

SMD Antenna Specification

SMD antenna series
Complies with RoHS specification

PN: Z321612F245

2.4 GHz ISM Band Antenna

2500PCS per roll

Manufacturer: Shenzhen Xunyan Communication Technology Co.
, LTD

Address: Room 406, Building A, Sanlian Industrial Zone, Tangtou
Community, Shiyan Street, Bao 'an District, Shenzhen City



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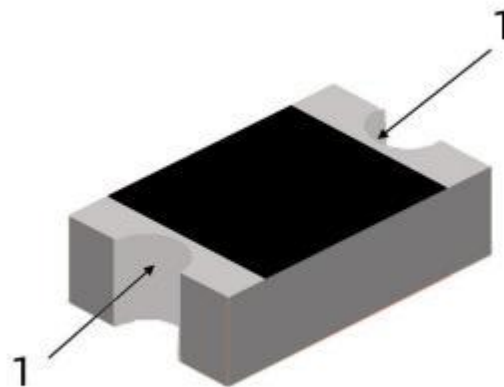
Characteristic

1. A small size SMD surface mount antenna with a size of only $3.35 \times 1.75 \times 1.2 \text{ mm}^3$.
2. Low energy loss, high antenna efficiency.
3. It has high stability under the condition of temperature and humidity change.

Apply

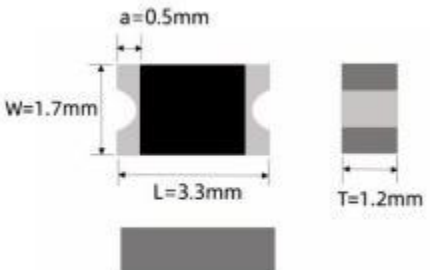
1. 2.4GHz ISM band antenna application
2. Bluetooth, ZigBee, wireless applications, smart home applications, etc
3. WIFI (only 2.4G)

structure



Do Not Distinguish Between the Feed Pads and Fixed Pads at Both Ends of the Antenna

size

three views	symbol	size (mm)
	L	3.35 ± 0.2
	w	1.75 ± 0.1
	T	1.2 ± 0.1
	a	0.5 ± 0.1

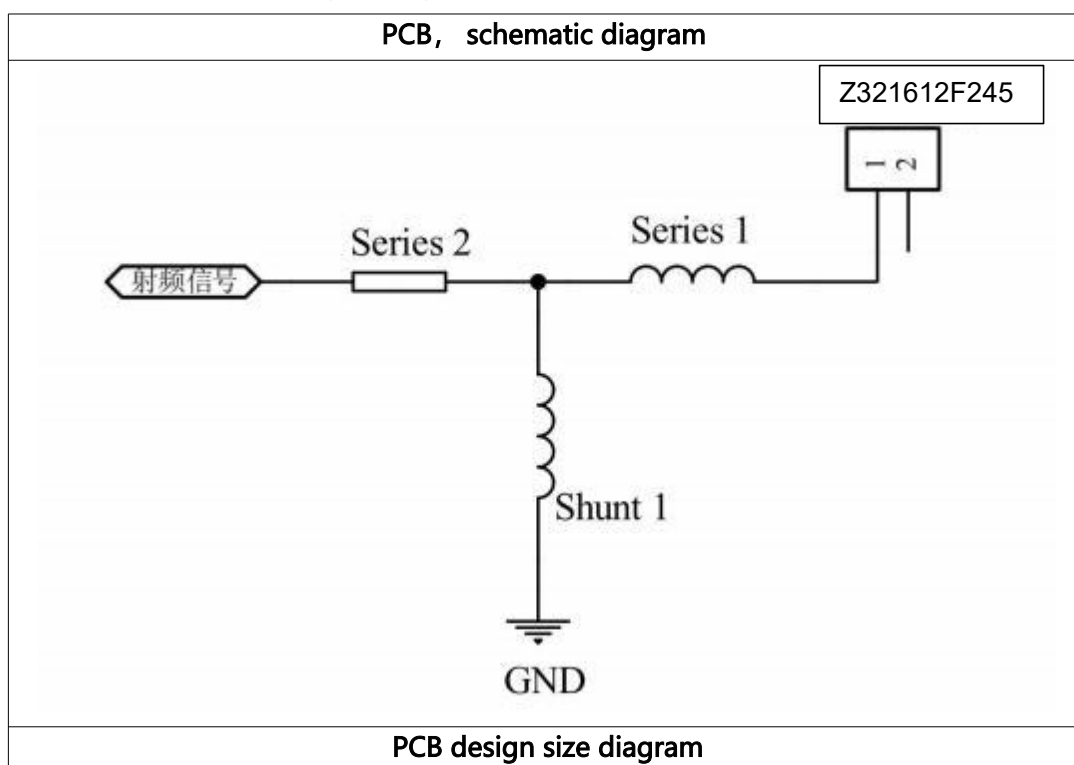
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Electrical Character

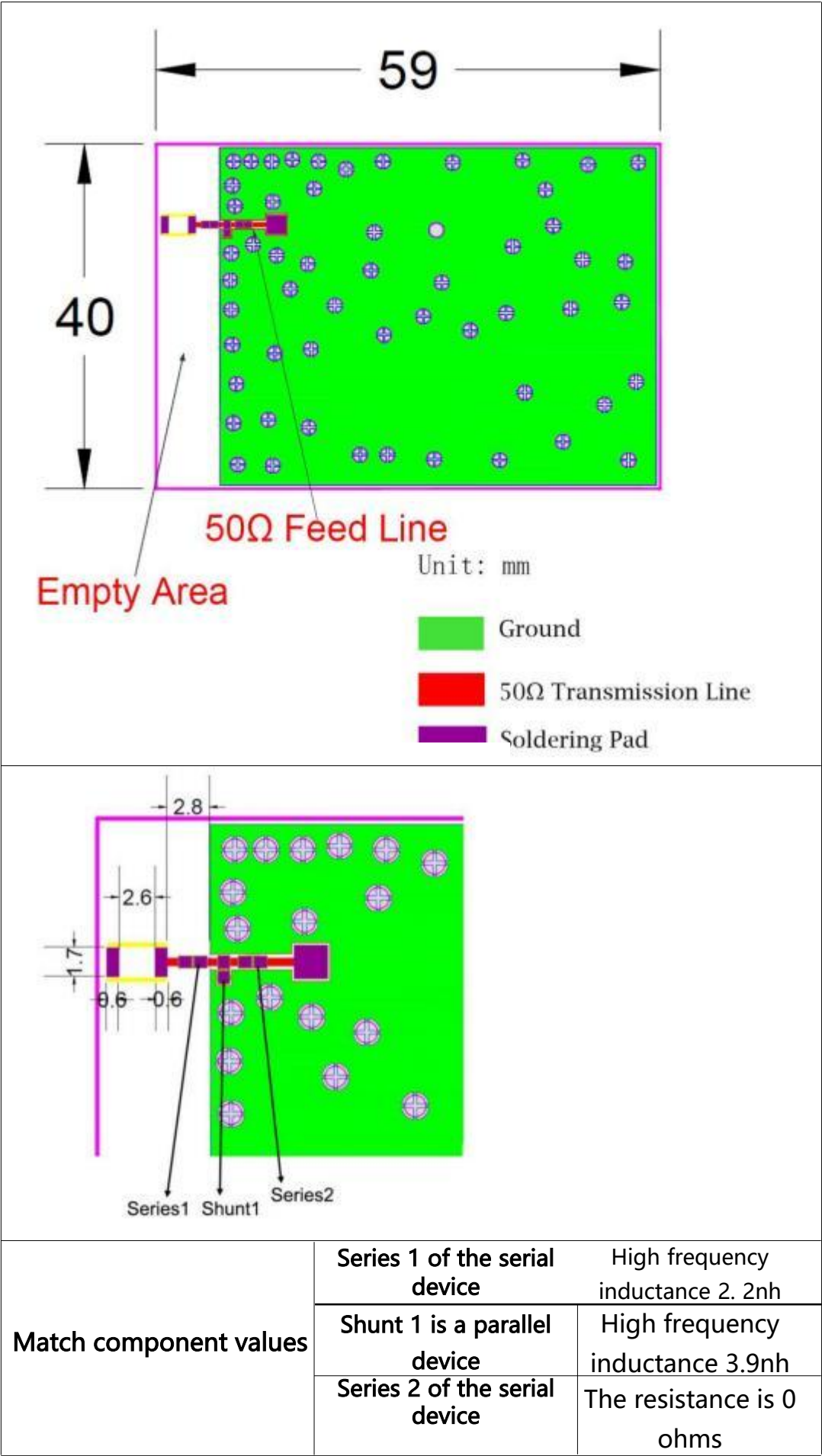
Z321612F245	Specification
Working frequency range Working Frequency	$2450 \pm 50\text{MHz}$
Bandwidth	$>100\text{MHz}$
Impedance	$50\ \Omega$
Gain (dBi)	3.85 (peak)
standing-wave ratio VSWR	<2
Operating temperature	$-40^{\circ}\text{C} \sim +95^{\circ}\text{C}$
Power capacity	3W

Antenna 2.4G working frequency needs to be achieved through impedance matching device debugging.

Antenna Pad and Wiring Design

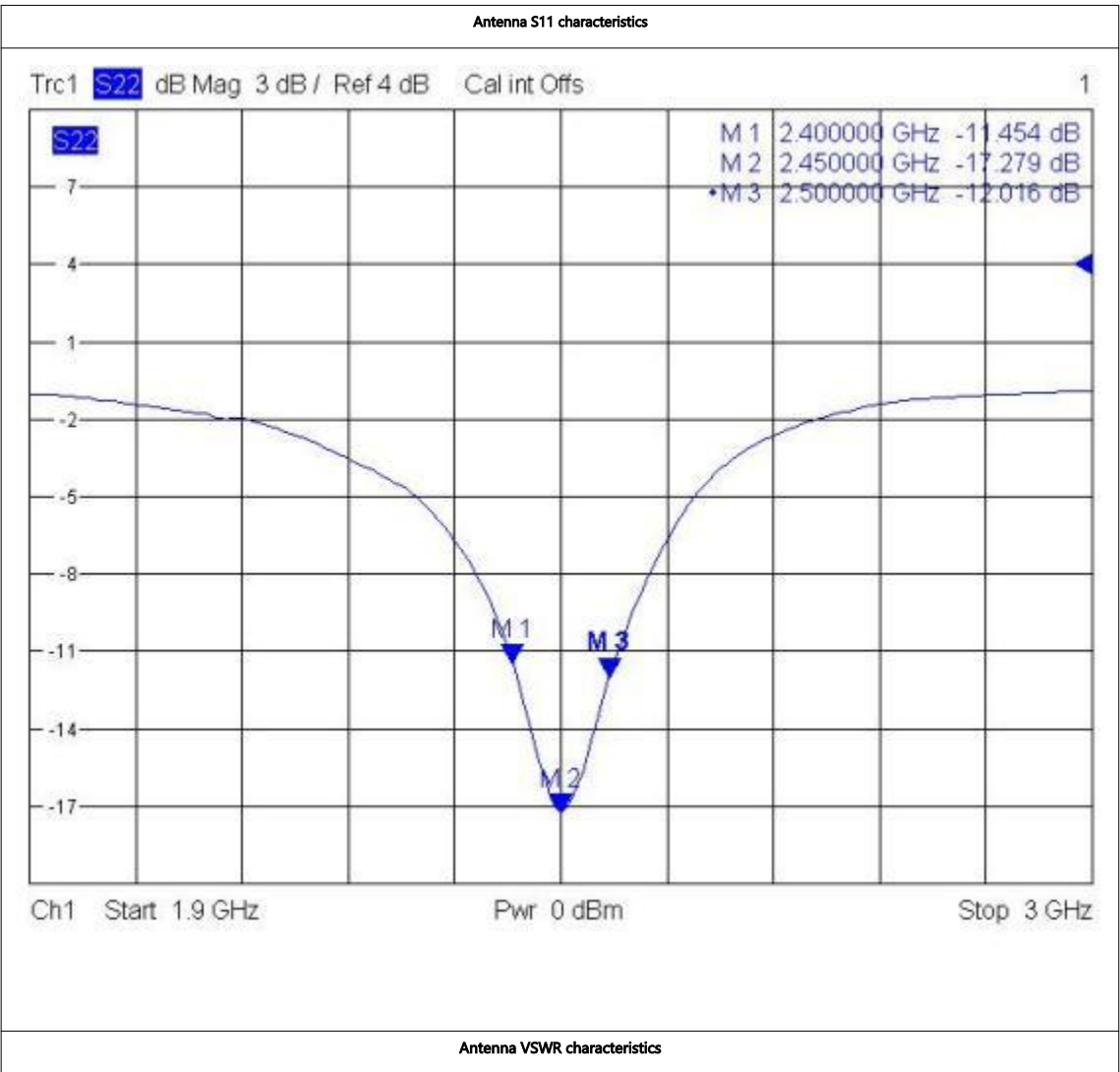
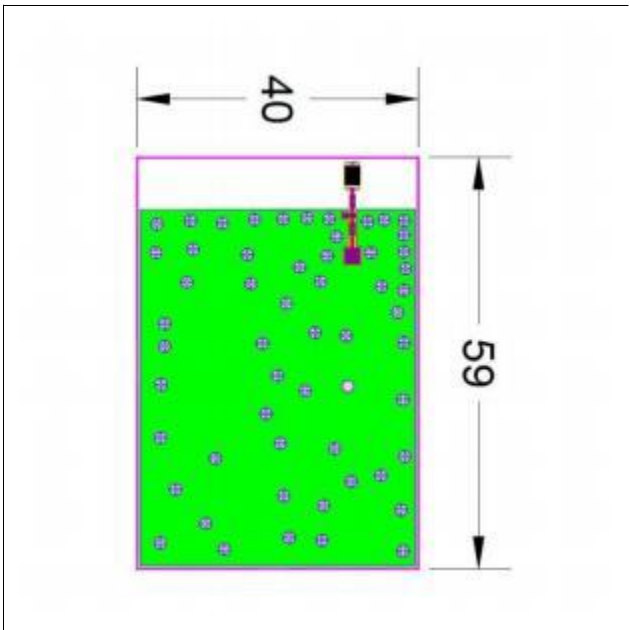


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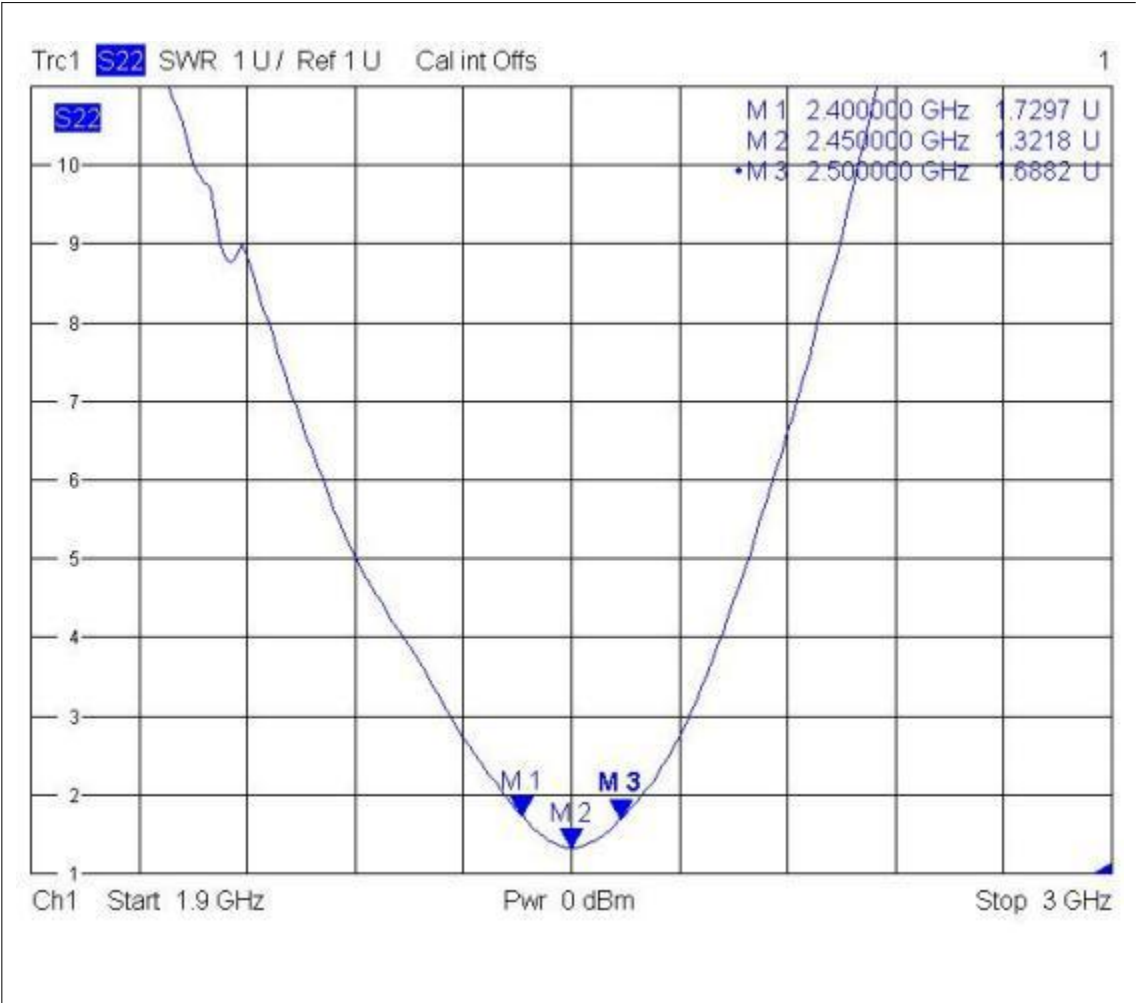


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Antenna test on test board (board thickness 1.0mm)

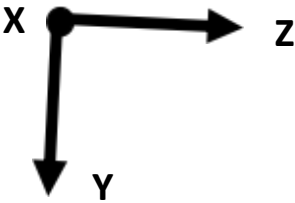
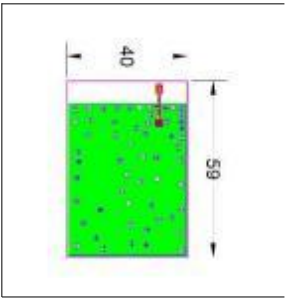


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Efficiency and Radiation Map

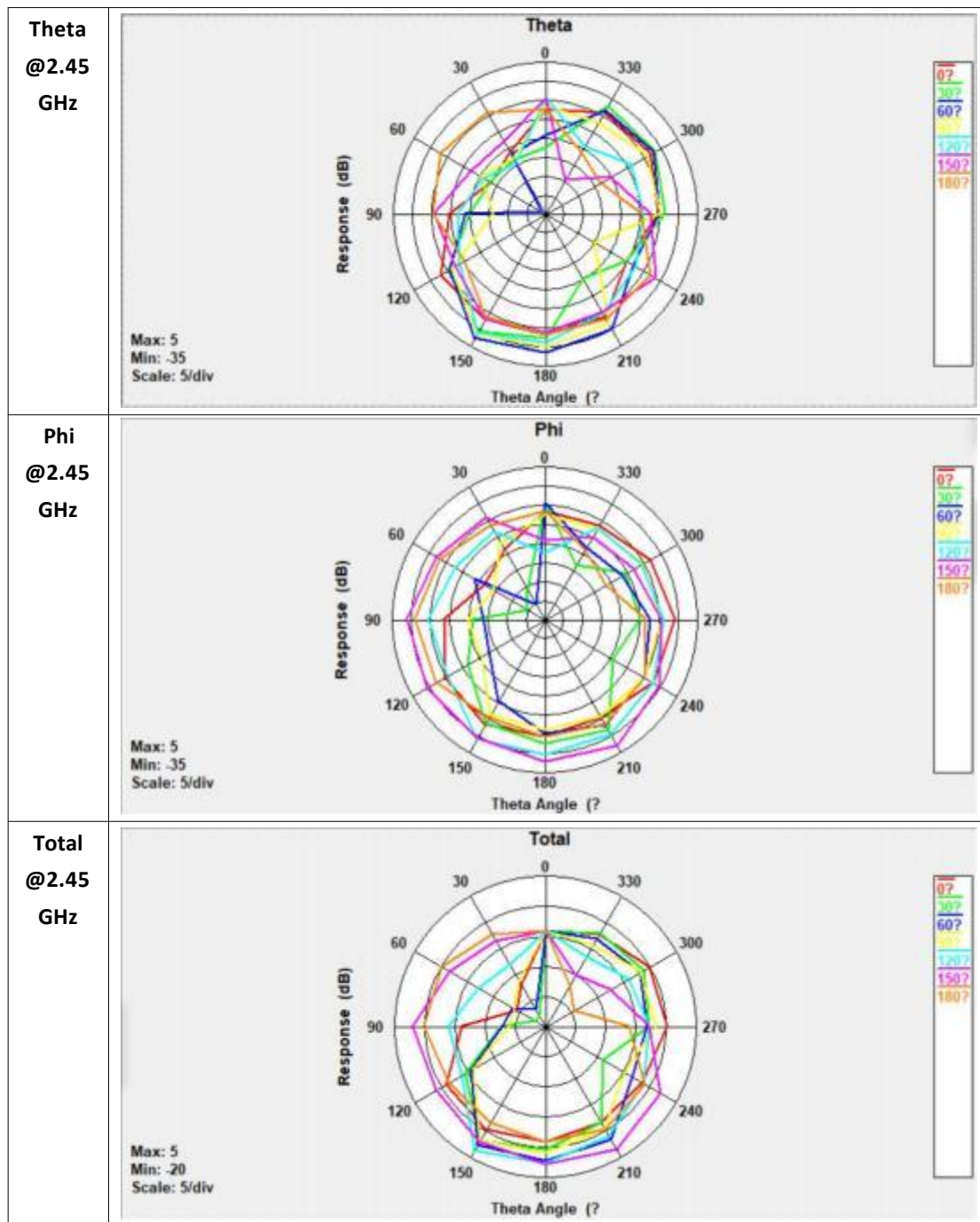
The performance metrics, including efficiency, radiation pattern, and gain, are derived from the test board design. The specification characteristics of the Z321612F245 antenna are based on the dimensions of the test PCB board and the test direction illustrated in the figure below. The following data were obtained after completing the ETS 3D microwave anechoic chamber tests.



Gain and efficiency	Bandwidth 2.4G-2.5GHz
Peak gain (Peak Gain)	3.85dBi
Average gain in the band Average Gain across the band	3.76dBi
Band gain range Gain Range across the band	3.53dBi~3.85dBi
Peak efficiency	63.2%
Average efficiency in the band	58.8%

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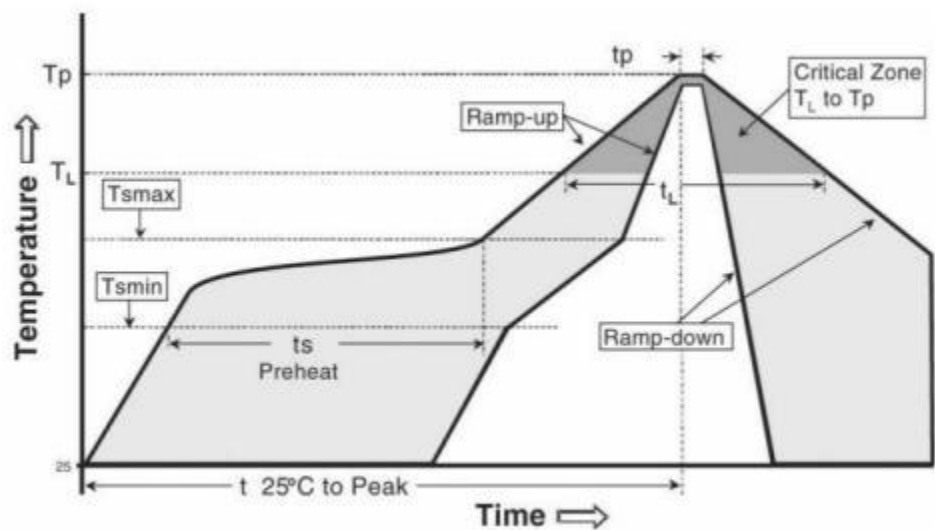
Average Efficiency across the band	
Band efficiency range	54.1%~63.2%
Efficiency Range across the band	



Welding Condition

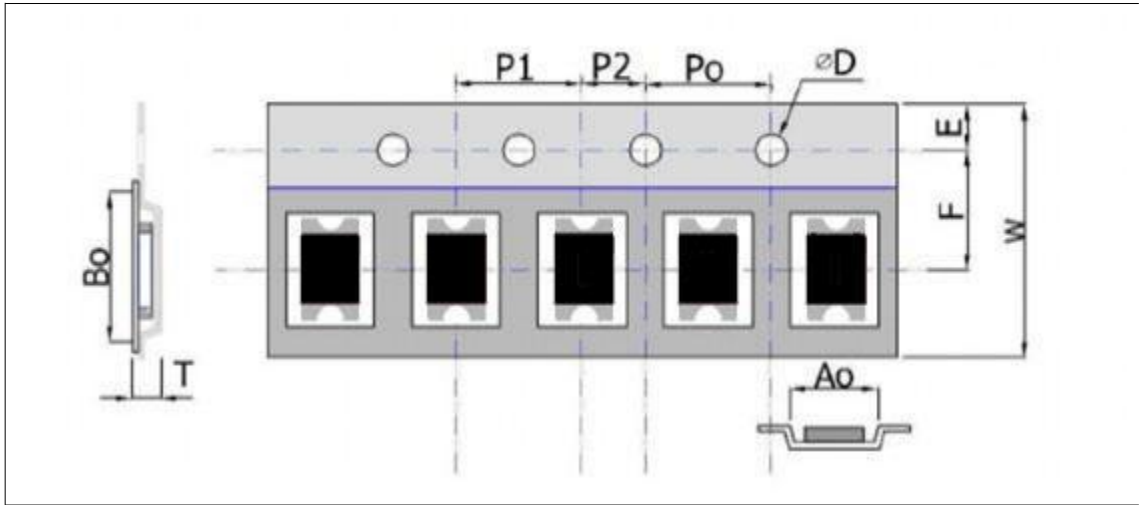
The typical welding specifications for reliable nondestructive testing are shown in the following figure:

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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

pack

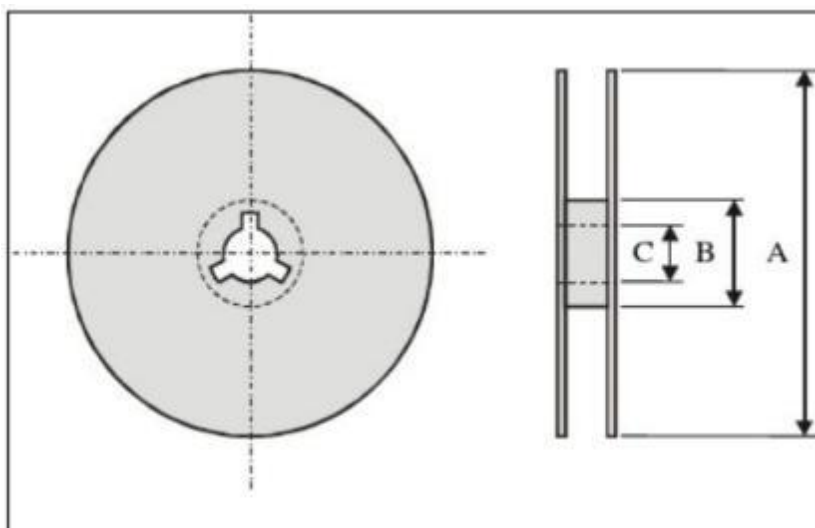


Specification of plastic tape (unit: mm)

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Index	Ao	Bo	ΦD	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	Po	P1	P2
Dimension (mm)	1.5 ± 0.1	5.4 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1

Roll Size



Index	A	B	C
Dimension(mm)	178	60	13.5

Standard quantity: 2500 PCS/ disk.

Storage Environment

The product shall be stored under the following conditions:

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

Humidity: 30% to 70% relative humidity

The product should not be placed in contact with corrosive gases such as sulfur. Chlorine or acid may cause the product electrode to oxidize and reduce weldability.

The product should be placed in the toolbox and avoid moisture and dust.

Products should be stored in the warehouse and avoid heat, vibration, direct sunlight.

Products should be stored under closed conditions.