

GUANGZHOU HANWUJI ELECTRONIC
TECHNOLOGY CO., LTD,

Address : Room 1119, 11th Floor, Building 1, Hongda Creative
Park, No. 96 Yuanxiang Road, Yunpu Subdistrict, Huangpu District,
Guangzhou

SMD

Antenna Specification

Sheet

CrossAir™ SMD antenna series
Comply with RoHS regulations

PN: CA-C03

2.4 GHz ISM Multi-band Antenna

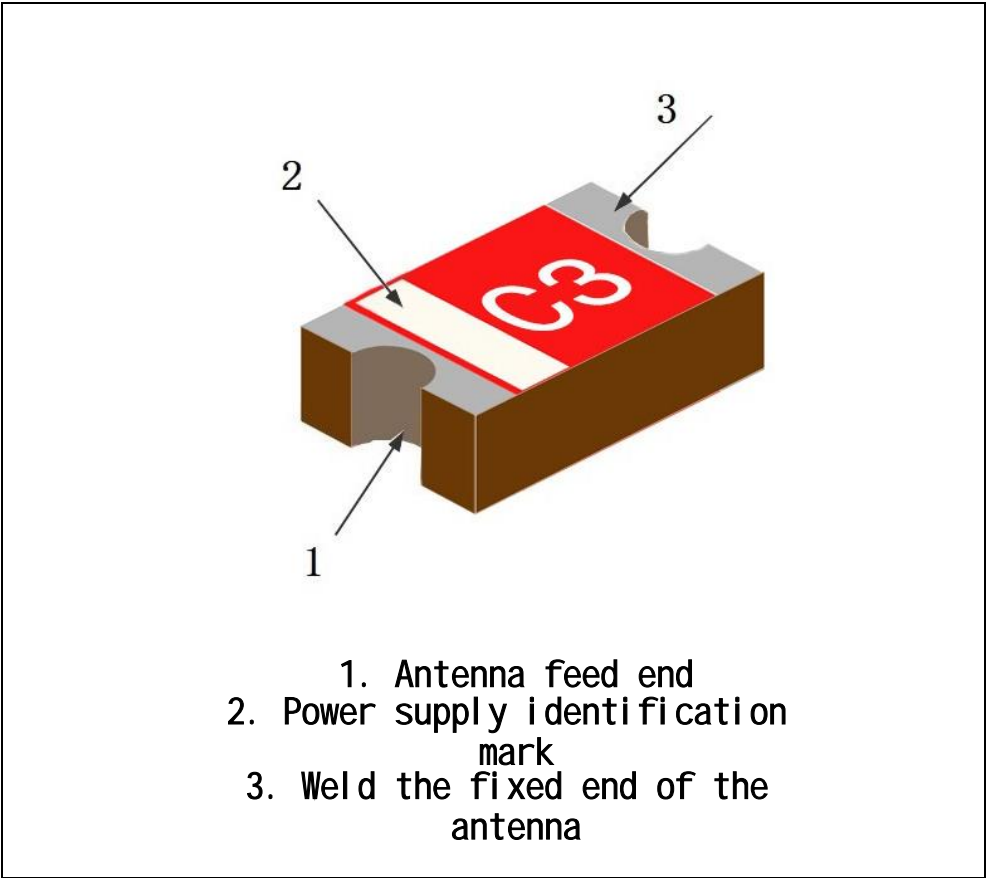
feature

- 1. A small-sized SMD patch antenna with dimensions of only 5.5X 2.0X 1.0mm³.
- 2. Low energy loss and high antenna efficiency.
- 3. It has high stability under the condition of temperature and humidity changes.

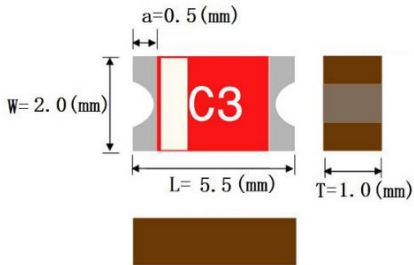
use

- 1. 2.4ghz ISM Band antenna application
- 2. Bluetooth, ZigBee, wireless applications, smart home applications, etc.
- 3.WIFI (only 2.4G)

construction



size

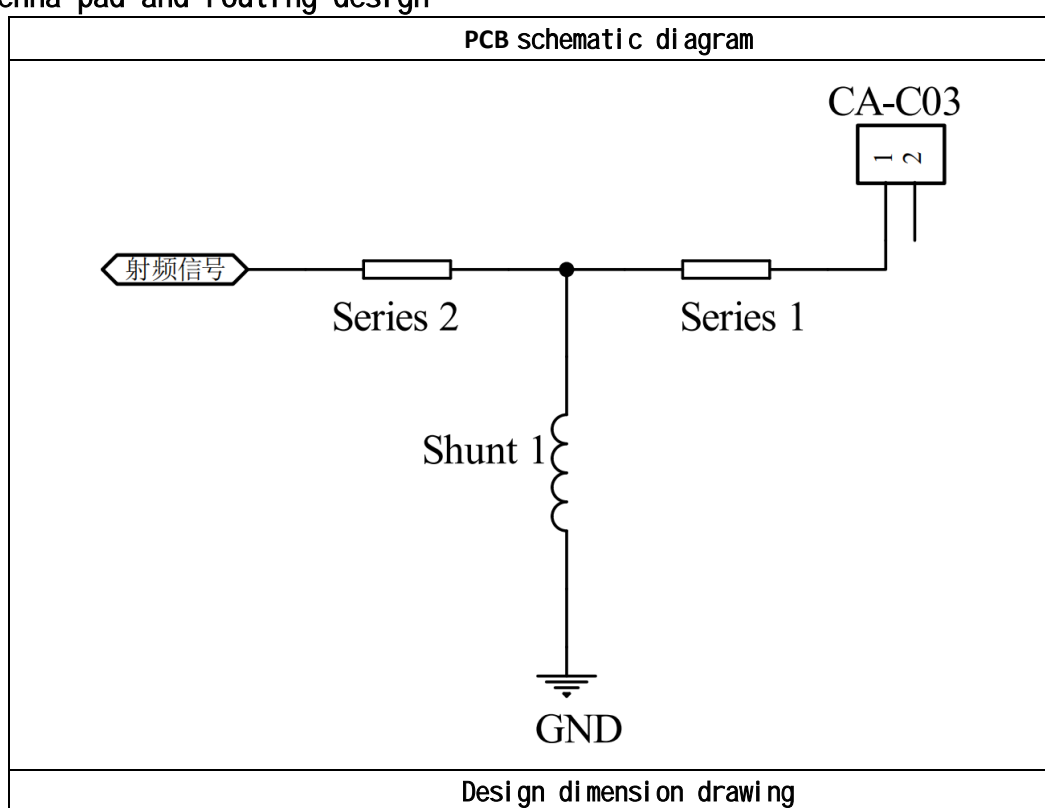
three views	symbol	size(mm)
	L	5.5±0.2
	w	2.0±0.1
	T	1.0±0.1
	a	0.5±0.1

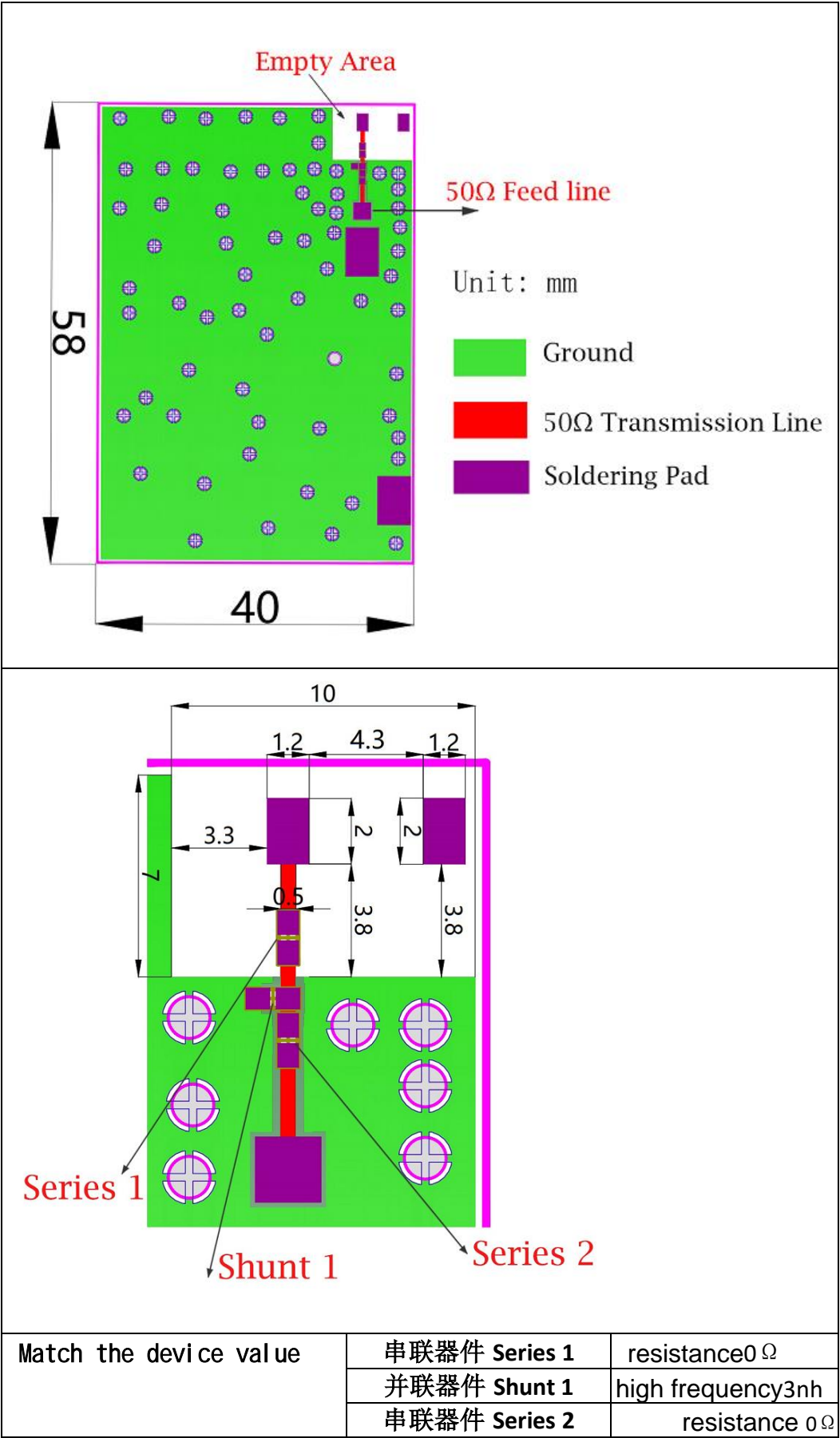
electrical specification

CA-C03	Specification
工作频率范围 Working Frequency	2450±50MHz
带宽 Band Width	>100MHz
阻抗 Impedance	50Ω
增益 Gain(dBi)	4.3 (peak)
驻波比 VSWR	<2
工作温度 Operation Temperature	-40℃~+95℃
可承受功率 Power Capacity	3W

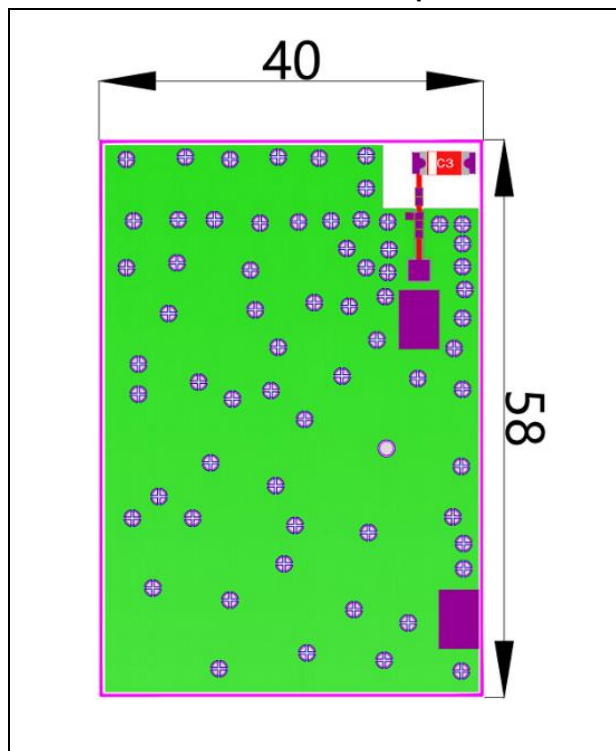
天线 2.4G 工作频率需要通过阻抗匹配器件调试来实现.

Antenna pad and routing design



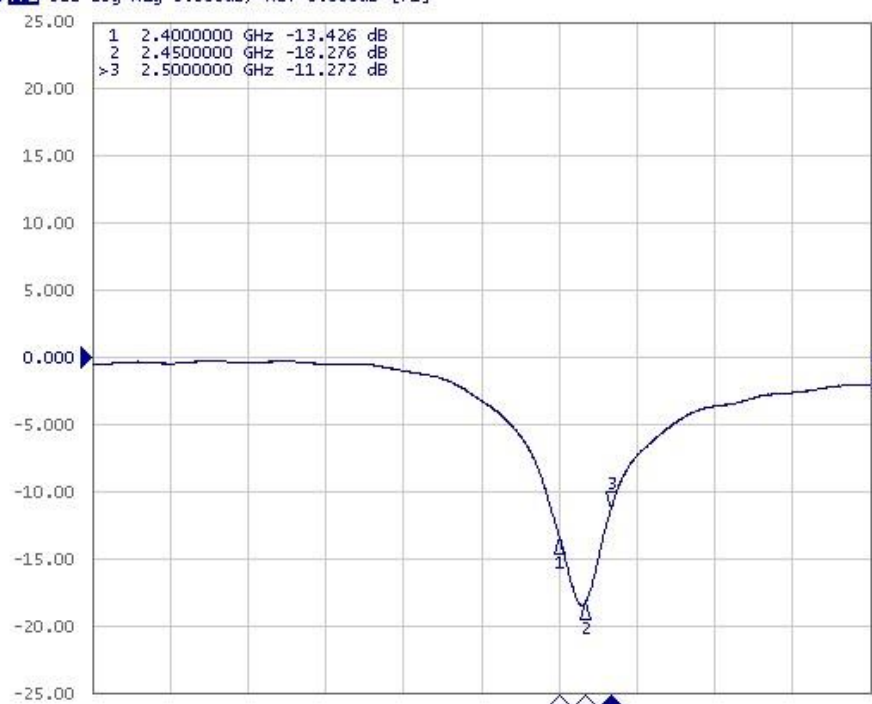


Antenna test on the test board (board thickness 1.0mm)

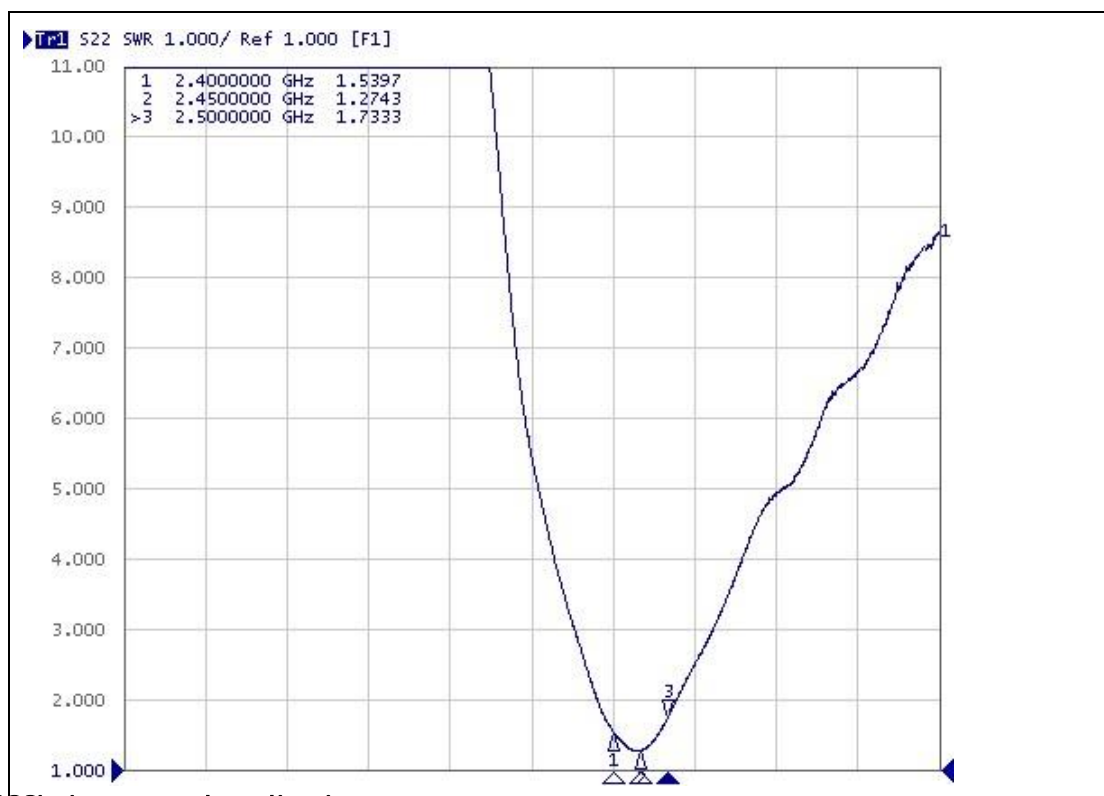


Antenna S11 characteristics

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

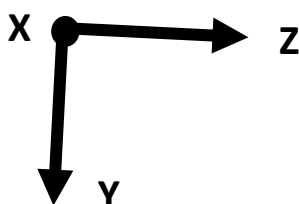
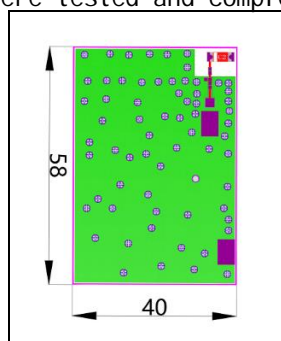


Antenna VSWR Specification

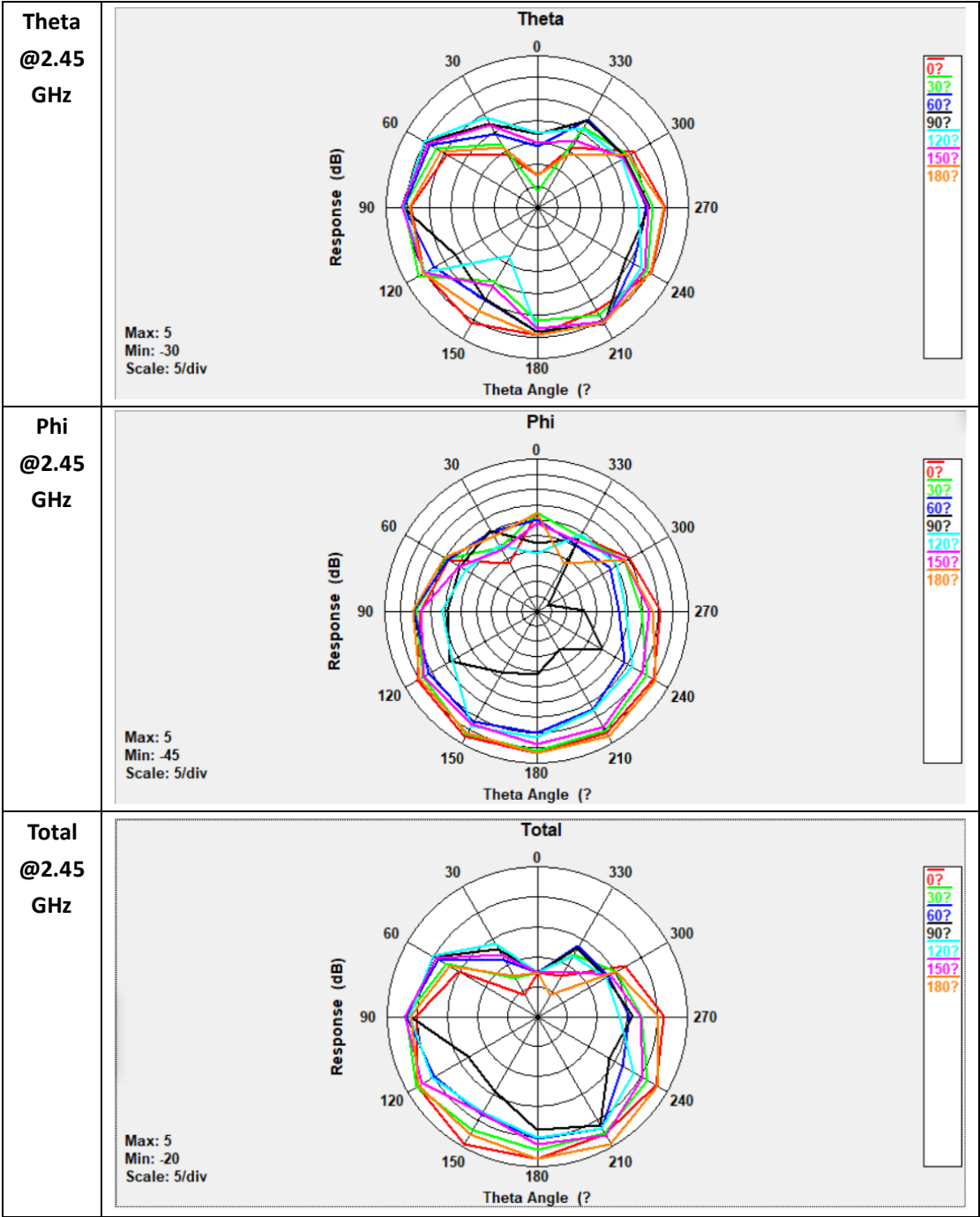


Efficiency and radiation map

The performance such as efficiency, radiation pattern and gain is obtained based on the design of the test board. The specification characteristic test data of the CA-C03 antenna is obtained based on the size of the tested PCB board and the test direction shown in the following figure. The following data were tested and completed in the ETS 3D microwave anechoic chamber.

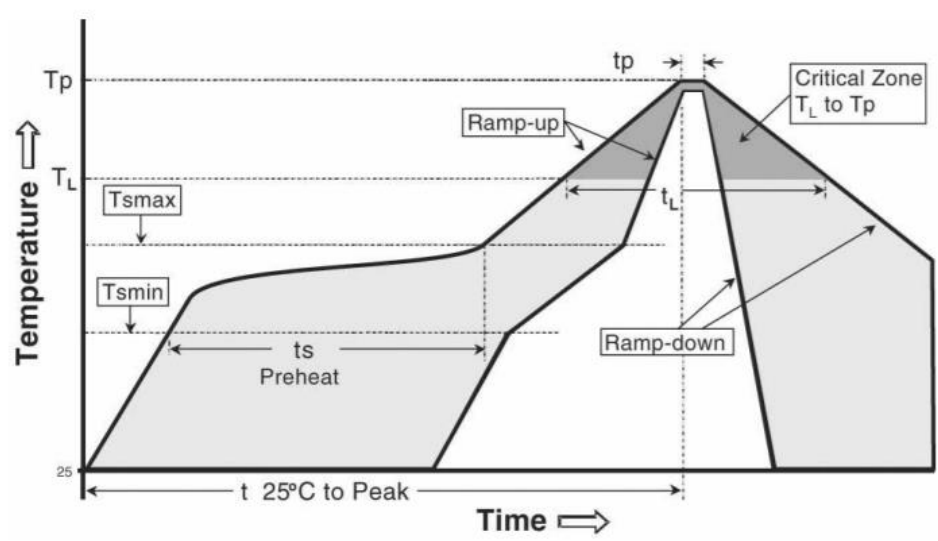


Gain and efficiency	bandwidth 2.4G-2.5GHz
峰值增益 Peak Gain	4.3dBi
带内平均增益 Average Gain across the band	4.1dBi
带内增益范围 Gain Range across the band	3.9dBi~4.3dBi
峰值效率 Peak Efficiency	81.7%
带内平均效率 Average Efficiency across the band	80.2%
带内效率范围 Efficiency Range across the band	78.6%~81.7%



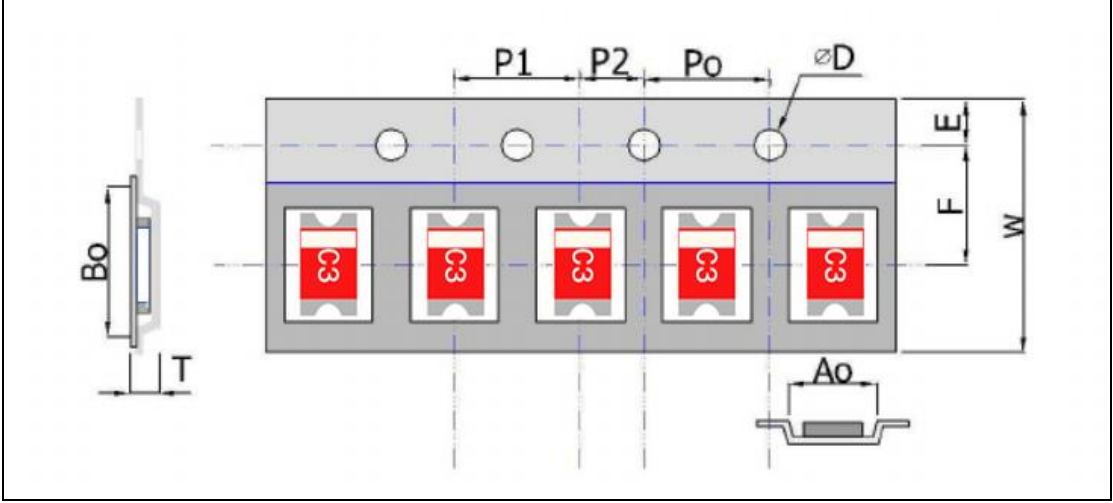
welding condition

The typical reliable and non-destructive welding specifications are shown in the following figure :



Phase	Profile features	Pb-Free assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate (Tsmax to Tp)	3 °C / second (max.)
PREHEAT	<ul style="list-style-type: none">- Temperature Min (Tsmmin)- Temperature Max (Tsmax)- Time (tsmin to tsmax)	<ul style="list-style-type: none">150 °C200 °C60-180 seconds
REFLOW	<ul style="list-style-type: none">- Temperature (TL)- Total Time above TL (tL)	<ul style="list-style-type: none">217 °C60-150 seconds
PEAK	<ul style="list-style-type: none">- Temperature (Tp)- Time (tp)	<ul style="list-style-type: none">260 °C20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max

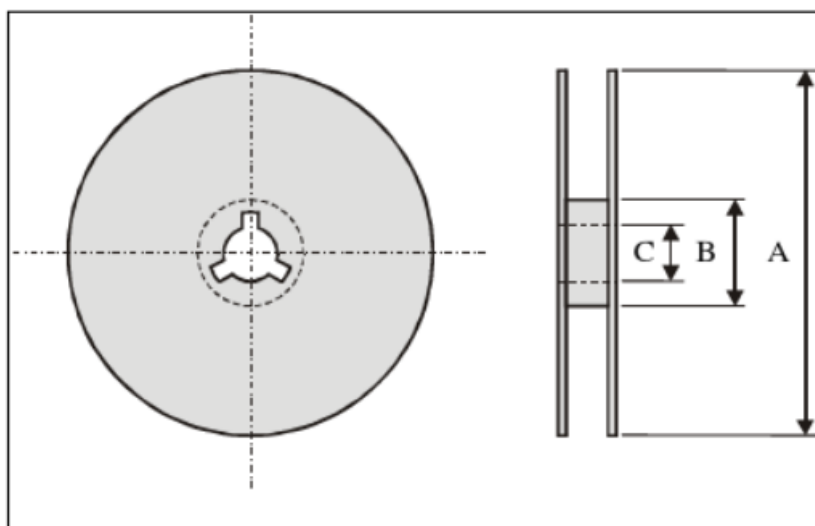
packagi ng



Specifications of plastic carrier tape (单位:mm)

Index	Ao	Bo	ΦD	T	W
Dimension (mm)	3.0 ± 0.1	6.0 ± 0.1	1.55 ± 0.05	1.6 ± 0.1	16 ± 0.2
Index	E	F	Po	P1	P2
Dimension (mm)	1.75 ± 0.1	7.0 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1

Reel size



Index	A	B	C
Dimension(mm)	330	100	13.5

Standard quantity: 3000 PCS per disk.

storage environment

The following conditions should be met when the product is stored:

temperatu : $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$

rehumidit : 30% 至 70% relative humidity

y

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 electrode, resulting in poor solderability. The product should be placed in the toolbox and kept away from moisture and dust.

The products should be stored in the warehouse and kept away from heat, vibration and direct sunlight.

The product should be stored under sealed conditions.