

SMD antenna specification sheet

OverAir[®] SMD The
antenna series
complies **RoHS**
Specification

PN: OA-C07

2.4 GHz ISM Band antenna

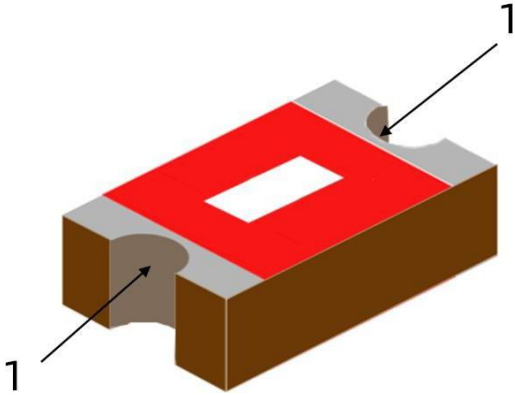
Features:

- 1. SMD patch antenna with dimensions of only 3.5 x 1.7 x 1.2 mm³
- 2. Low energy loss, high antenna efficiency.
- 3. High stability under temperature and humidity changes.

Application:

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

structure



不区分天线两端的馈电焊盘和固定焊盘

Size:

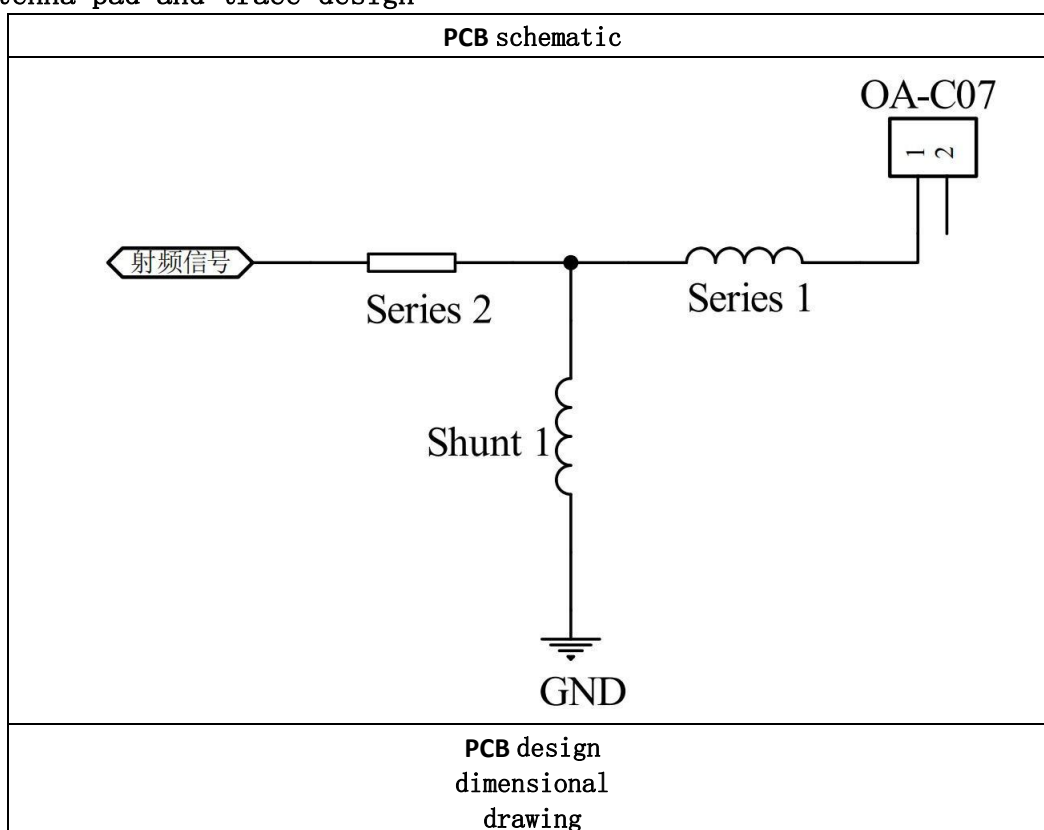
Three views	symbol	Dimensions (mm).
	L	3.5±0.2
	w	1.7±0.1
	T	1.2±0.1
	a	0.4±0.1

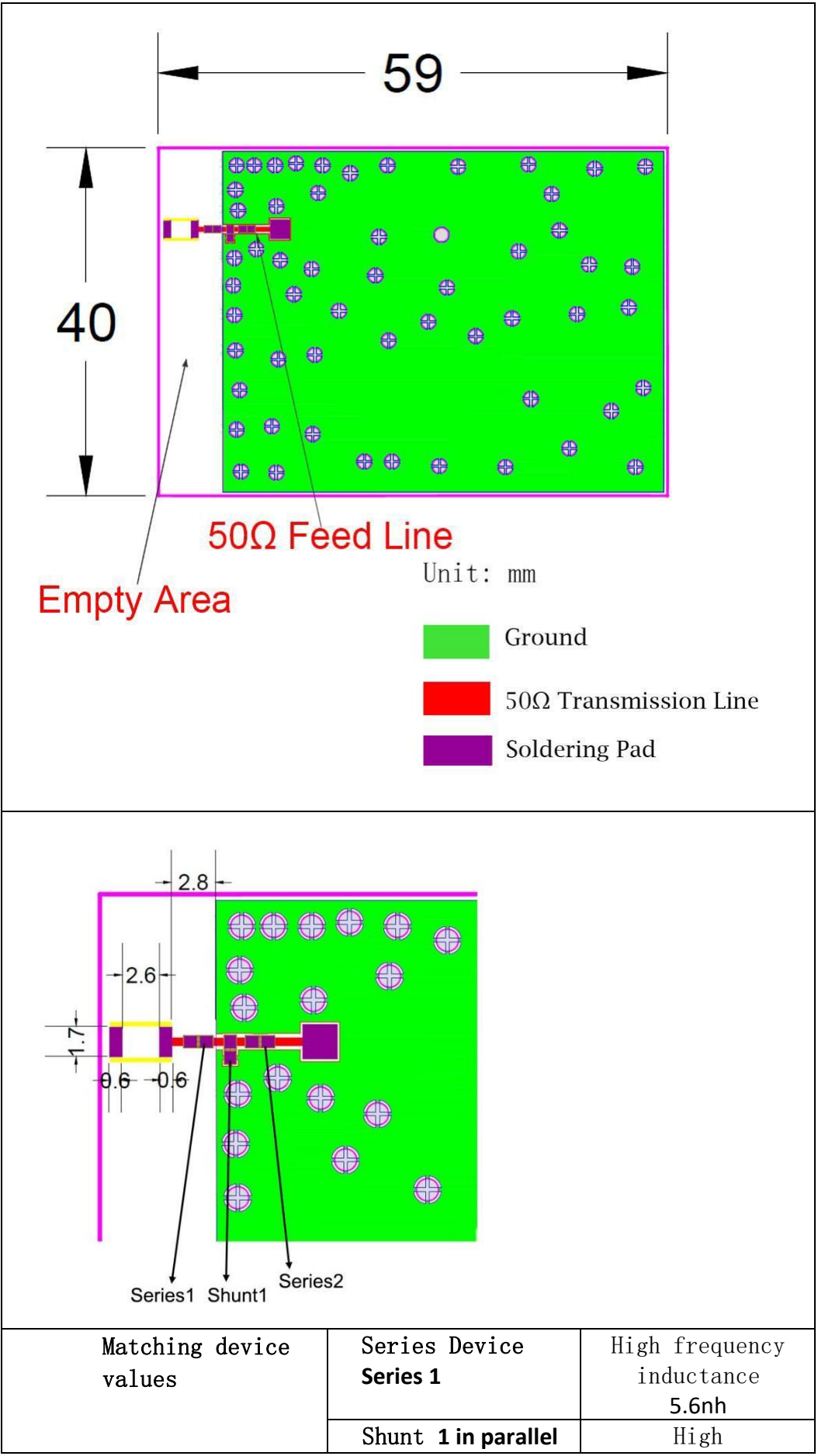
Electrical characteristics

OA-C07	Specification
Working Frequency	2450 ± 50MHz
带宽 Band Width	>100MHz
Impedance	50 Ω
Gain (dBi).	3.74 (peak)
VSWR	<2
工作温度 Operation Temperature	-40℃~+95℃
可承受功率 Power Capacity	3W

The antenna 2.4G operating frequency needs to be achieved through impedance matching device debugging

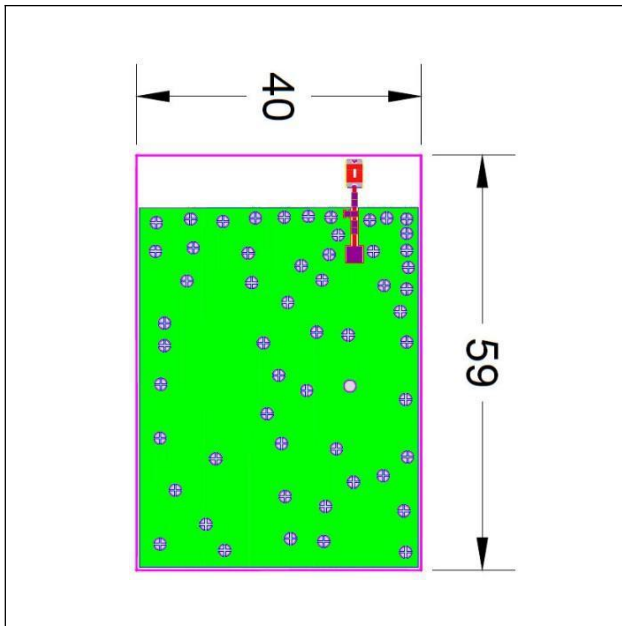
Antenna pad and trace design



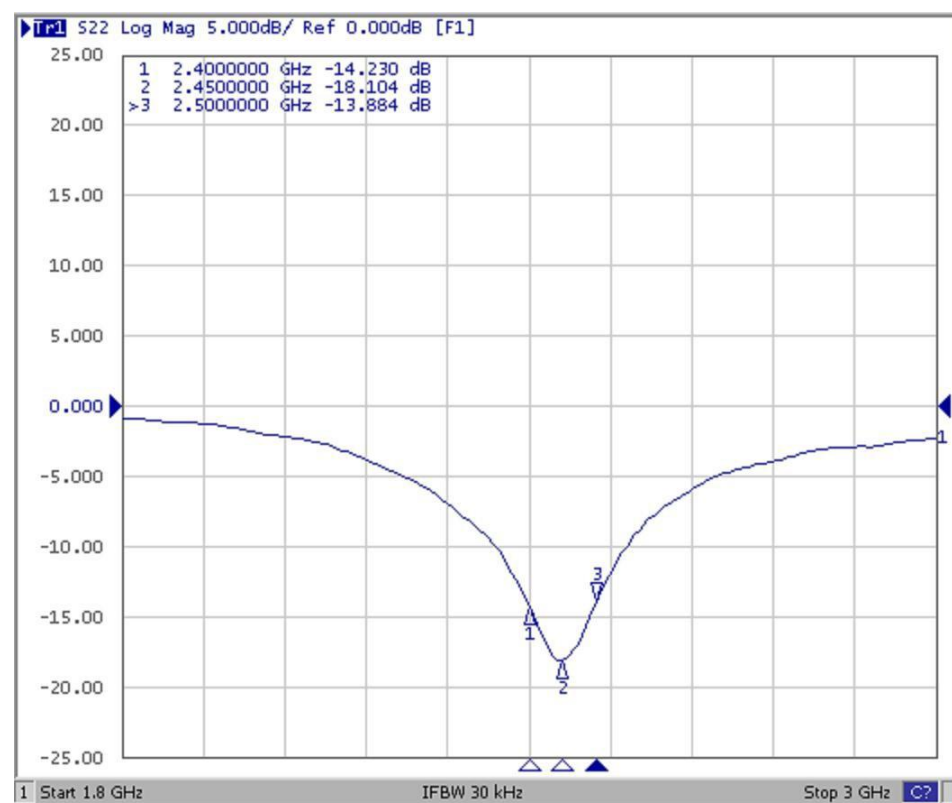


		frequency inductance 4.7nh
	Series Device Series 2	Resistance 0Ω

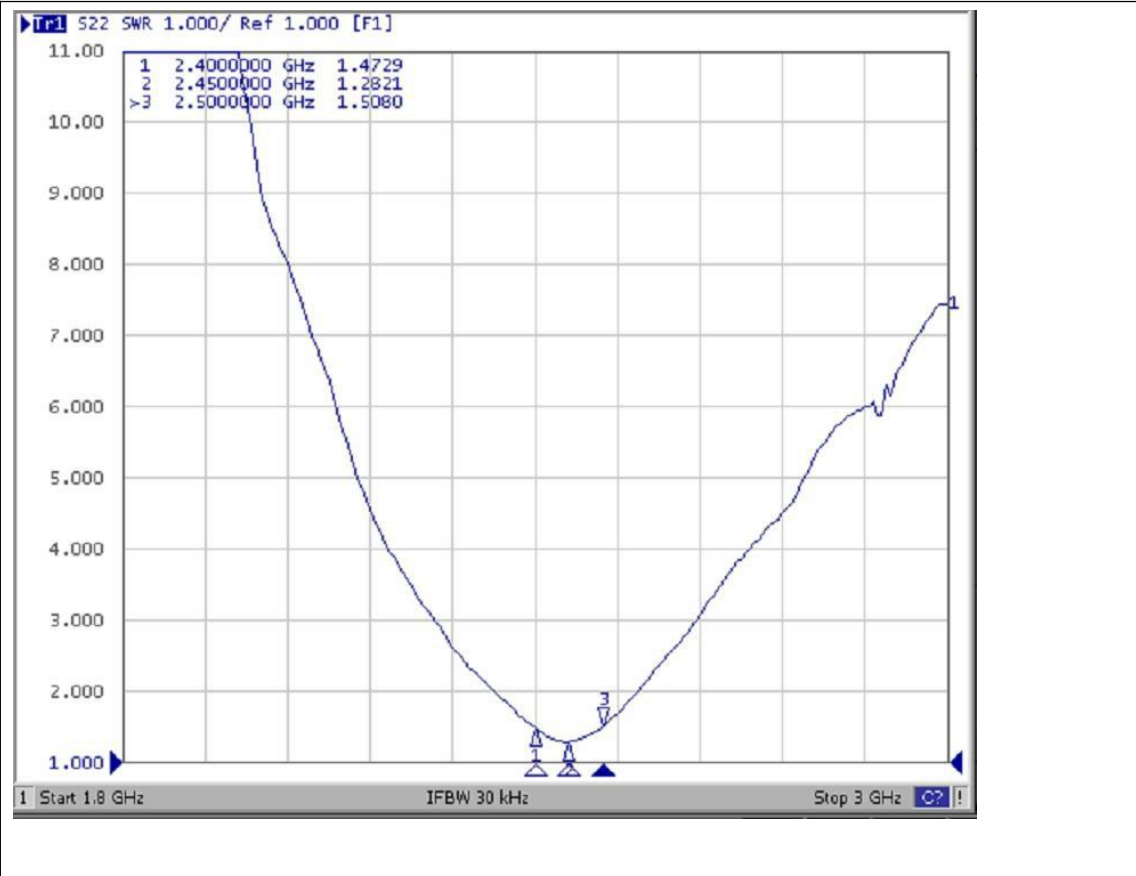
Test the antenna test on the board (1.0mm thick).



Antenna S11
characteristics

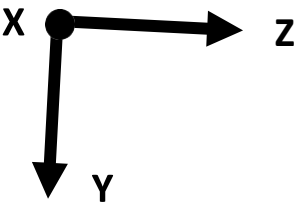
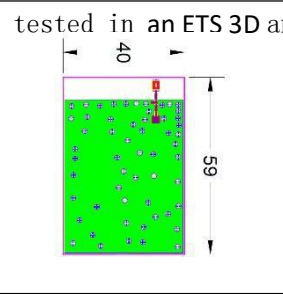


Antenna VSWR
characteristics



Efficiency and radiation diagram

Efficiency, radiograph, gain and other properties are obtained based on the test board design. The specification test data for the OA-C07 antenna is based on the test PCB board size and the test orientation shown in the figure below. The following data was tested in an ETS 3D anechoic chamber



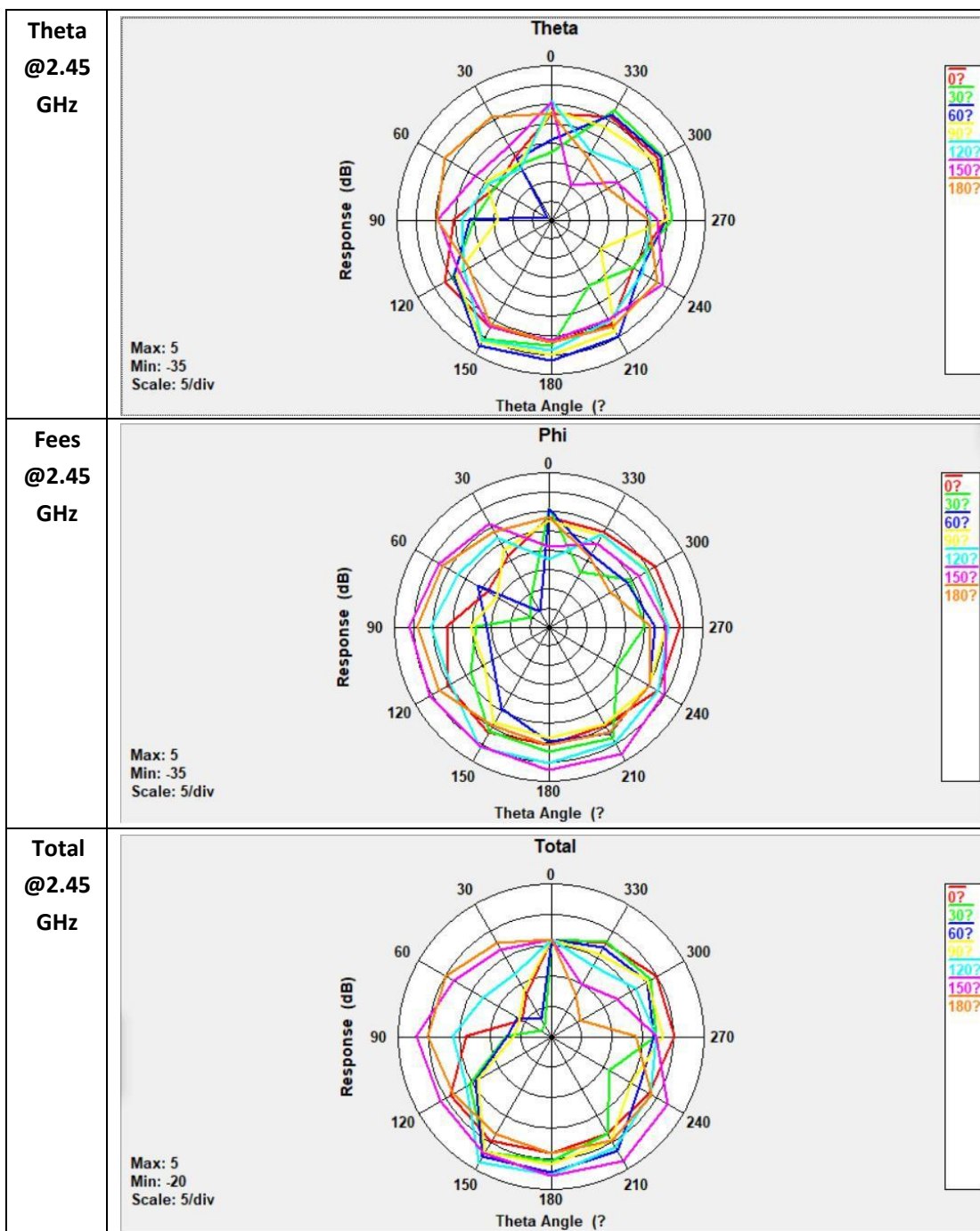
Gain and efficiency	Bandwidth 2.4G-2.5GHz
峰值增益 Peak Gain	3.74dBi
Average gain within the band Average Gain across the band	3.66dBi
In-band gain range Gain Range across the band	3.42dBi~3.74dBi
峰值效率 Peak Efficiency	58.9%

Average efficiency within the band	55.9%
Average Efficiency across the band	

带内效率范围

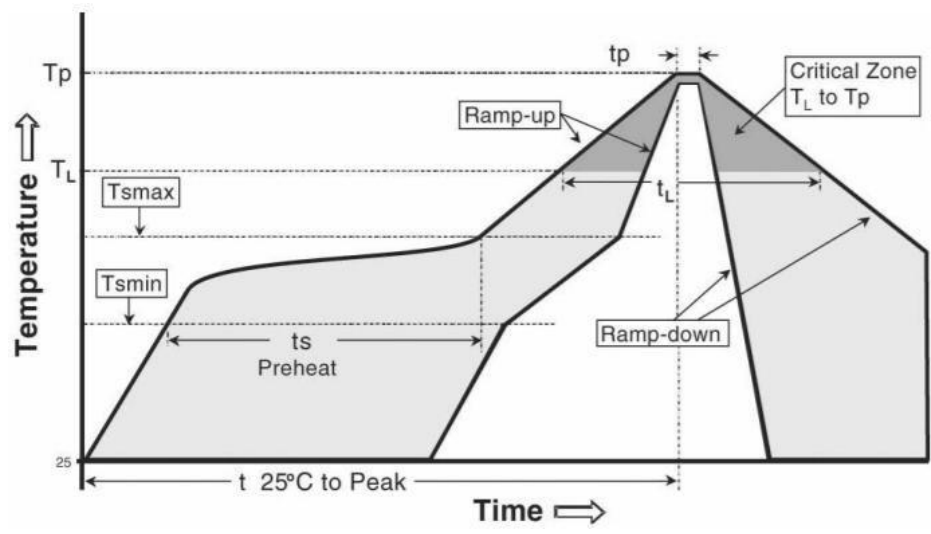
53.0%~58.9%

Efficiency Range across the band



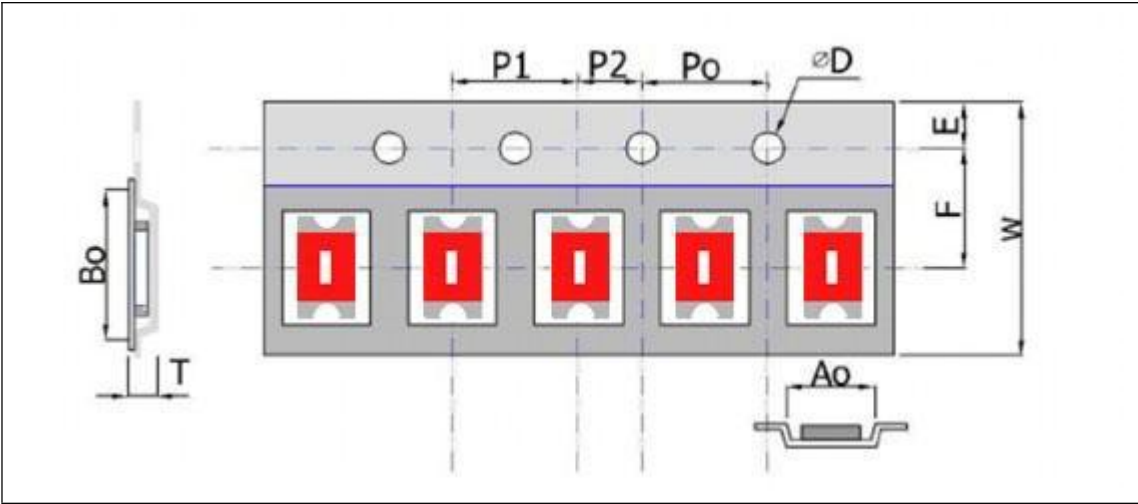
Welding conditions

Typical welding specifications for reliable and non-destructive 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

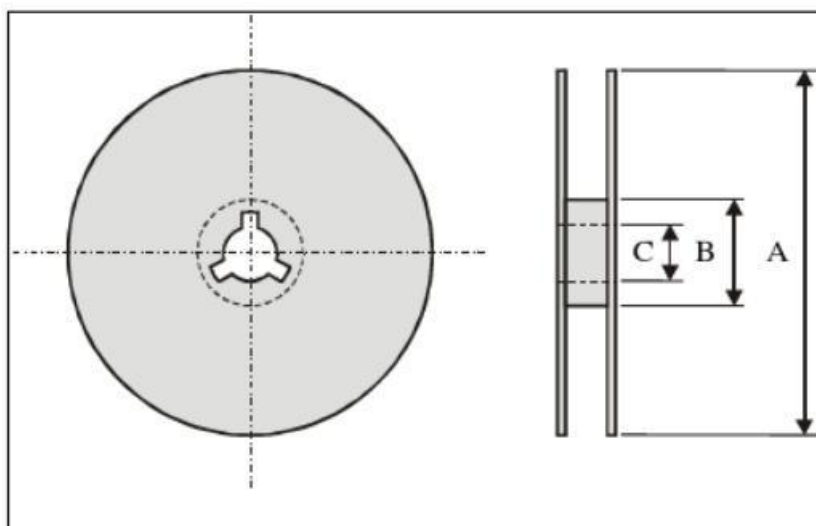
Packaging



Plastic carrier tape specification (unit: mm).

Index	By	Bo	FD	T	W
Dimension (mm)	2.0 ± 0.1	4.0 ± 0.1	1.55 ± 0.05	1.8 ± 0.1	12 ± 0.1
Index	E	F	After	P1	P2
Dimension (mm)	1.5 ± 0.1	5.4 ± 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: 2500 PCS/tray

Storage environment

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

Temperature: -

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

Humidity: 30% to 70% Relative humidity

The place where the product is placed should not come into contact with corrosive gases, such as sulfur, etc. Chlorine or acid may cause the product electrode to oxidize, resulting in poor weldability.

The product should be placed in the toolbox and protected from moisture and dust. Products should be stored in warehouses and protected from heat, vibration, and direct sunlight. Products should be stored under closed conditions.

Business cooperation and technical support

- Business cooperation: He Zhiling|Mobile phone 13611498429WeChat:gzhwjelec
heziling@hwjelec.com

Liang Qijun|Mobile phone 18122043436WeChat:hwlec
iangqijun@hwjelec.com

- Technical consultation: Chen Gong | Mobile: 18028016875|WeChat: gzhanwuji
chenpengfei@hwjelec.com

Company information

- Guangzhou Cambrian Electronic Technology Co., Ltd
 - Address: 1101, 11th Floor, Building 1, Hongda Creative Park, Yuanxiang Road, Yunpu Street, Huangpu District, Guangzhou
 - <http://www.gzhwjdz.com/>
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