

SMD 天线规格书

Guangzhou Cambrian Electronic Technology Co., Ltd. Room 1119, Building
1, Hongda Trade and Creativity Park, No. 96, Yuanxiang Road, Yunpu
Street, Huangpu District, Guangzhou City

Guangzhou Cambricon Electronic Technology Co., LTD

OverAir™ SMD Antenna Series
RoHS Compliant

PN: OA-C15

2.4 GHz ISM Band Antenna

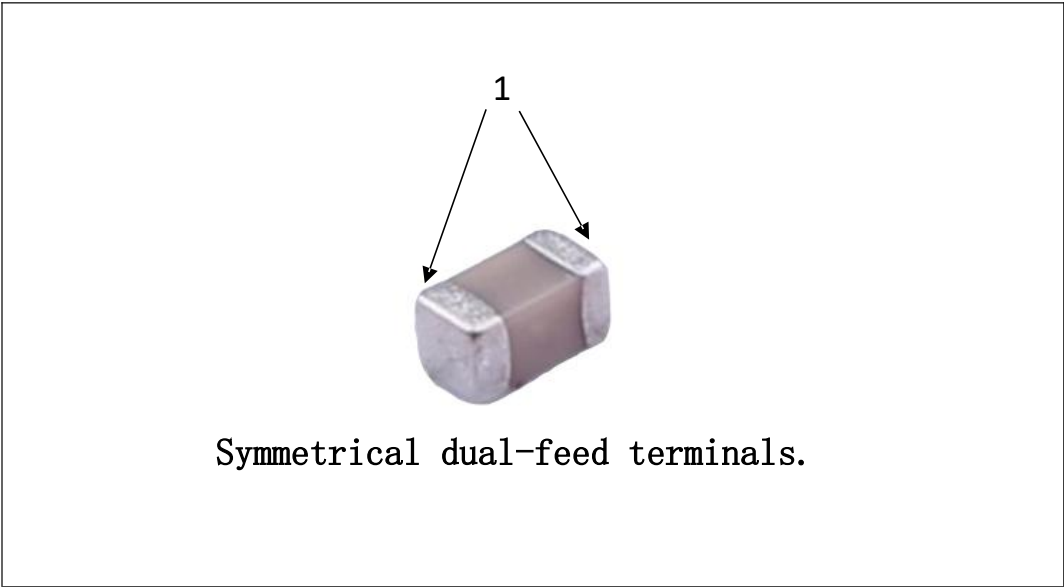
Features

- 1. Ultra-compact SMD antenna with dimensions of only $1.6 \times 0.8 \times 0.8 \text{ mm}^3$.
- 2. Low energy loss and high antenna efficiency.
- 3. High stability under temperature and humidity variations.

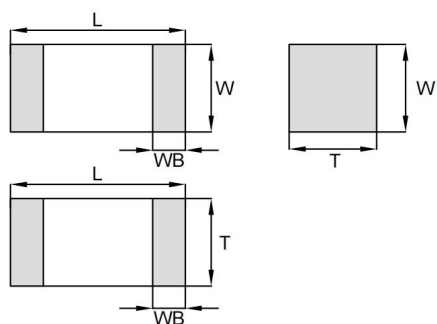
Applications

- 1. Antenna applications in the 2.4 GHz ISM band.
- 2. Bluetooth, wireless, smart-home applications.

Structure



Dimensions

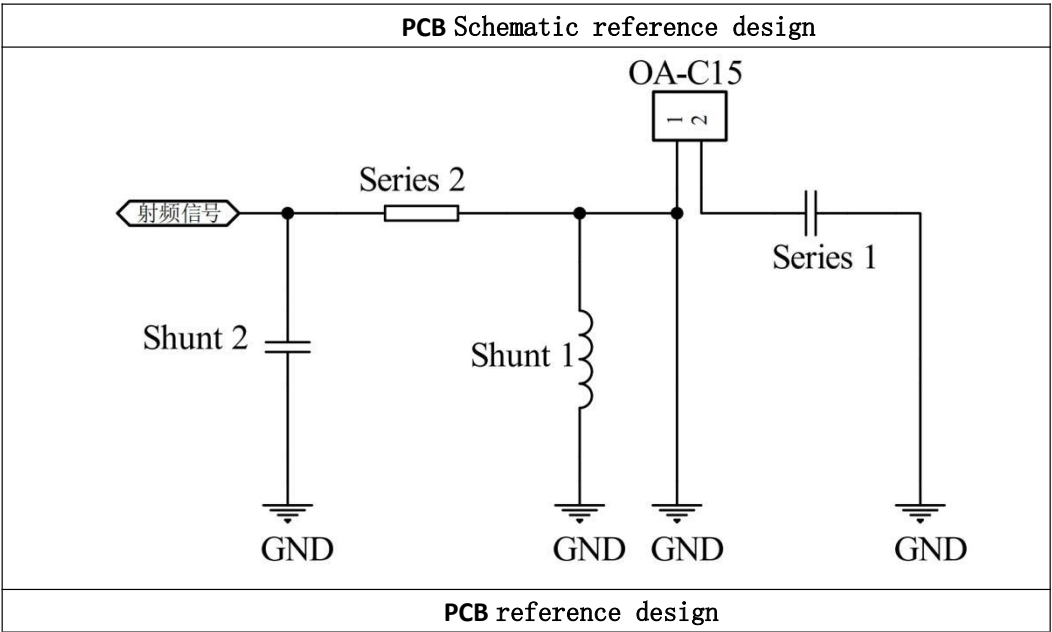
三视图	符号	尺寸(mm)
	L	1.6 ± 0.1
	w	0.8 ± 0.1
	T	0.8 ± 0.1
	WB	0.3 ± 0.1

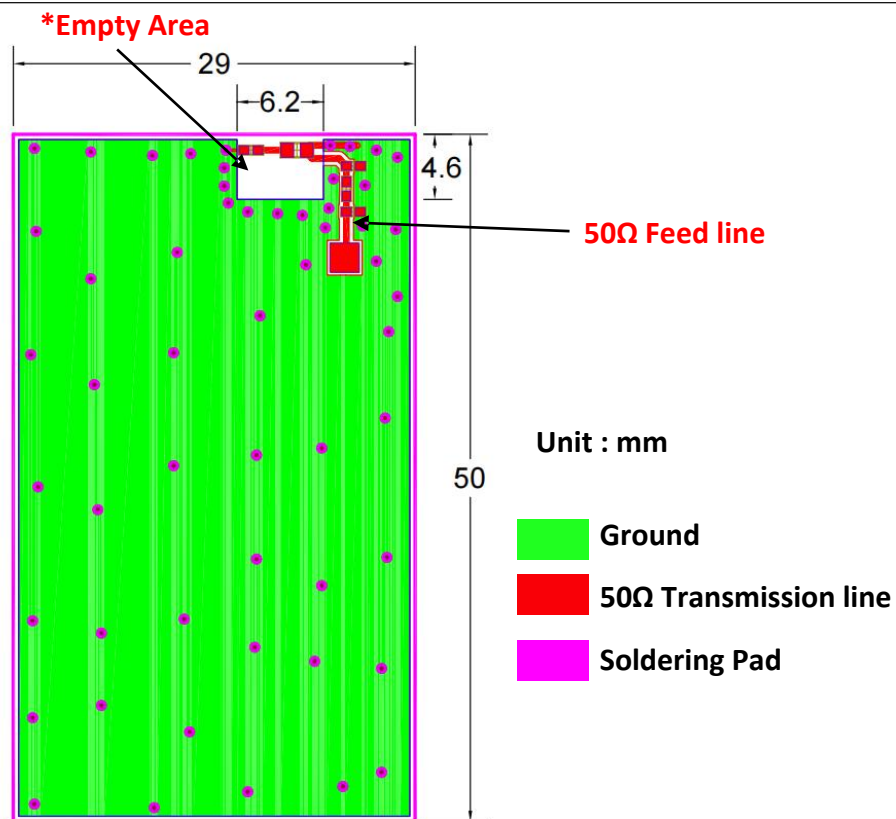
Electrical Characteristics

OA-C15	Specification
Working Frequency	2450 ± 50MHz
Band Width	>100MHz
Impedance	50 Ω
Gain(dBi)	1.54
VSWR	<2.5
Operation Temperature	-40℃~+85℃
Power Capacity	3W

Note: An impedance matching network is required to achieve the 2.45 GHz working frequency.

Antenna Pad and PCB Routing Design

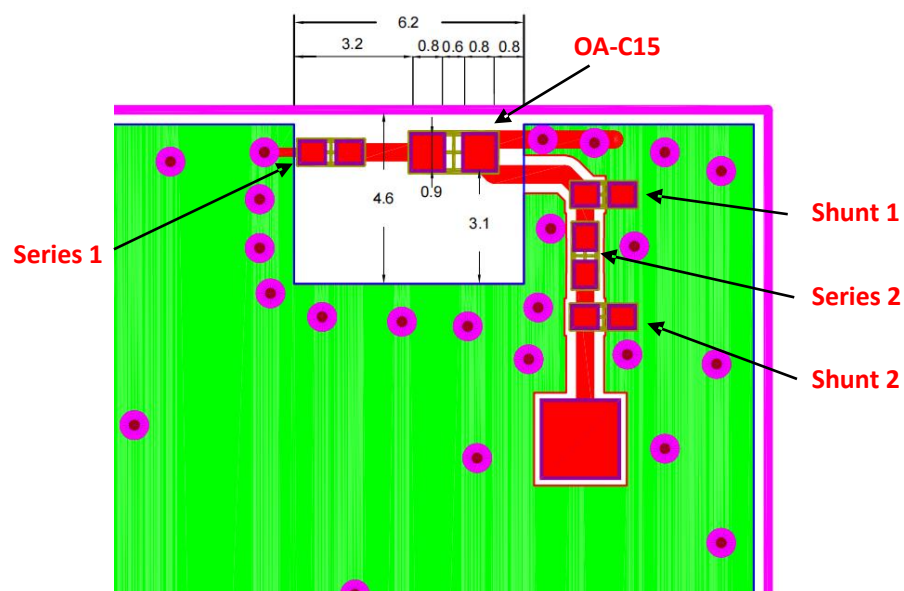


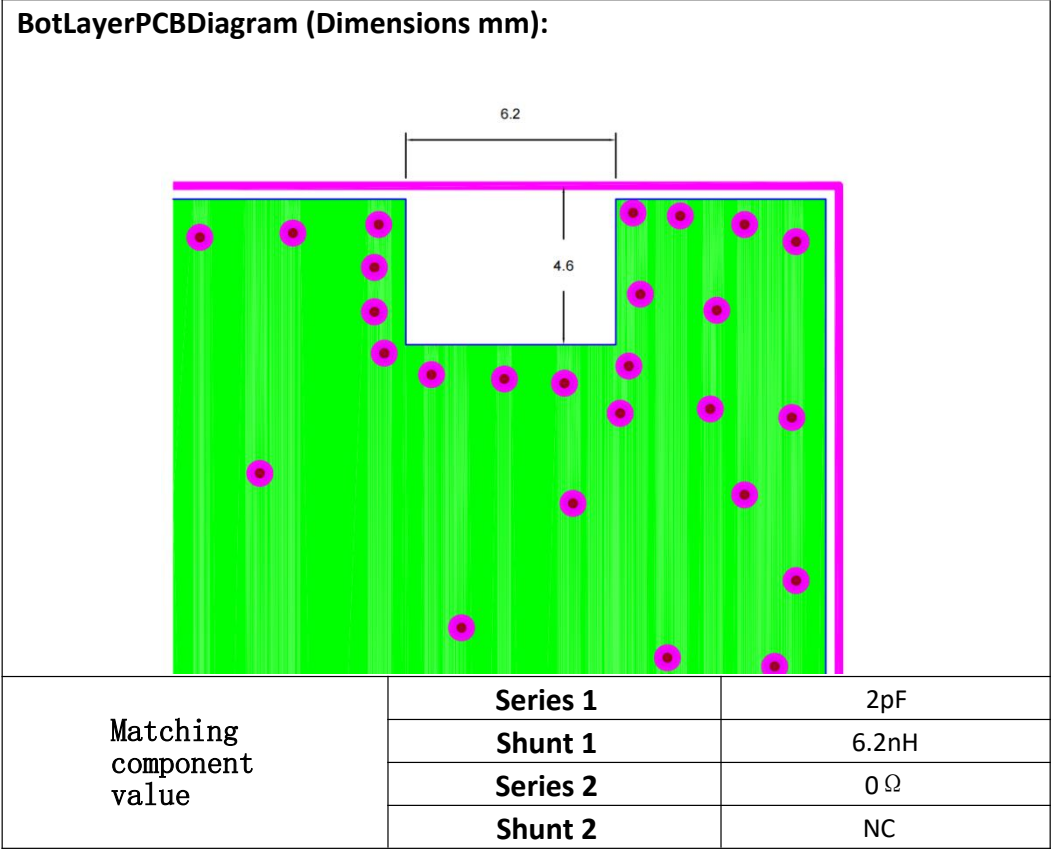


***Empty Area:** A 6.2 mm × 4.6 mm area must be cleared on all layers—no copper, no traces.

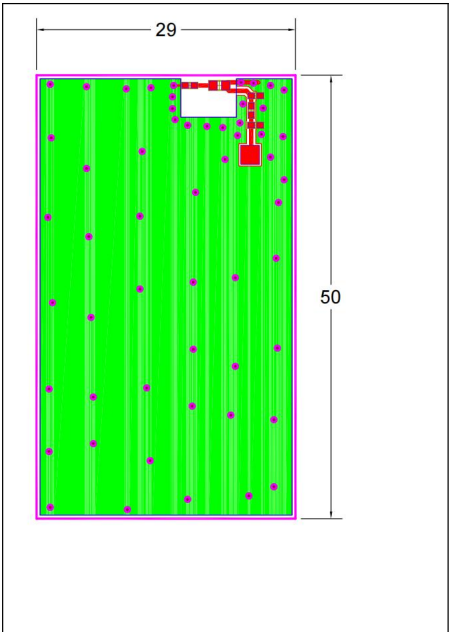
***50 Ω Feed line:** Requires ground plane underneath and 50 Ω impedance control.

Top layer PCB pattern (size mm)

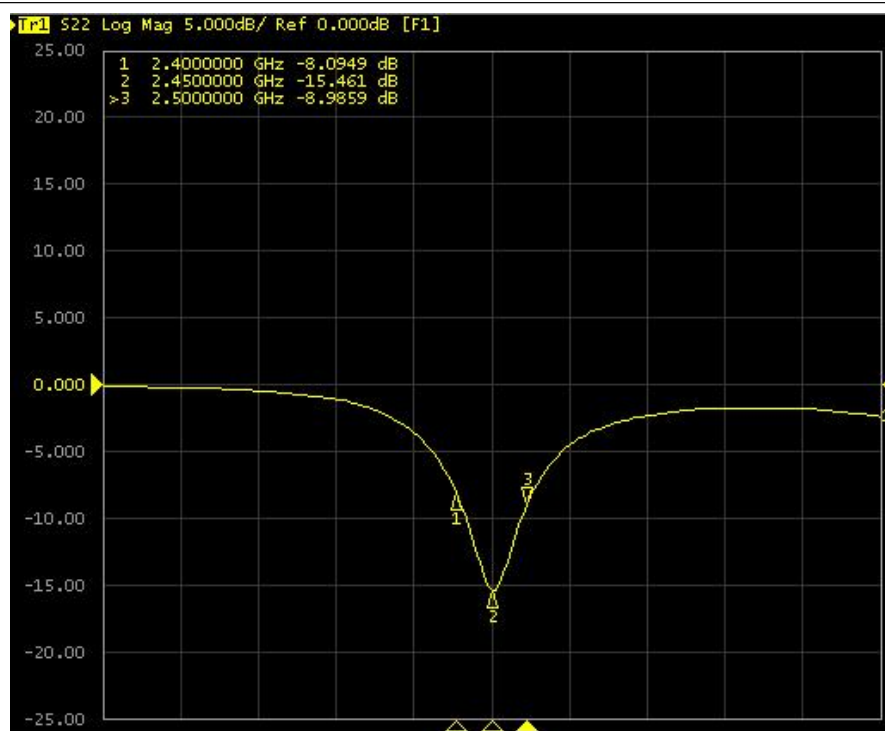




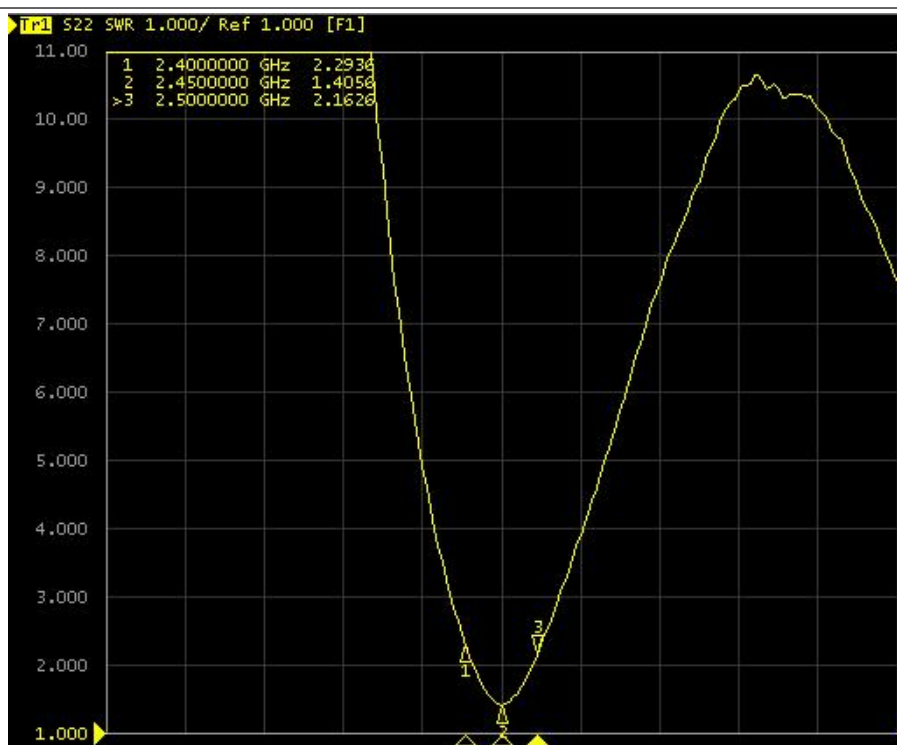
Antenna Testing on Test Board(Board Thickness 1.0 mm).



Antenna S11 Characteristics

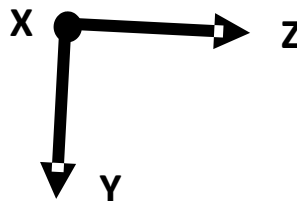
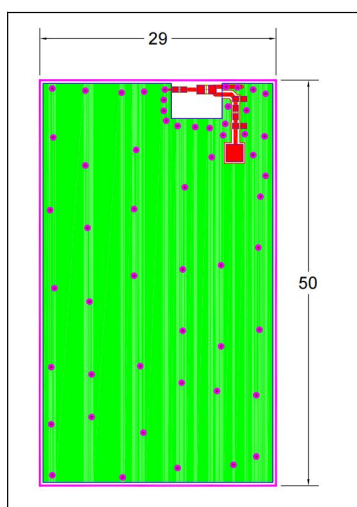


Antenna VSWR Characteristics



Efficiency and Radiation Pattern

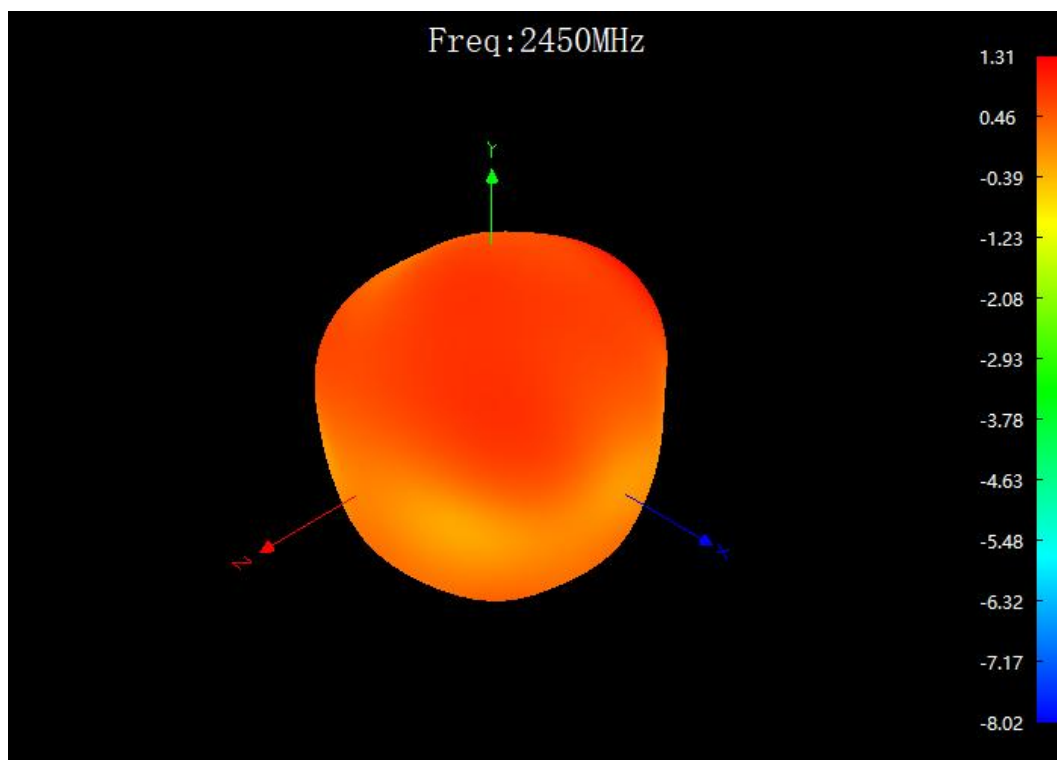
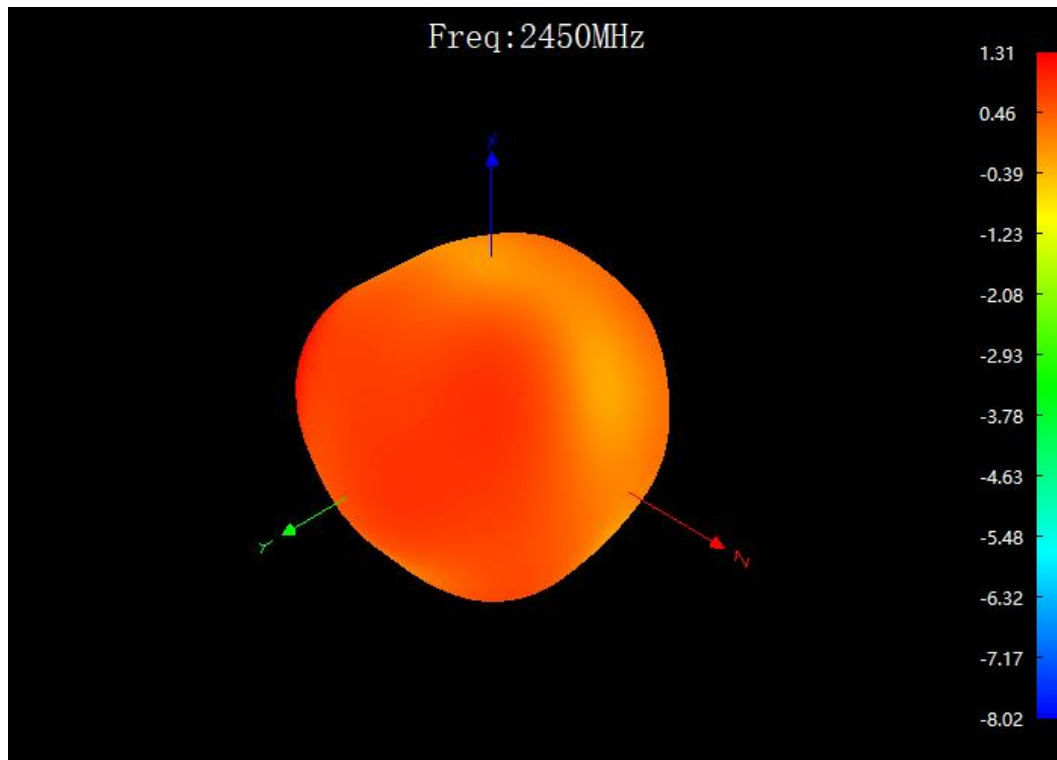
Radiation Pattern, Gain and other performance are based on the test PCB board design. OA-C15 Antenna Specification Characteristic Test Data is based on the test PCB board size and the test directions shown in the figure below.

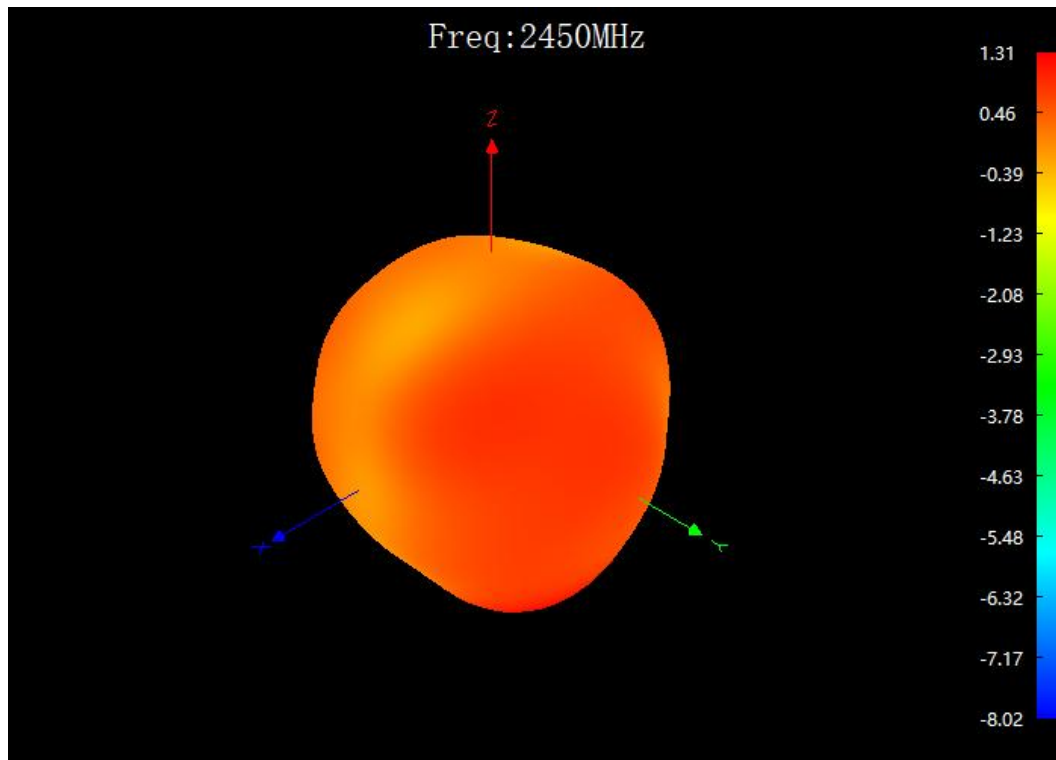


OA-C15 Antenna Gain Efficiency Test Table

Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	-0.01	47.42
2410	0.39	52.6
2420	1.07	62.23
2430	1.28	66.37
2440	1.54	70.79
2450	1.31	71.29
2460	0.9	67.45
2470	0.51	62.09
2480	0	54.08
2490	-0.83	49.89
2500	-2.21	37.58

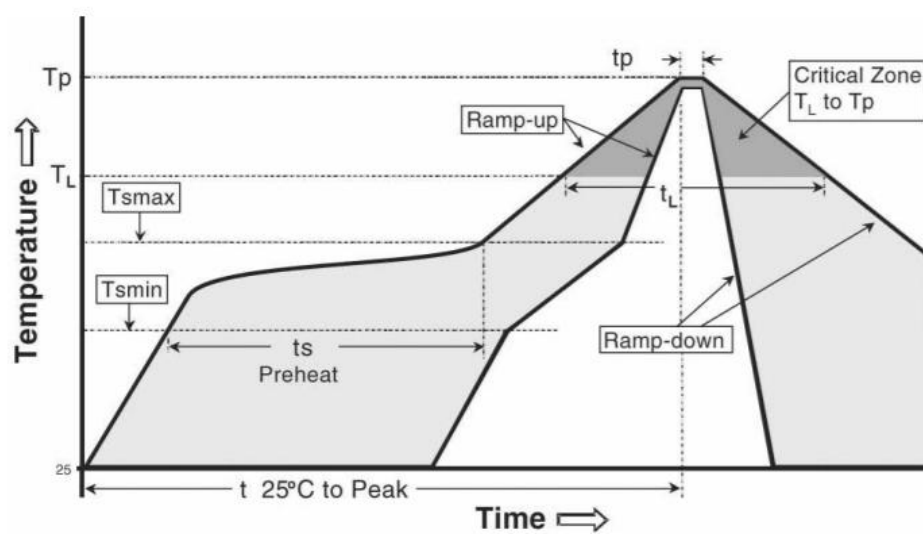
2.45GHz 3D Radiation PatternZYX.





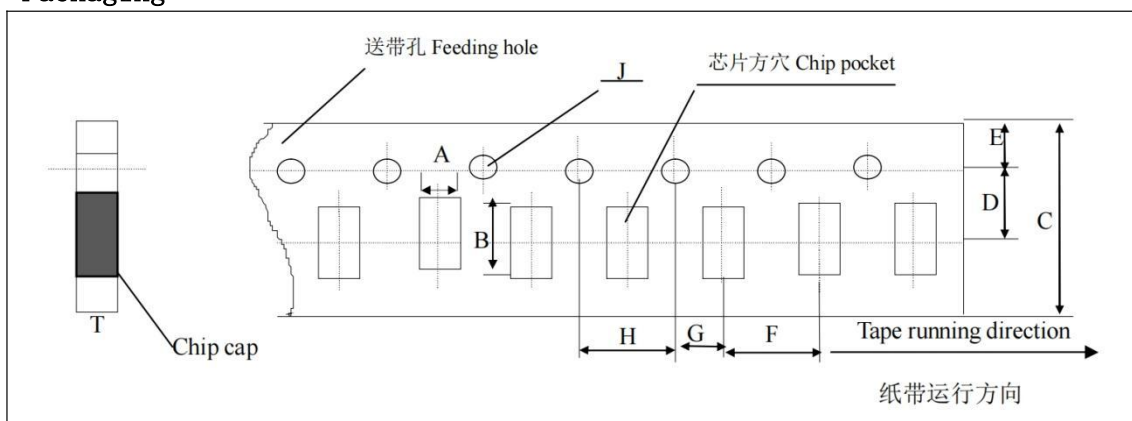
Welding Conditions

Reliable and non-destructive typical welding specifications are shown in the figure below:



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 _{smin}) - Temperature Max (T _{smax}) - Time (t _{smin} to t _{smax})	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 (t _p)	260 °C 20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max

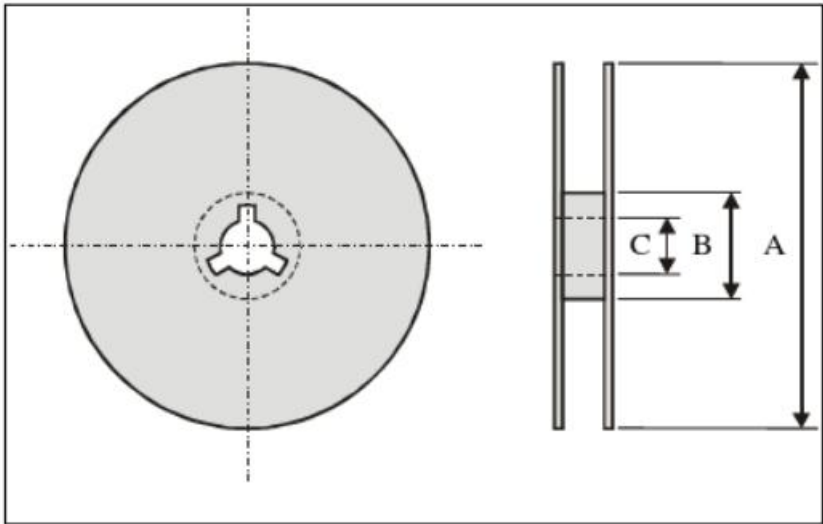
Packaging



Plastic carrier tape specifications (Unit: mm)

Index	A	B	C	D	J
Dimension (mm)	1.10±0.10	1.90±0.1	8.00±0.10	3.50±0.05	1.500/+0.10
Index	E	F	G	H	T
Dimension (mm)	1.75±0.10	4.00±0.1	2.00±0.10	4.00±0.10	1.10Max

Reel size.



Index	A	B	C
Dimension(mm)	178	50	13±0.5

Standard Quantity:4 000 PCS / tray.

Storage Environment

- The product storage should meet the following conditions:
- 1.Temperature: -10 ℃ ~ +40 ℃
 - 2.Humidity: 30% to 70% relative humidity
 - 3.The location where the product is placed should not come into contact with corrosive gases such as sulfur. Chlorine gas or acid may cause oxidation of the product electrodes.This leads to a deterioration in weldability.
 - 4.The product should be placed in a toolbox and protected from moisture and dust.
 - 5.The product should be stored in a warehouse and protected from heat, vibration, and direct sunlight.
 - 6.The product should be stored under sealed conditions.