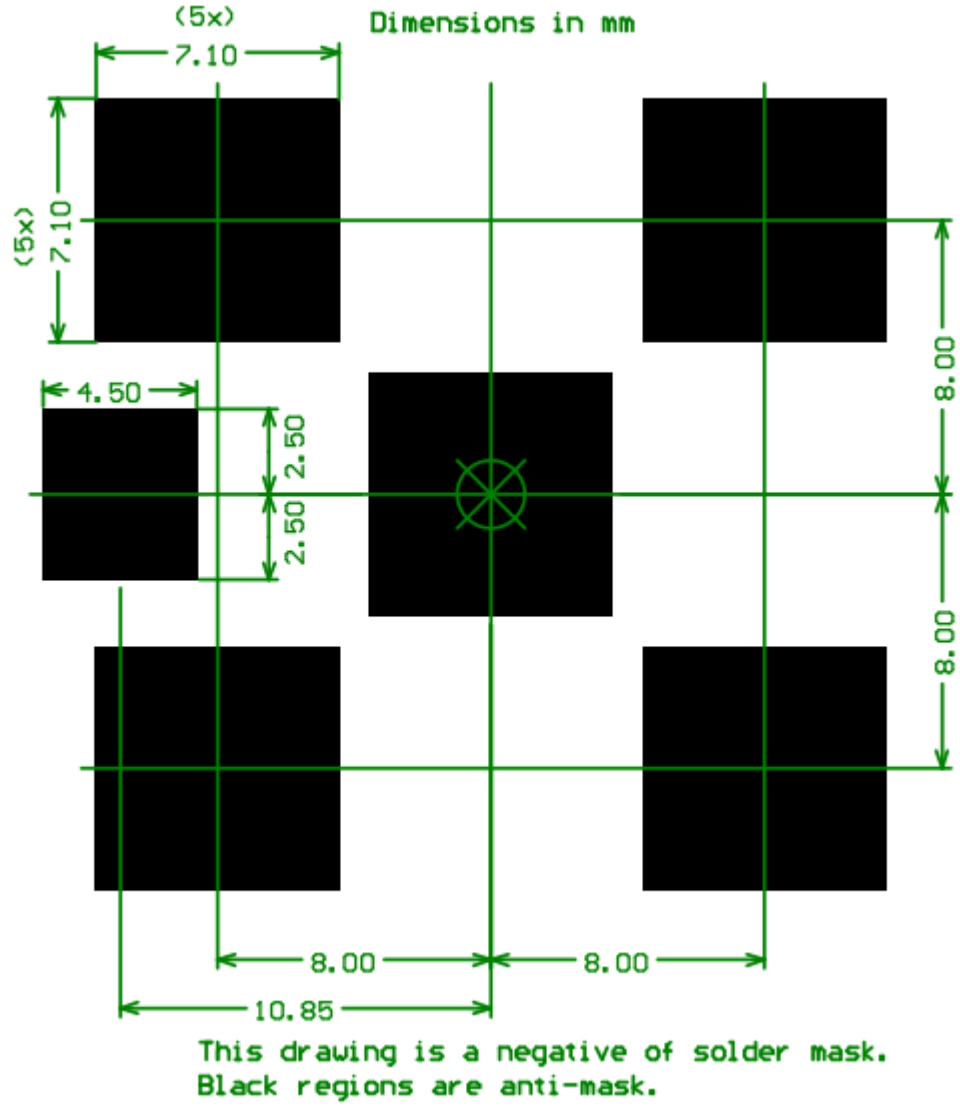
5.2. Footprint Copper Keepout Area



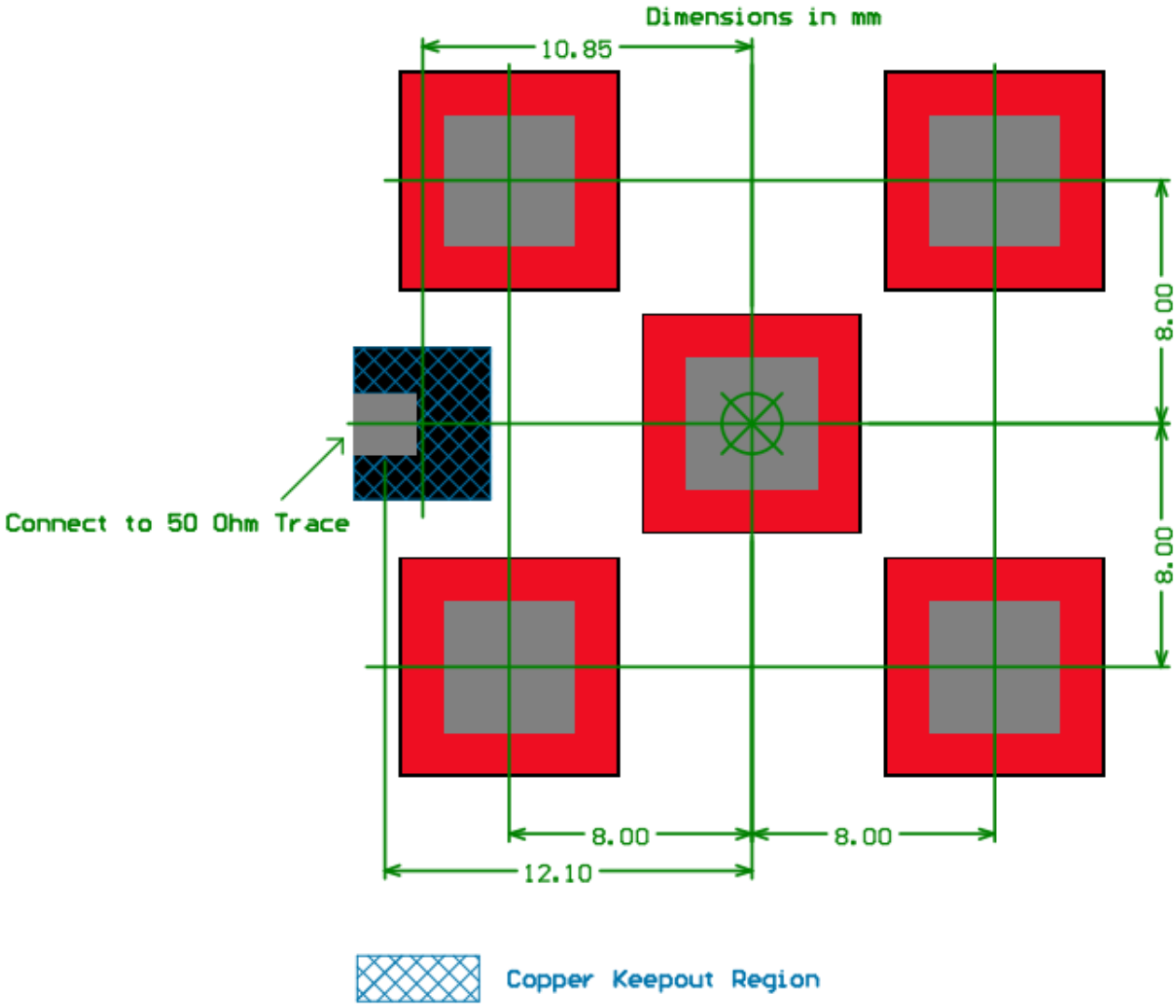
5.3. Paste Area



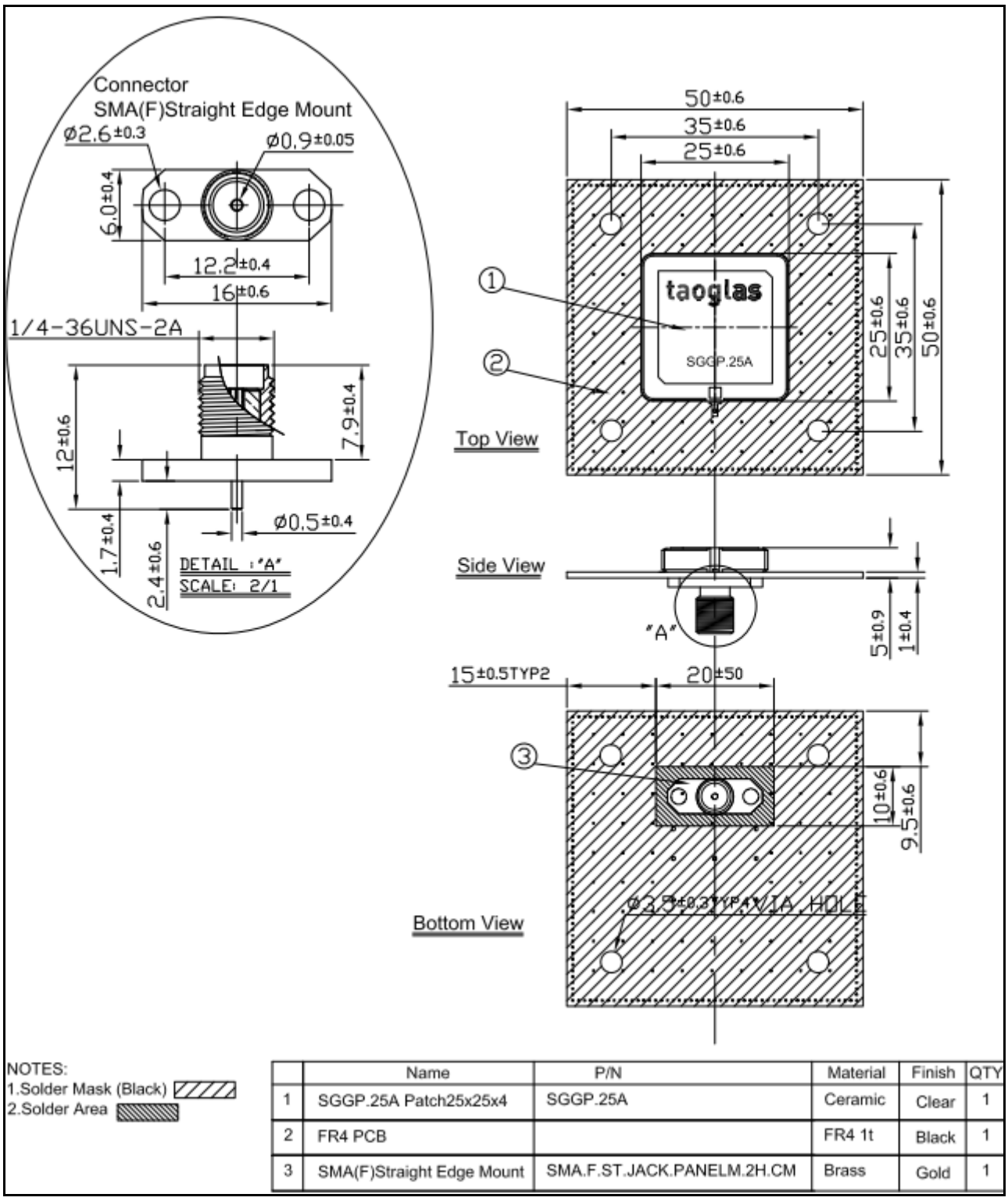
5.4. Soder Mask (Negative)



5.5. Footprint Composite



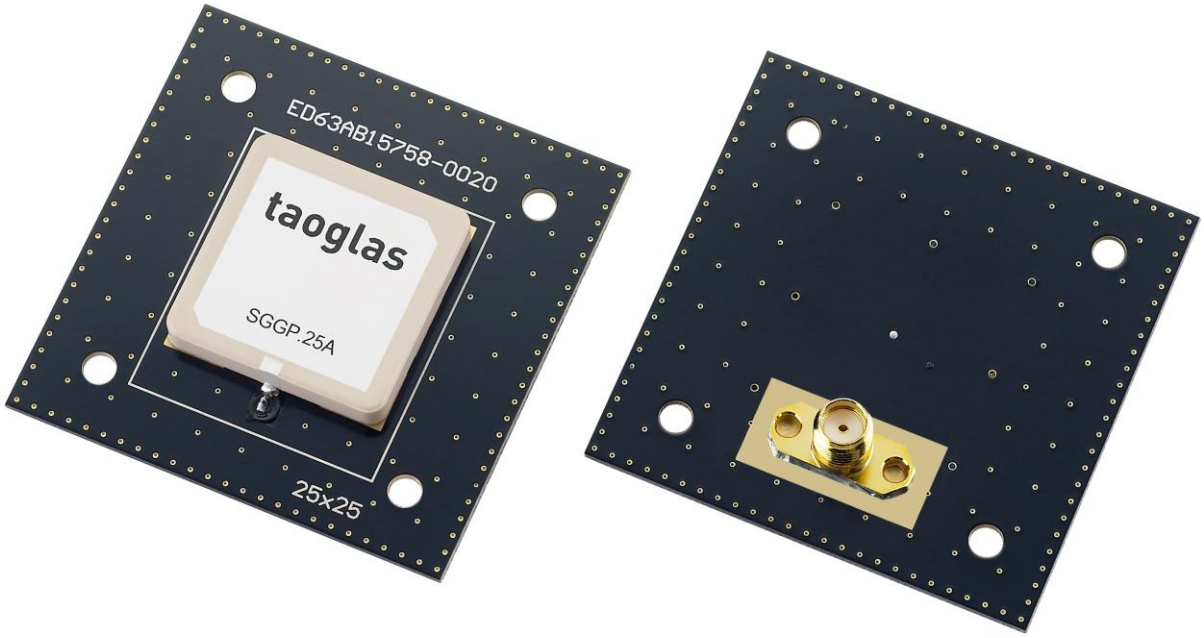
5.6. Test Jig and Dimension SGGPD.25A



NOTES:
1.Solder Mask (Black)
2.Solder Area

	Name	P/N	Material	Finish	QTY
1	SGGP.25A Patch25x25x4	SGGP.25A	Ceramic	Clear	1
2	FR4 PCB		FR4 1t	Black	1
3	SMA(F)Straight Edge Mount	SMA.F.ST.JACK.PANELM.2H.CM	Brass	Gold	1

5.7. SGGPD.25A

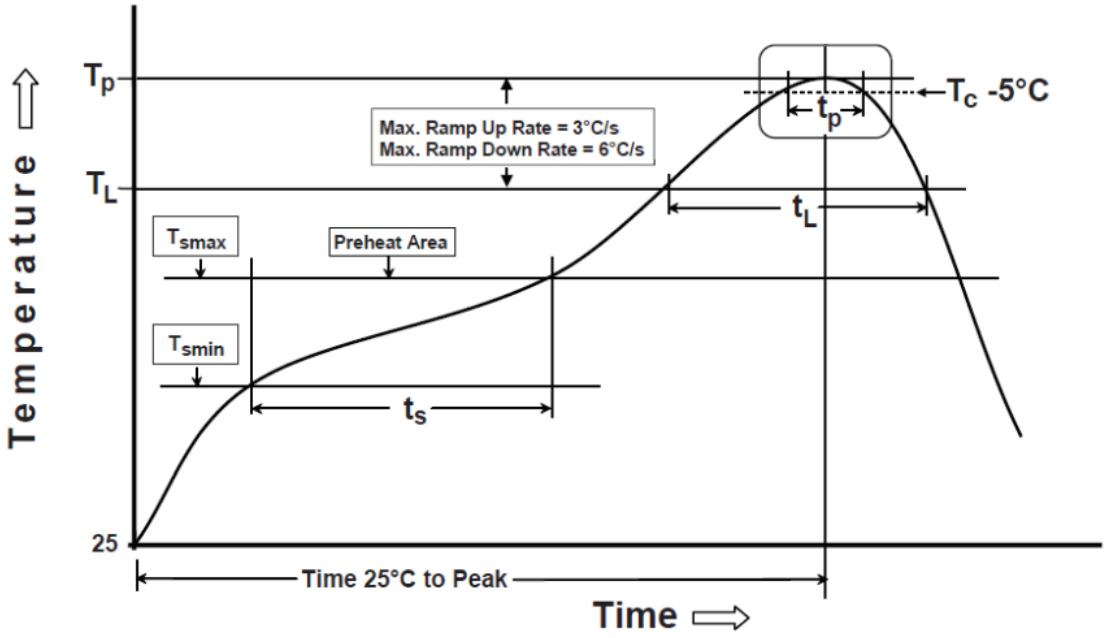


6. Recommended Reflow Soldering Profile

SGGP.25A 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)	150°C
	Temperature Max(Tsmax)	200°C
	Time(ts) from (Tsmin to Tsmax)	60-120 seconds
RAMP-UP	Avg. Ramp-up Rate (Tsmax to TP)	3°C/second(max)
REFLOW	Temperature(TL)	217°C
	Total Time above TL (tL)	30-100 seconds
PEAK	Temperature(TP)	260°C
	Time(tp)	2-5 seconds
RAMP-DOWN	Rate	3°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

The graphic shows temperature profile for component assembly process in reflow ovens



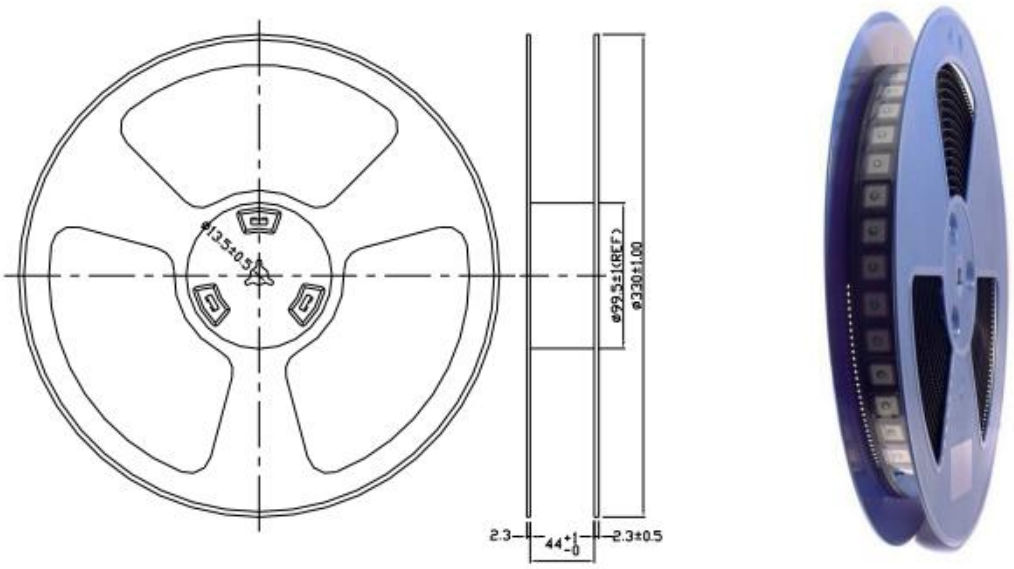
Soldering Iron condition: Soldering iron temperature 270°C±10°C.

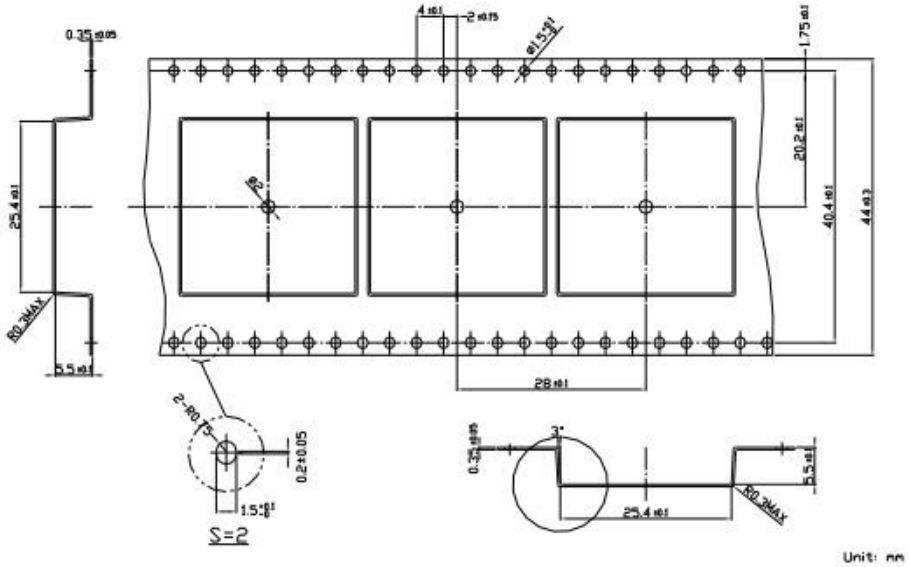
Apply preheating at 120°C for 2-3 minutes. Finish soldering for each terminal within 3 seconds, if soldering iron temperature over270°C±10°C or 3 seconds, it will make cause component surface peeling or damage.

7. Packaging

200 pcs / reel / inner carton

4 reels in an outer carton (800)





Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein.

Reproduction, use or disclosure to third parties without express permission is strictly prohibited.

Copyright © Taoglas Ltd.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Taoglas:
SGGP.25.4.A.02