

APPROVAL SHEET

OverAir™ SMD Antenna series
RoHS Compliance

PN:OA-SUS1403

2.4GHz bands antenna

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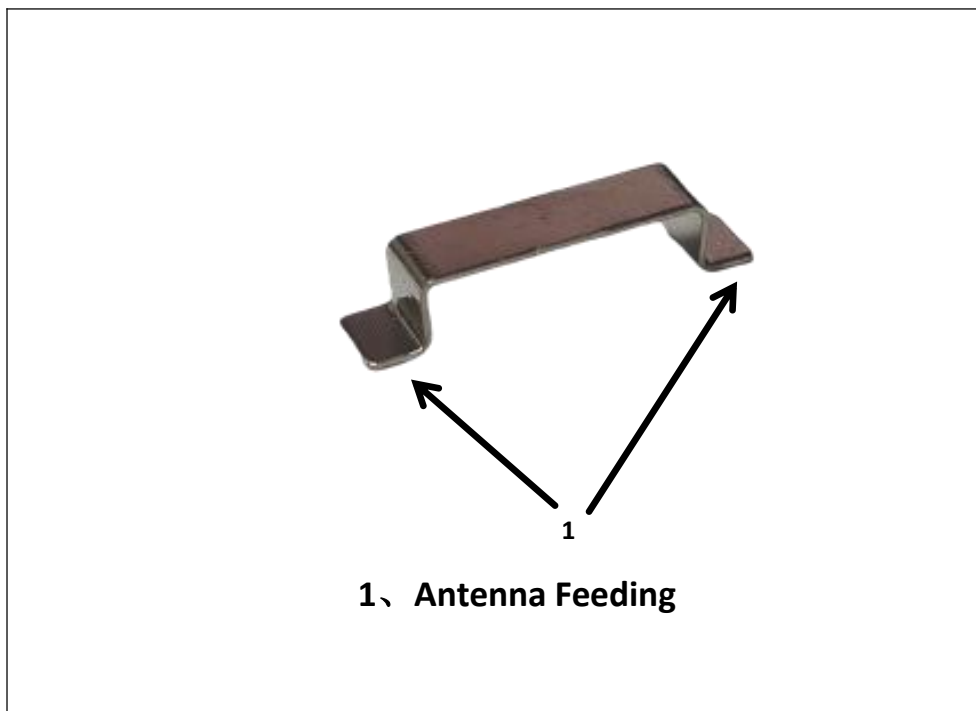
FEATURES

1. Surface Mounted Devices (SMD) with a small dimension of $14.4 \times 3 \times 3 \text{ mm}^3$ meet miniaturization trend.
2. Low power loss and high antenna efficiency.
3. High stability in Temperature and Humidity Change.

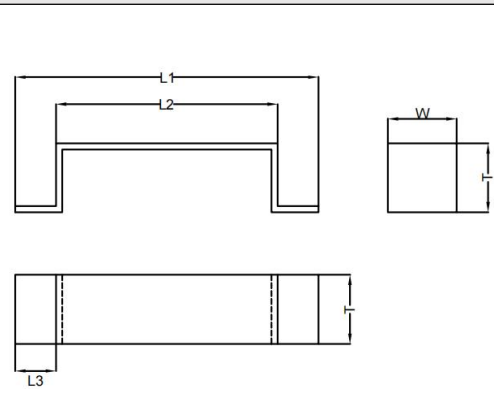
APPLICATIONS

1. 2.4GHz ISM band RF applications
2. WIFI (2.4GHz only)
3. Bluetooth, ZigBee, Wireless, HomeRF

CONSTRUCTION



DIMENSIONS

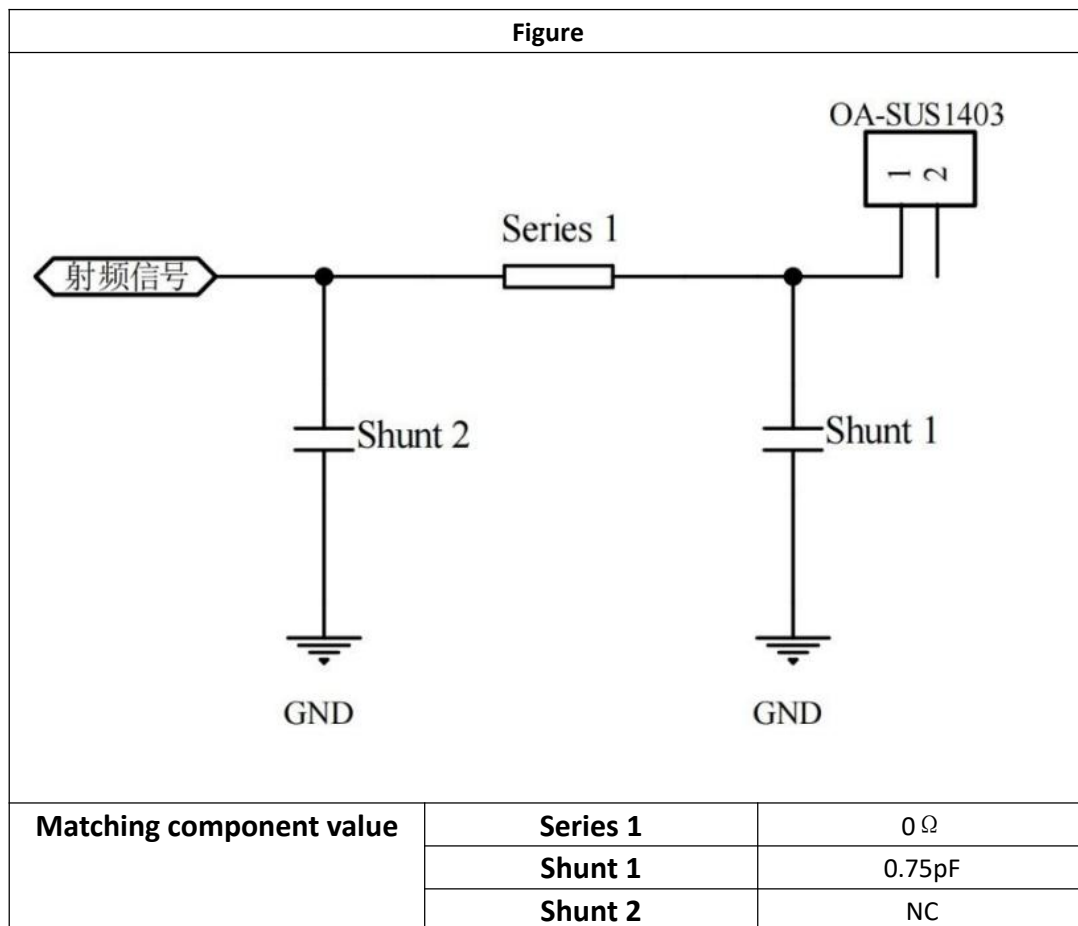
Figure	Symbol	Dimension(mm)
	L1	14.4 ± 0.3
	L2	10.7 ± 0.3
	L3	2.3 ± 0.3
	W	3.0 ± 0.3
	T	3.0 ± 0.3

ELECTRICAL CHARACTERISTICS

OA-SUS1403	Specification
Working Frequency Range	$2450 \pm 50\text{MHz}$
Band Width	$>100\text{MHz}$
Impedance	$50\ \Omega$
Gain(dBi)	5.47(peak)
VSWR	<2
Operation Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Power Capacity	10W

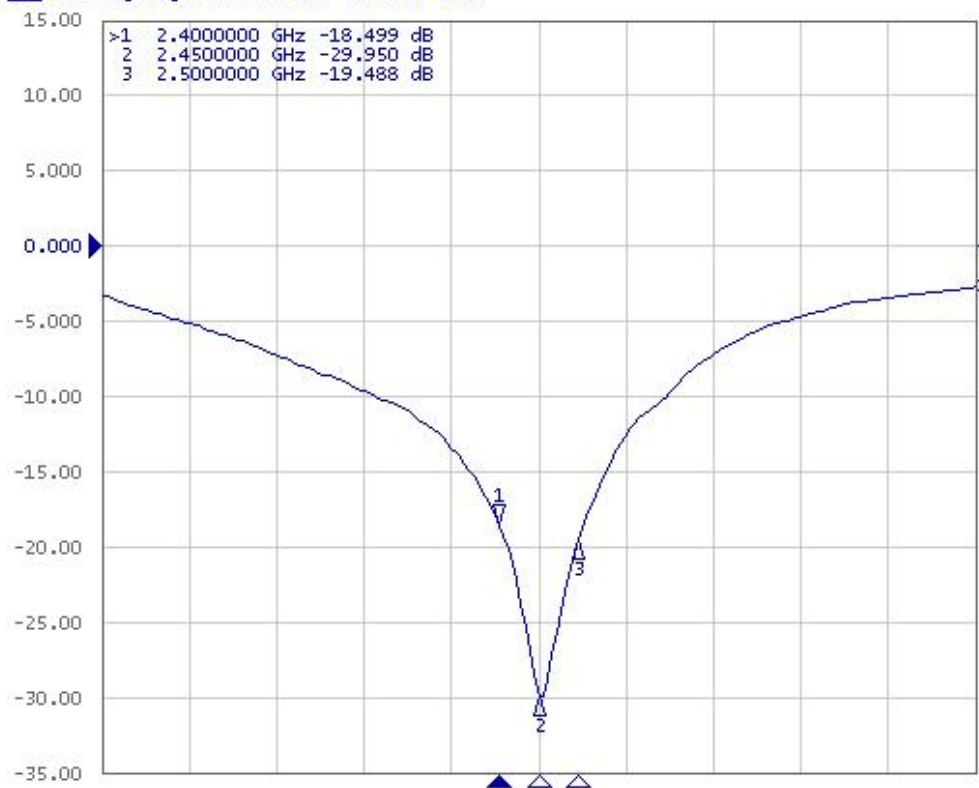
The working frequency need be adjusted to 2.45GHz with matching circuit.

SOLDER LAND PATTERN DESIGN



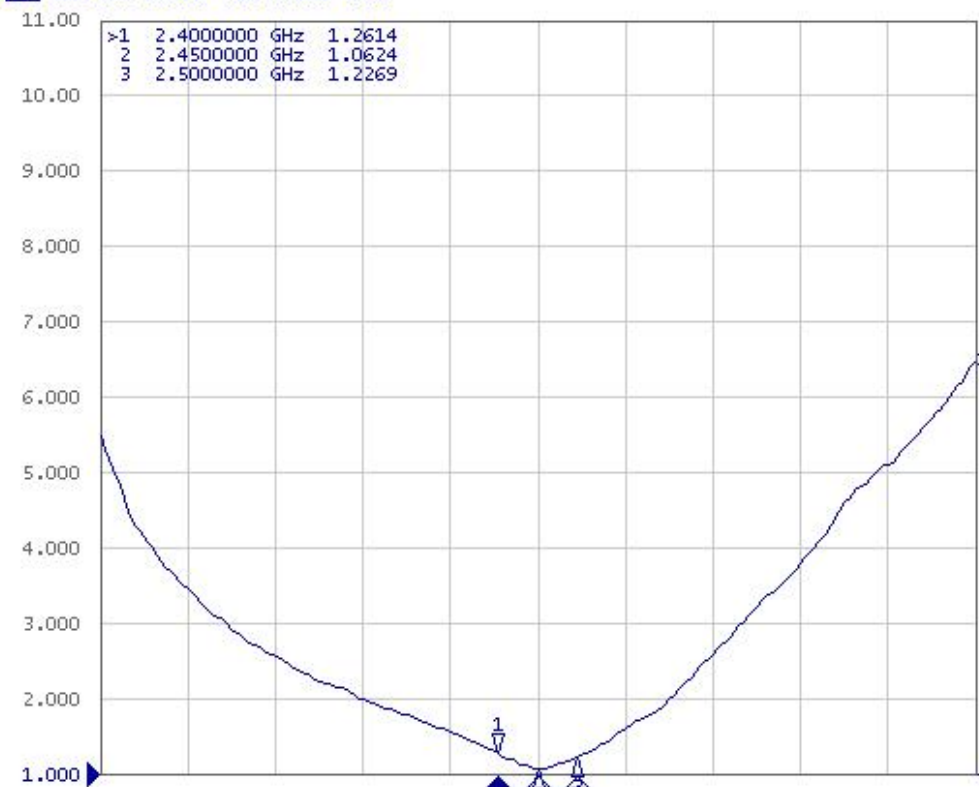
Antenna S11 on Test Board

Tr1 S22 Log Mag 5.000dB/ Ref 0.000dB [F1]



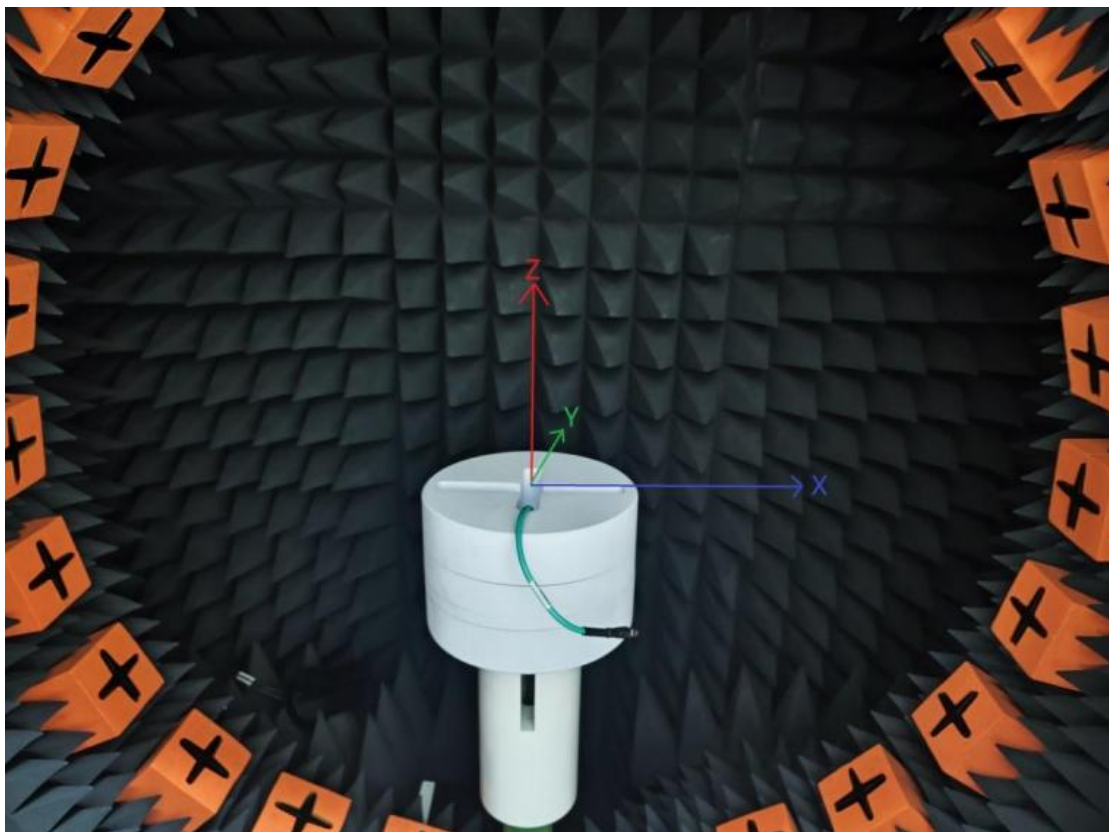
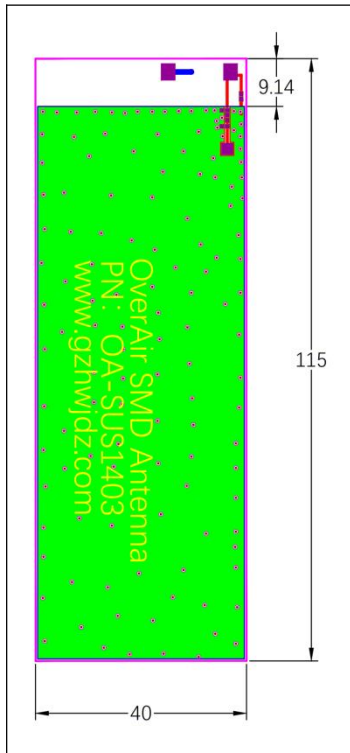
Antenna VSWR on Test Board

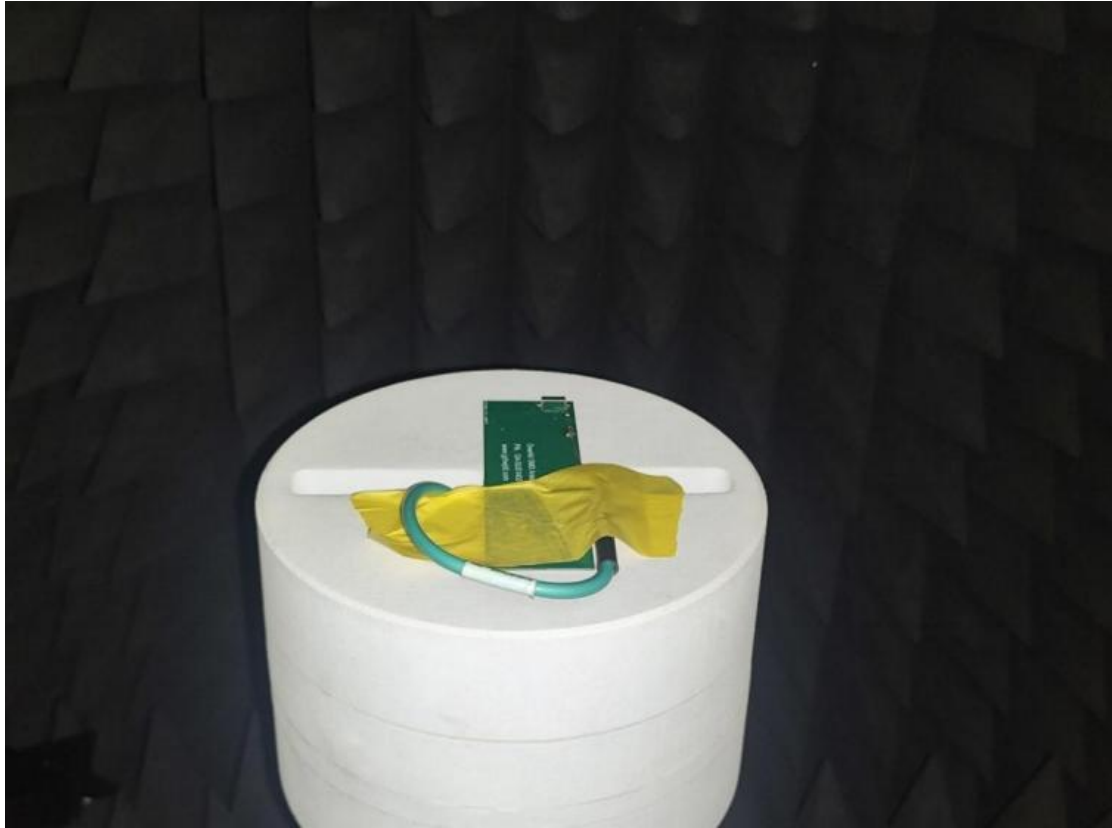
Tr1 S22 SWR 1.000/ Ref 1.000 [F1]



Efficiency and RADIATION PATTERN

Efficiency, Radiation Pattern and Gain were dependent on measurement board design. The specification of OA-SUS1403 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.

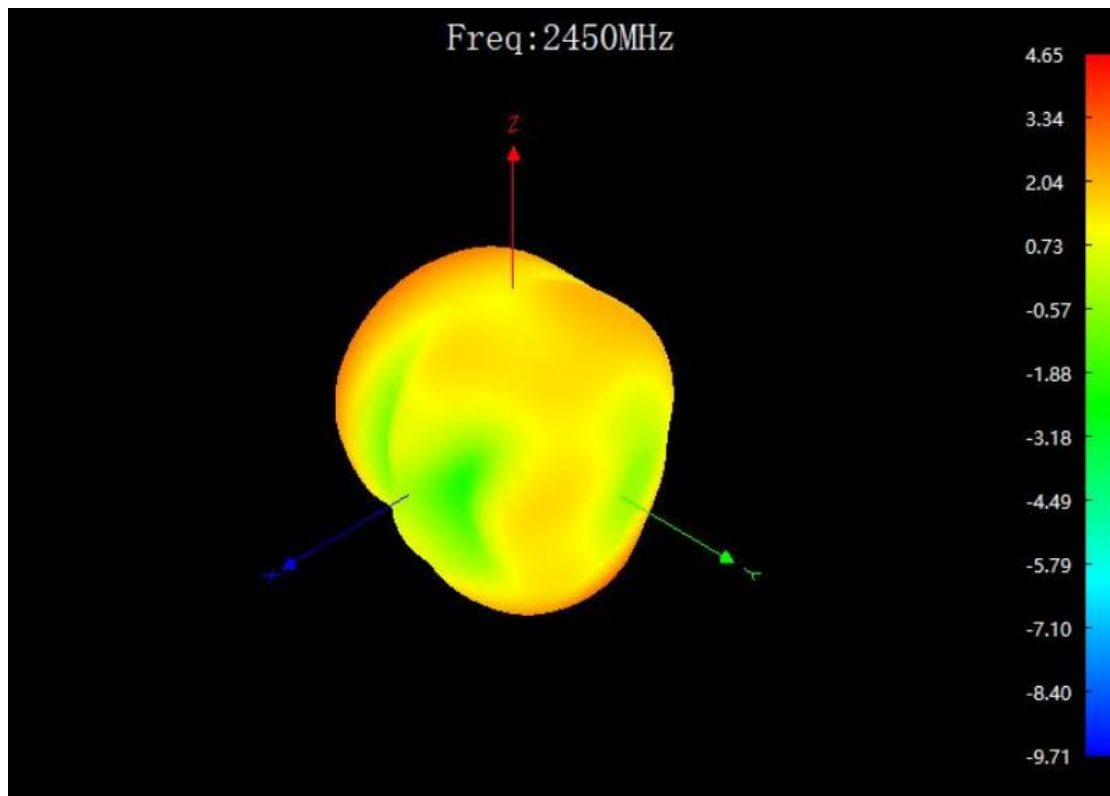




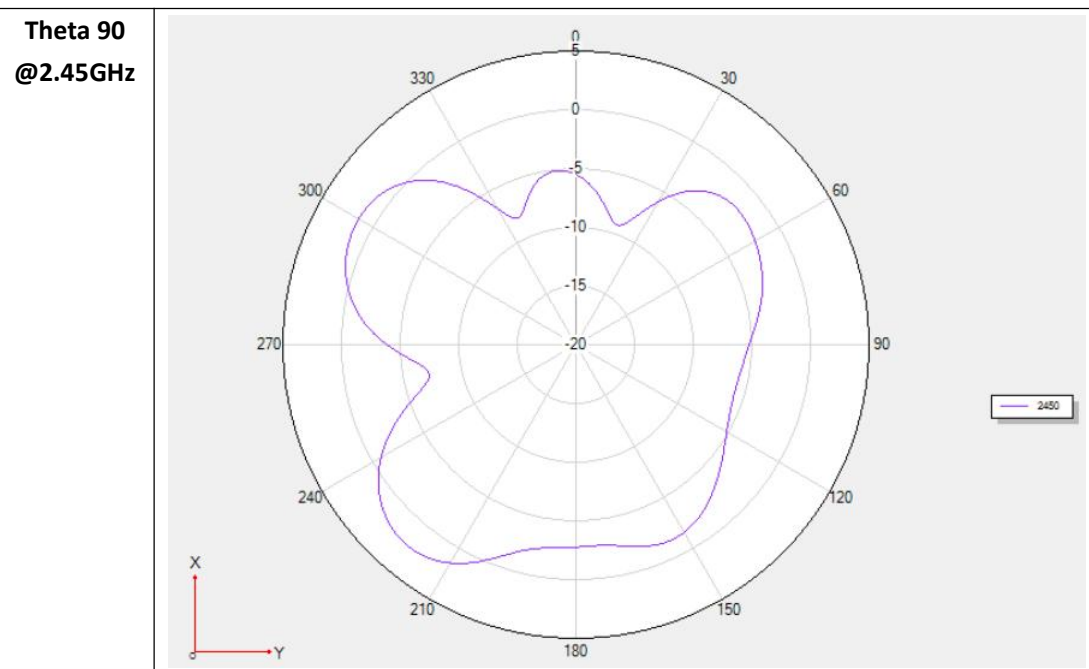
Gain and Efficiency

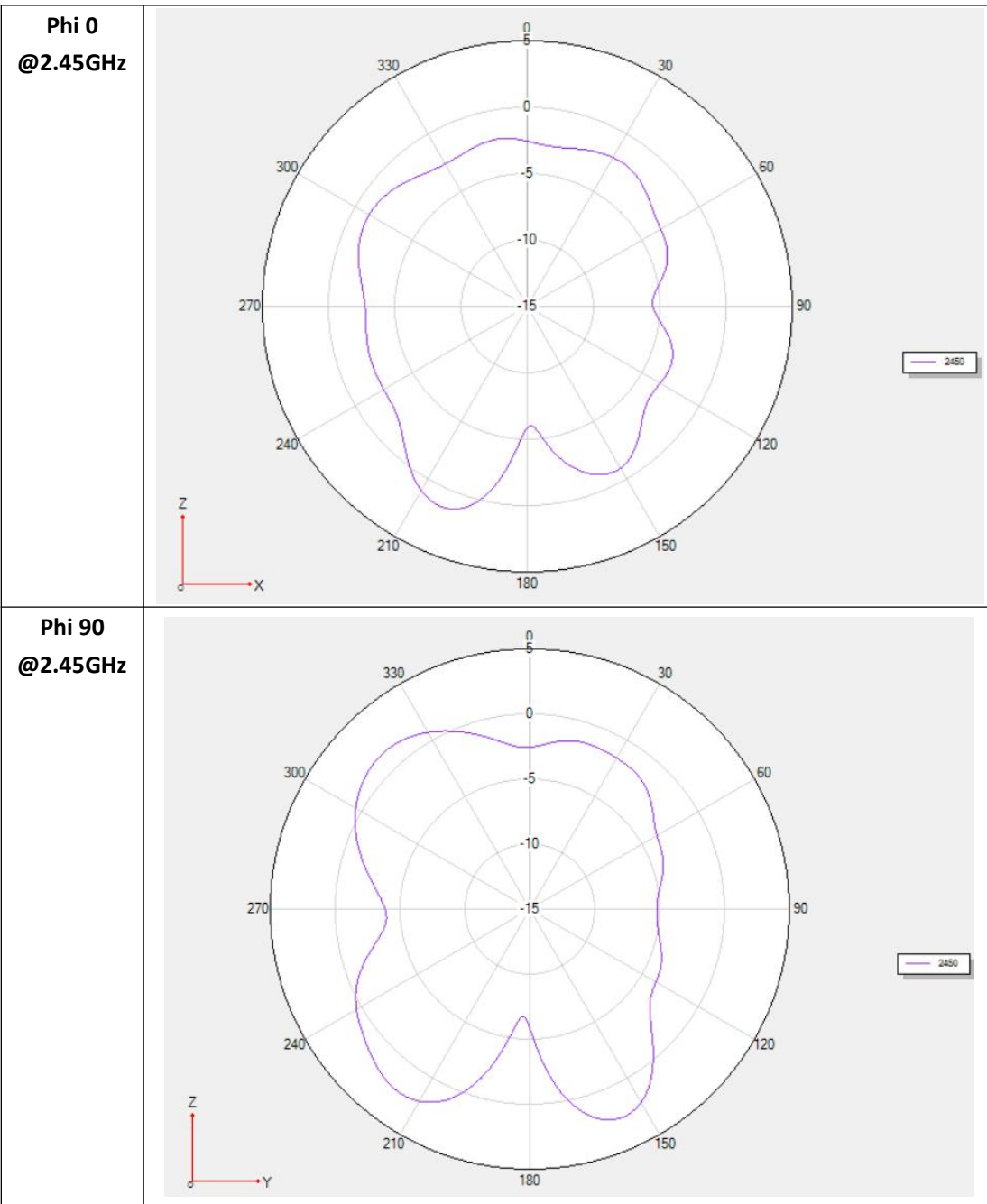
Frequency/MHz	MaxGain/dBi	Efficiency/%
2400	5.47	94.41
2410	5.39	92.68
2420	5.18	89.13
2430	5	84.92
2440	5.12	87.9
2450	4.65	88.31
2460	3.99	82.6
2470	3.94	81.66
2480	4.07	81.28
2490	3.53	80.54
2500	2.71	74.82

3D Pattern



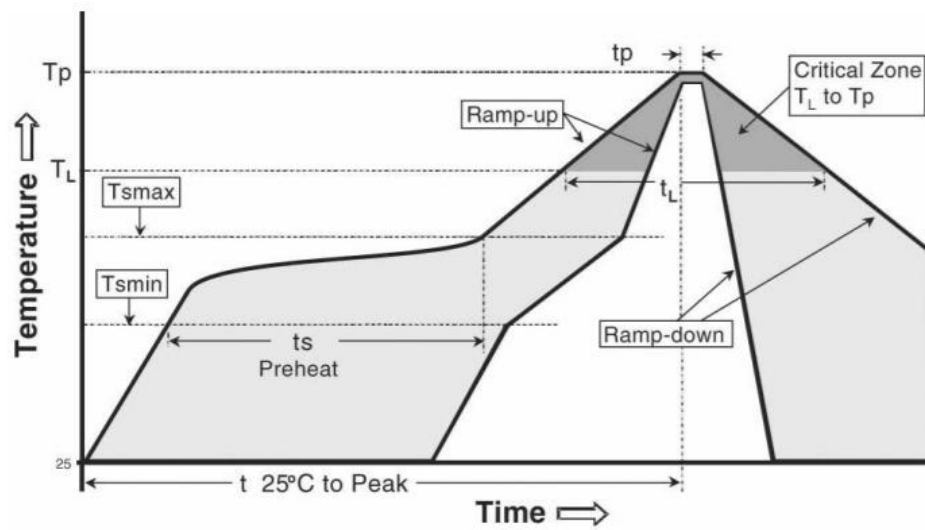
2D Pattern





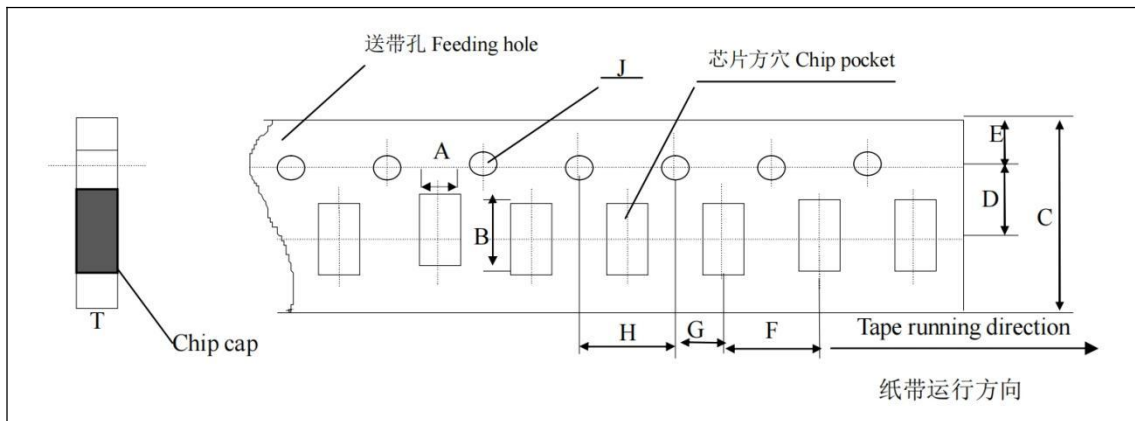
SOLDERING CONDITION

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 (T _{smax} to T _p)	3 °C / second (max.)
PREHEAT	- Temperature Min (T_{smmin}) - Temperature Max (T_{smmax}) - Time (tsmin to tsmax)	150 °C 200 °C 60-180 seconds
REFLOW	- Temperature (T_L) - Total Time above T_L (t_L)	217 °C 60-150 seconds
PEAK	- Temperature (T_p) - Time (tp)	260 °C 20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max

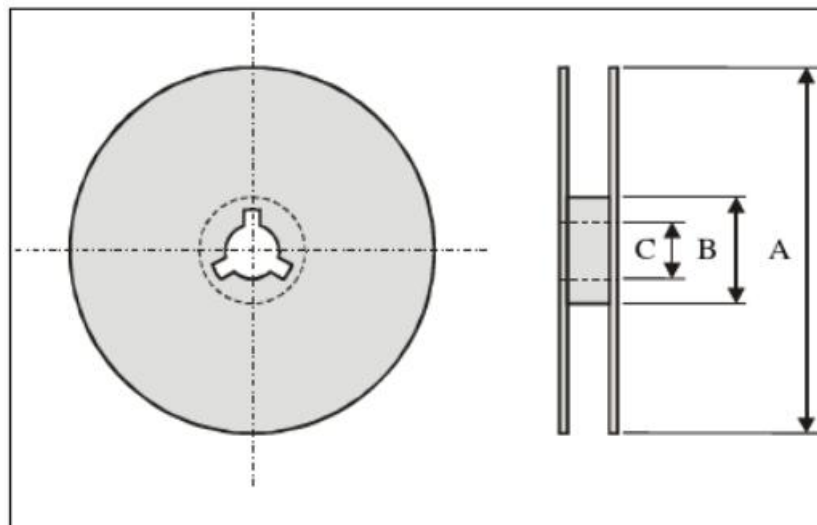
PACKAGING



Plastic Tape specification (unit:mm)

Index	A	B	C	D	J
Dimension (mm)	4.0 ± 0.1	16.8 ± 0.1	24.0 ± 0.1	12.0 ± 0.05	1.5 ± 0.1
Index	E	F	G	H	T
Dimension (mm)	1.75 ± 0.1	8.0 ± 0.1	2.0 ± 0.1	2.0 ± 0.1	3.8Max

Reel dimensions



Index	A	B	C
Dimension(mm)	330	100	13.5

Typing Quantity: 1500 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.