

APPROVAL SHEET

OverAir™ SMD Antenna series
RoHS Compliance

PN: OA-C13

2.4GHz /5.8GHz Dual-band Antenna

FEATURES

1. Surface Mounted Devices (SMD) with a small dimension of 3.00 X 2.00 X 3.30 mm³ meet miniaturization trend.
2. Low power loss and high antenna efficiency.
3. High stability in Temperature and Humidity Change.

APPLICATIONS

1. 2.4G/5G WIFI band RF applications
2. Bluetooth, ZigBee, Wireless, HomeRF

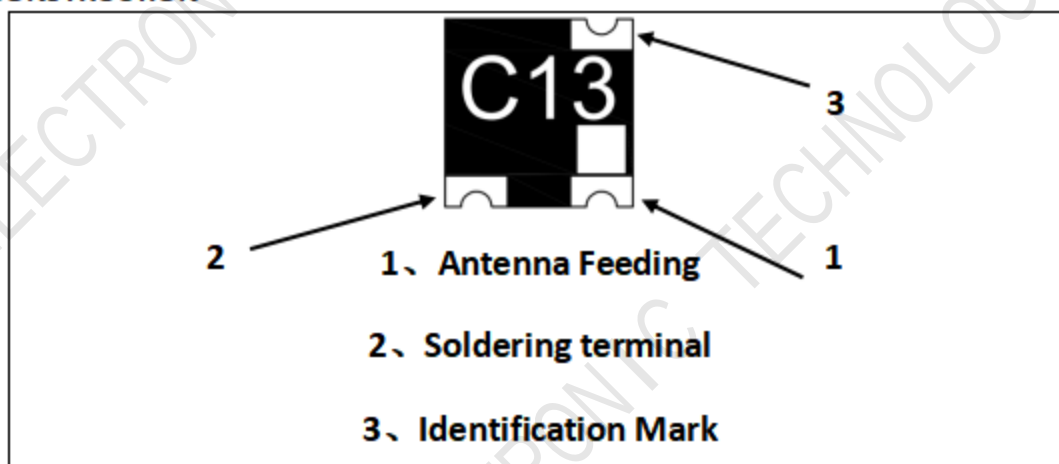
CONSTRUCTION**DIMENSIONS**

Figure	Symbol	Dimension(mm)
	L	3.00 ± 0.20
	w	2.00 ± 0.20
	T	3.30 ± 0.20
	WB	1.00 ± 0.20

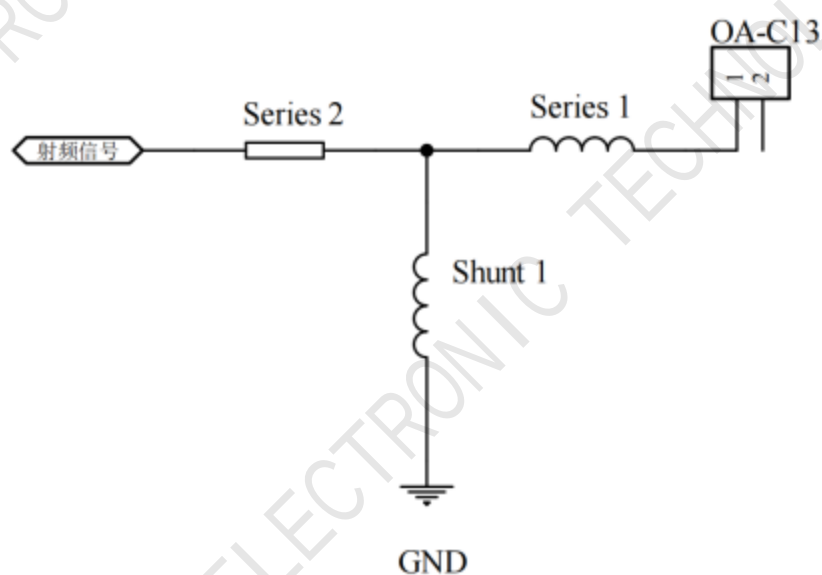
ELECTRICAL CHARACTERISTICS

OA-C13	Specification
Working Frequency	2400-2500MHz、 5200-5800MHz
Impedance	50 Ω
Gain(dBi)	2.93@2.4GHz、 4.88@5.8GHz
VSWR	<3
Operation Temperature	-40℃~+85℃
Power Capacity	3W

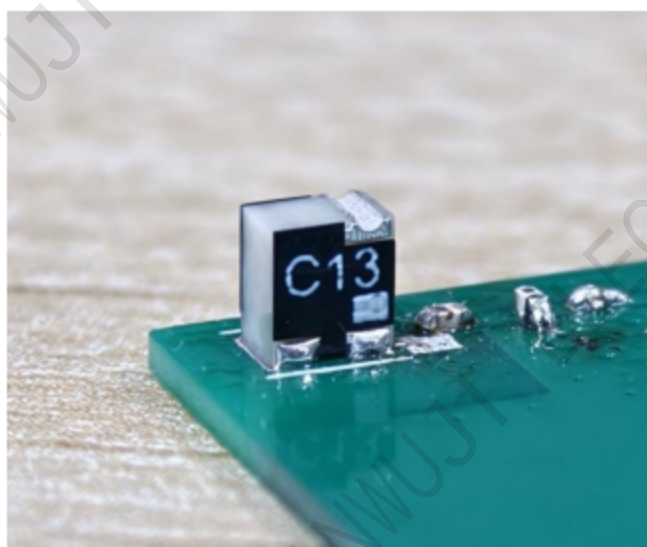
The working frequency need be adjusted to 2.45GHz with matching circuit.

SOLDER LAND PATTERN DESIGN

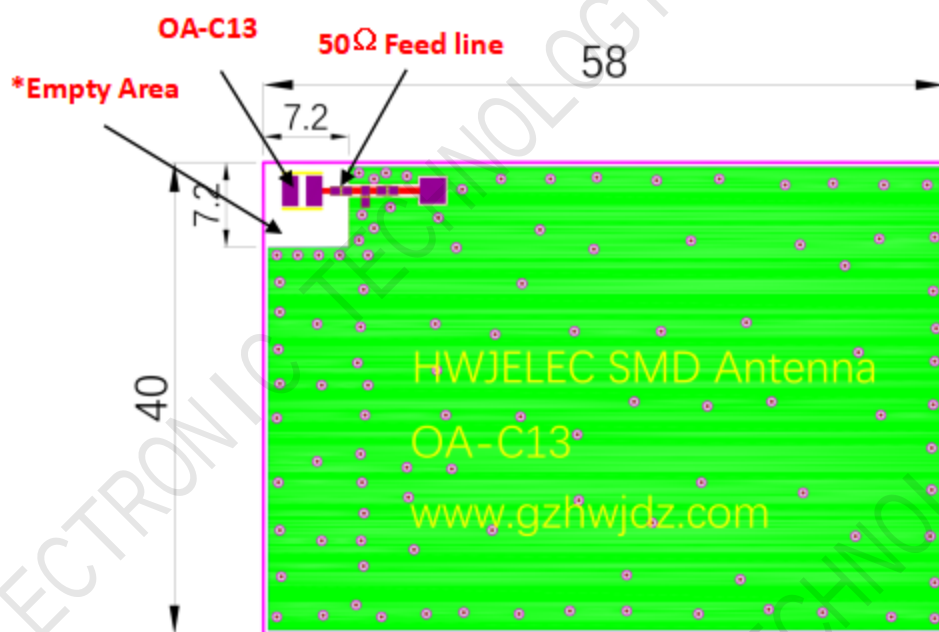
Figure



Antenna Welding Diagram



PCB Design



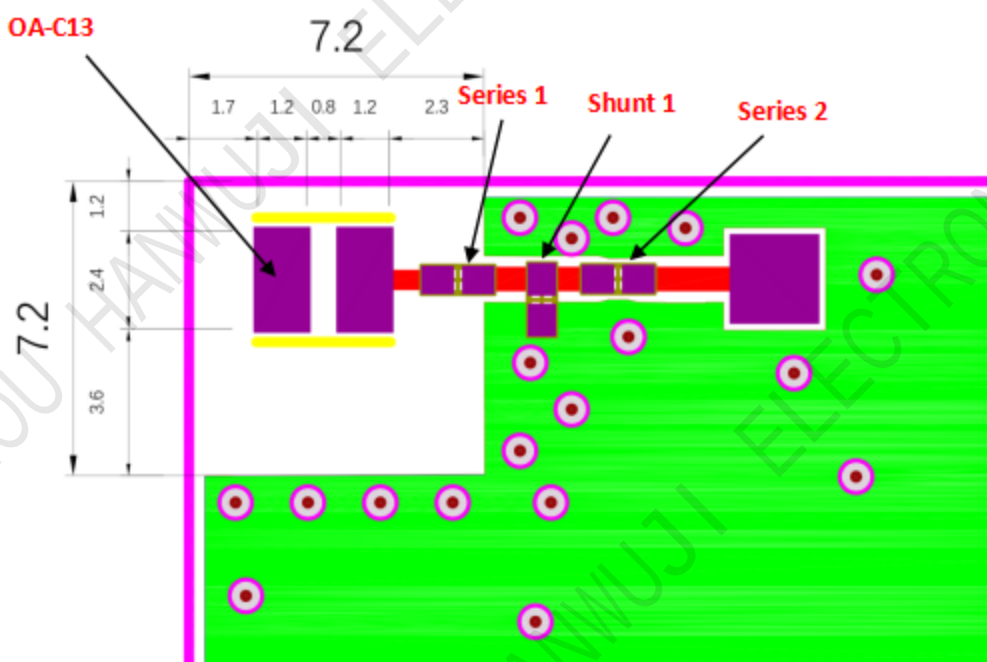
Unit : mm

- Ground
- 50Ω Transmission line
- Soldering Pad

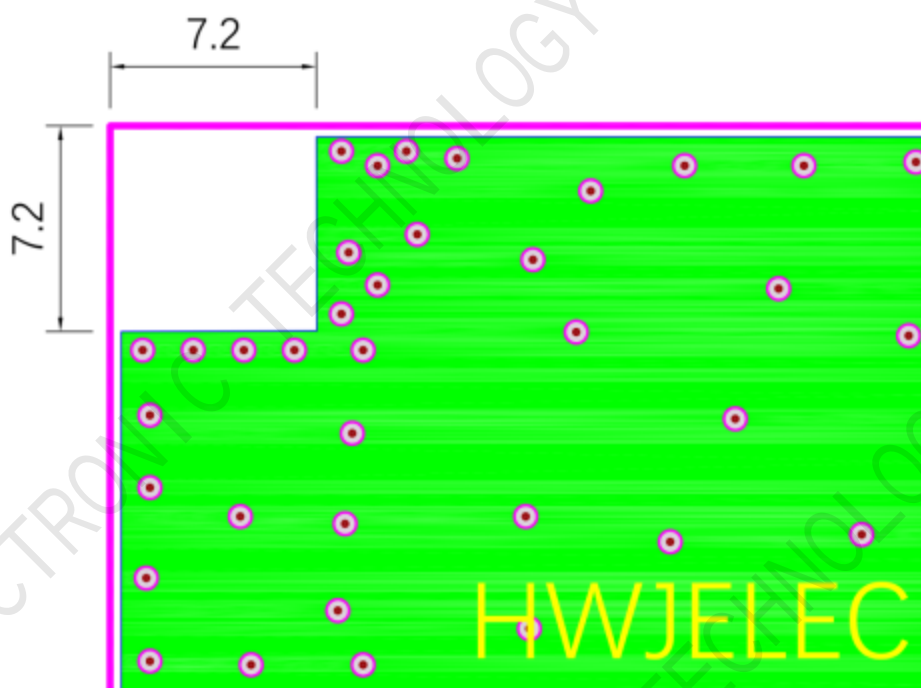
*Empty Area: 7.2mm*7.2mm

**50Ω Feed line

TOP (unit:mm) :



BOT (unit:mm) :



Matching component value

Series 1

0Ω

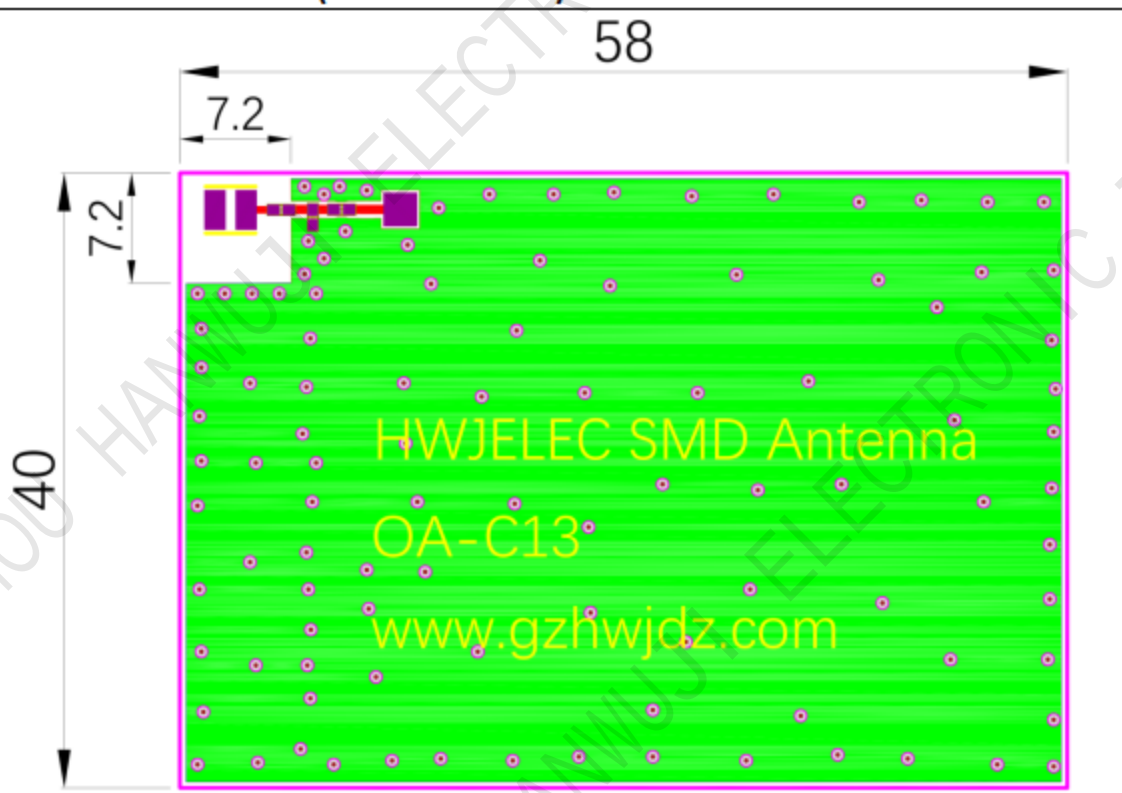
Shunt 1

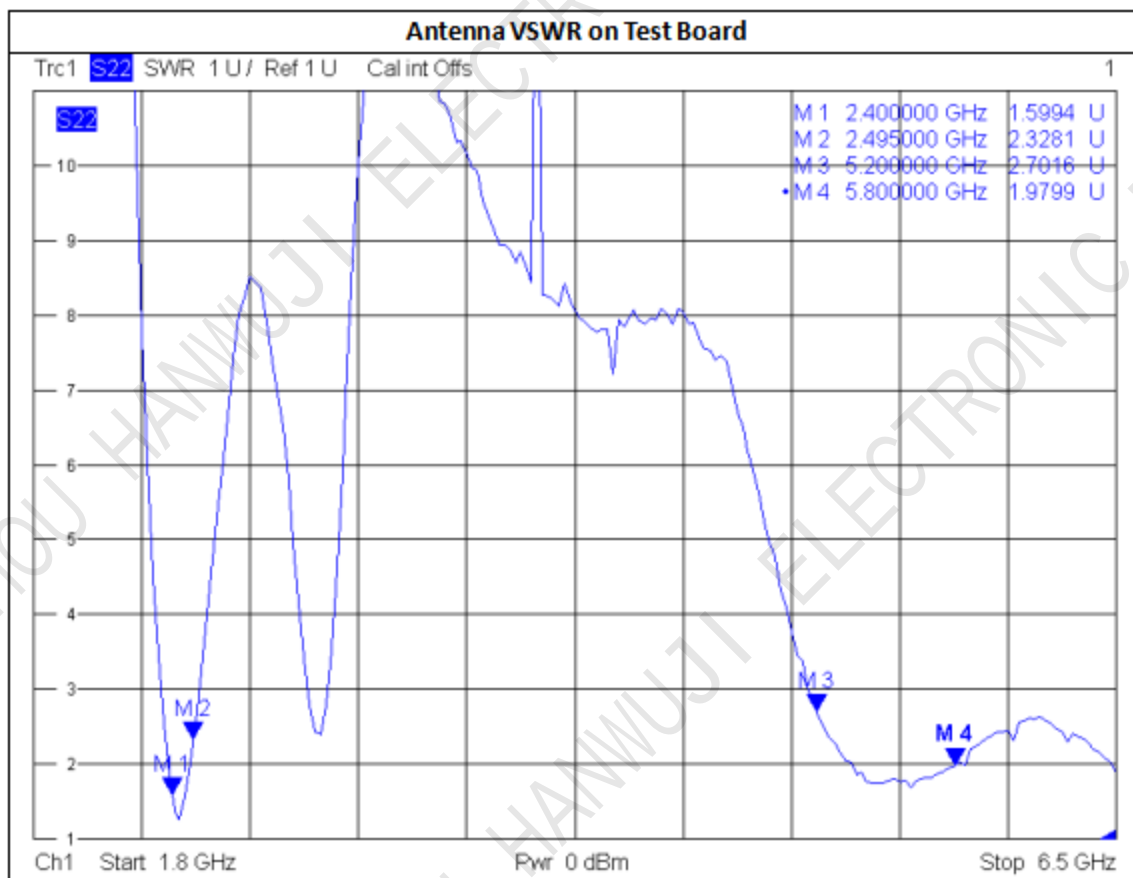
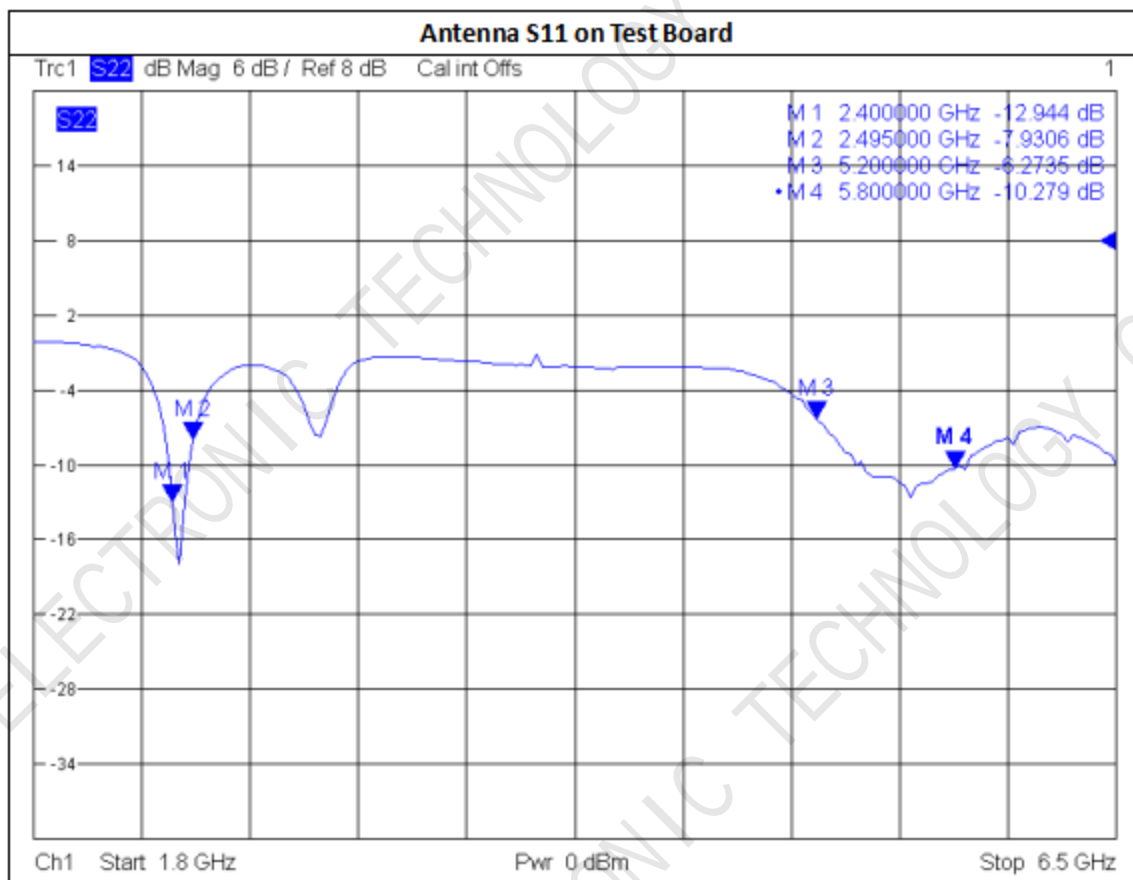
2.7nH

Series 2

0.75pF

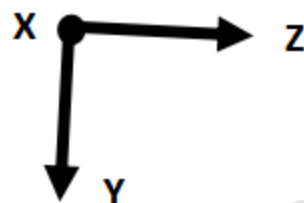
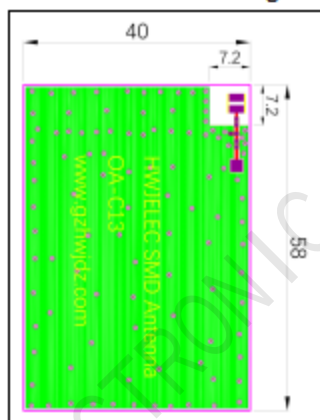
Antenna on Test Board (Thickness 1.0mm)





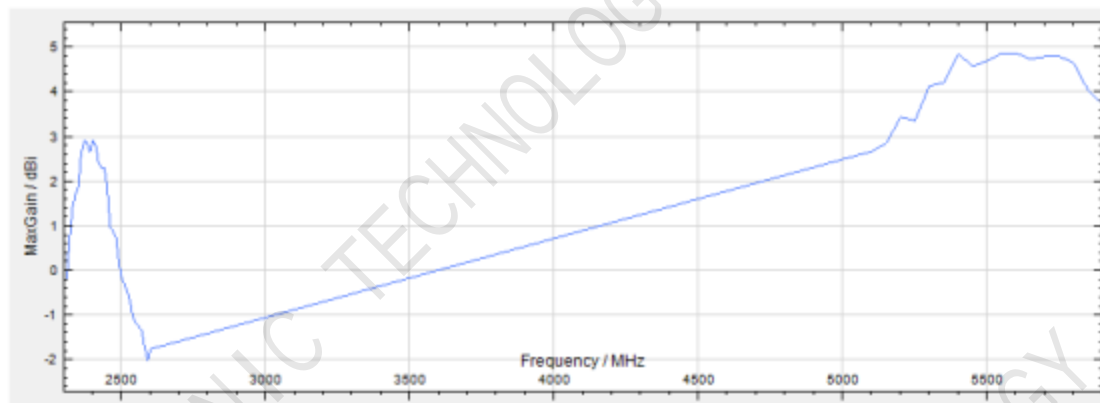
Efficiency and RADIATION PATTERN

Efficiency, Radiation Pattern and Gain were dependent on measurement board design. The specification of OA-C13 antenna was measured based on the PCB size and installation position as shown in the below figure test board. The test results were tested in ETS 3D Chamber.

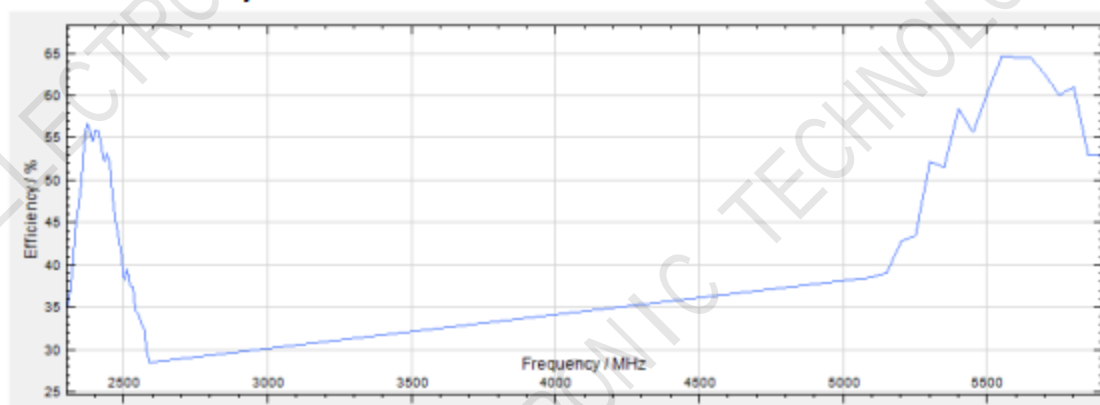
**Gain and Efficiency**

Frequency/MHz	MaxGain/dBi	Efficiency / %
2400	2.93	55.98
2410	2.82	55.98
2420	2.43	54.2
2430	2.3	52.24
2440	2.32	53.21
2450	1.87	52.24
2460	1	47.97
2470	0.88	45.29
2480	0.76	43.45
2490	0.22	41.4
2500	-0.16	38.28
5200	3.45	42.85
5250	3.37	43.55
5300	4.15	52.24
5350	4.22	51.64
5400	4.86	58.48
5450	4.59	55.72
5500	4.71	60.39
5550	4.88	64.71
5600	4.88	64.57
5650	4.75	64.57
5700	4.8	62.52
5750	4.81	60.12
5800	4.66	61.09

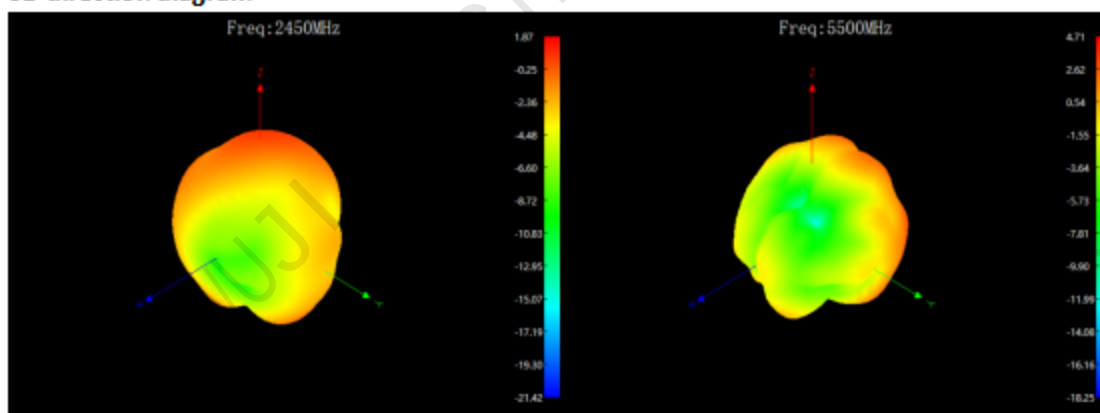
Antenna Gain



Antenna Efficiency

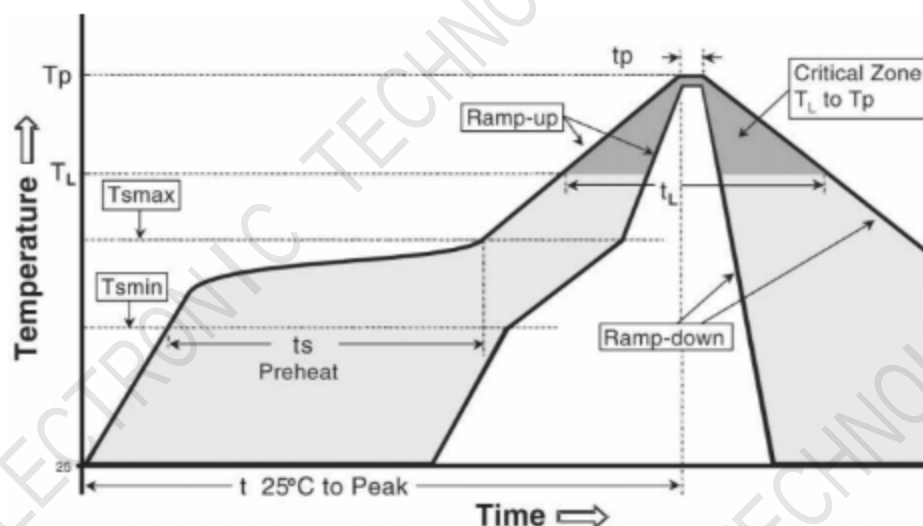


3D direction diagram



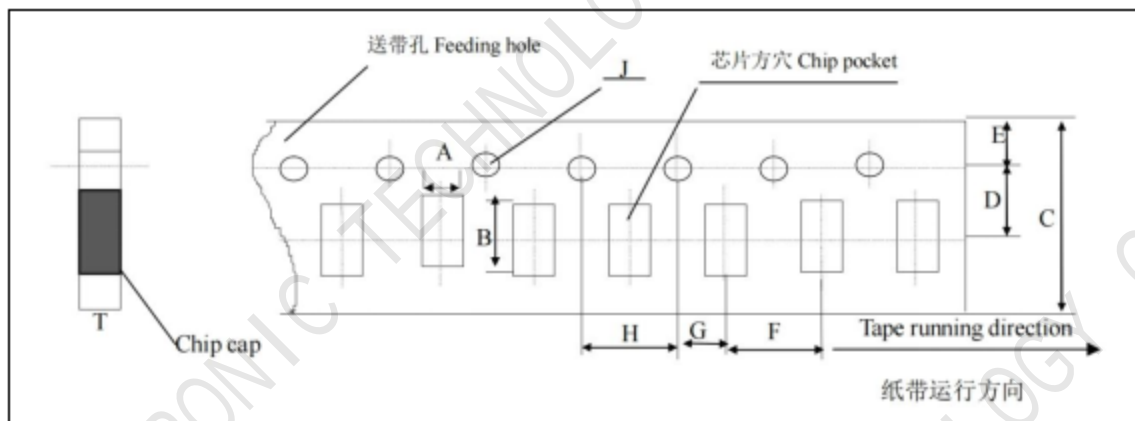
SOLDERING CONDITION

Typical examples of soldering processes that provide reliable joints without any damage is as follows:



Phase	Profile features	Pb-Free assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate (Tsmax to Tp)	3 °C / second (max.)
PREHEAT	- Temperature Min (Tsmín) - Temperature Max (Tsmáx) - Time (tsmín to ts máx)	150 °C 200 °C 60-180 seconds
REFLOW	- Temperature (TL) - Total Time above TL (tL)	217 °C 60-150 seconds
PEAK	- Temperature (Tp) - Time (tp)	260 °C 20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max

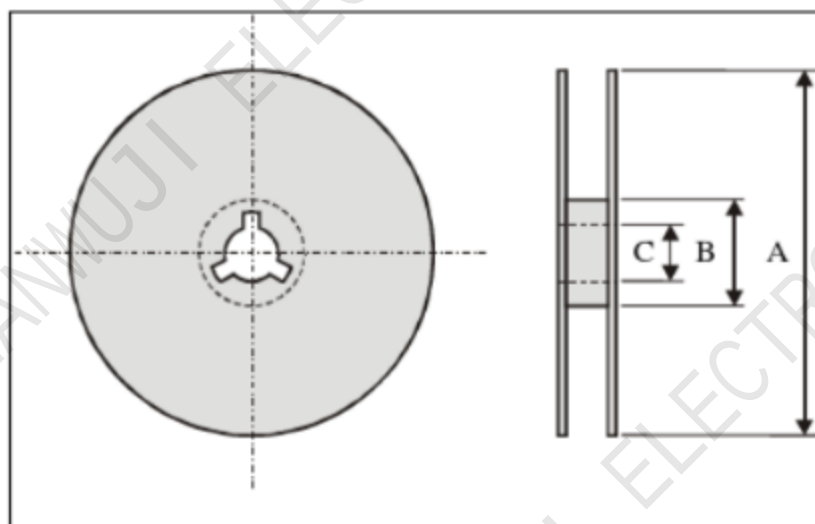
PACKAGING



Plastic Tape specification (unit:mm)

Index	A	B	C	D	J
Dimension (mm)	3.50 ± 0.10	4.50 ± 0.1	12.00 ± 0.10	5.20 ± 0.05	$1.500/+0.10$
Index	E	F	G	H	T
Dimension (mm)	1.75 ± 0.10	8.00 ± 0.1	4.00 ± 0.10	8.00 ± 0.10	1.10Max

Reel dimensions



Index	A	B	C
Dimension(mm)	330	100	13.5

Typing Quantity: 2000 pieces per reel.

CAUTION OF HANDLING**Storage environment condition**

Products should be storage in the warehouse on the following conditions:

Temperature : -10℃~+40℃

Humidity : 30% to 70% relative humidity

Don't keep products in corrosive gases such as sulfur. Chlorine gas or acid or it may cause oxidization of electrode, resulting in poor solderability.

Products should be storage on the palette for the prevention of the influence from humidity, dust and so on.

Products should be storage in the warehouse without heat shock, vibration, direct sunlight and so on.

Products should be storage under the airtight packaged condition.

Contact Us

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