

# SMD Antena Specification

OverAir® SMD Antena Series

RoHS Compliant

PN : OA-C07

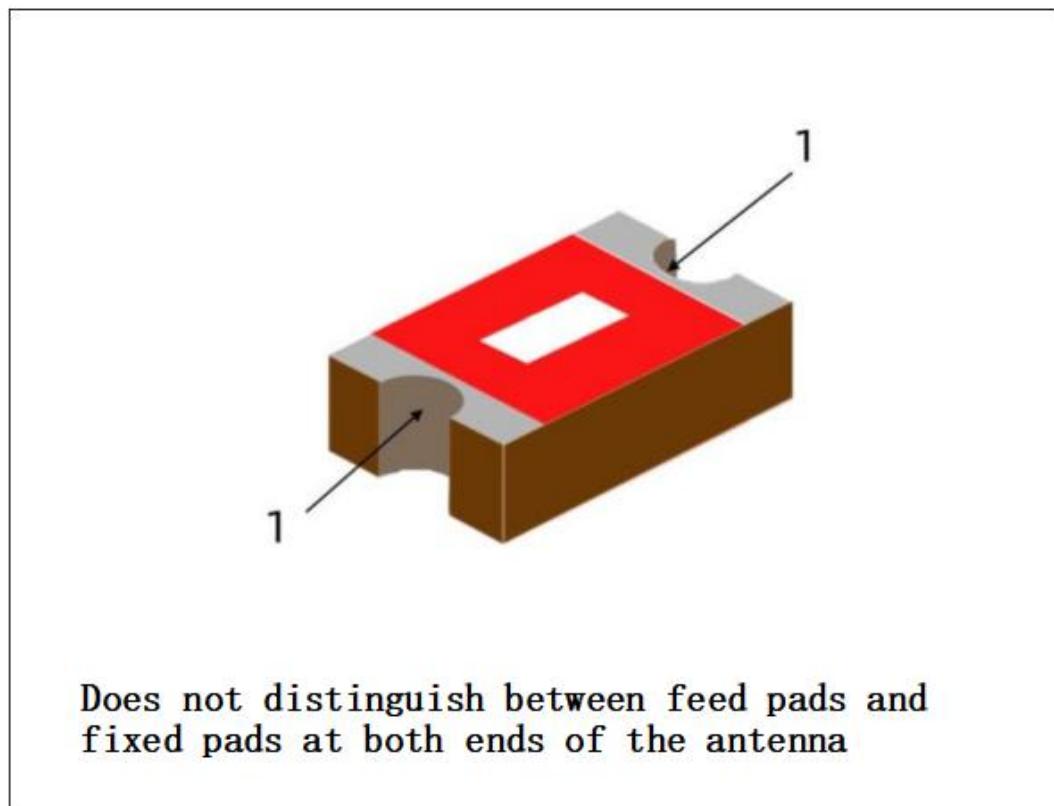
2.4GHz ISM band antenna

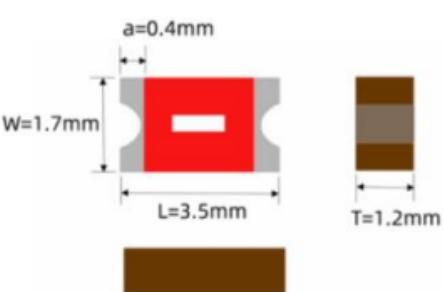
**Characteristic**

1. Size only 3.5X1.7 X 1.2 mm<sup>3</sup> small size SMD patch antenna.
2. Low energy loss, high antenna efficiency.
3. It has high stability when the temperature and humidity change.

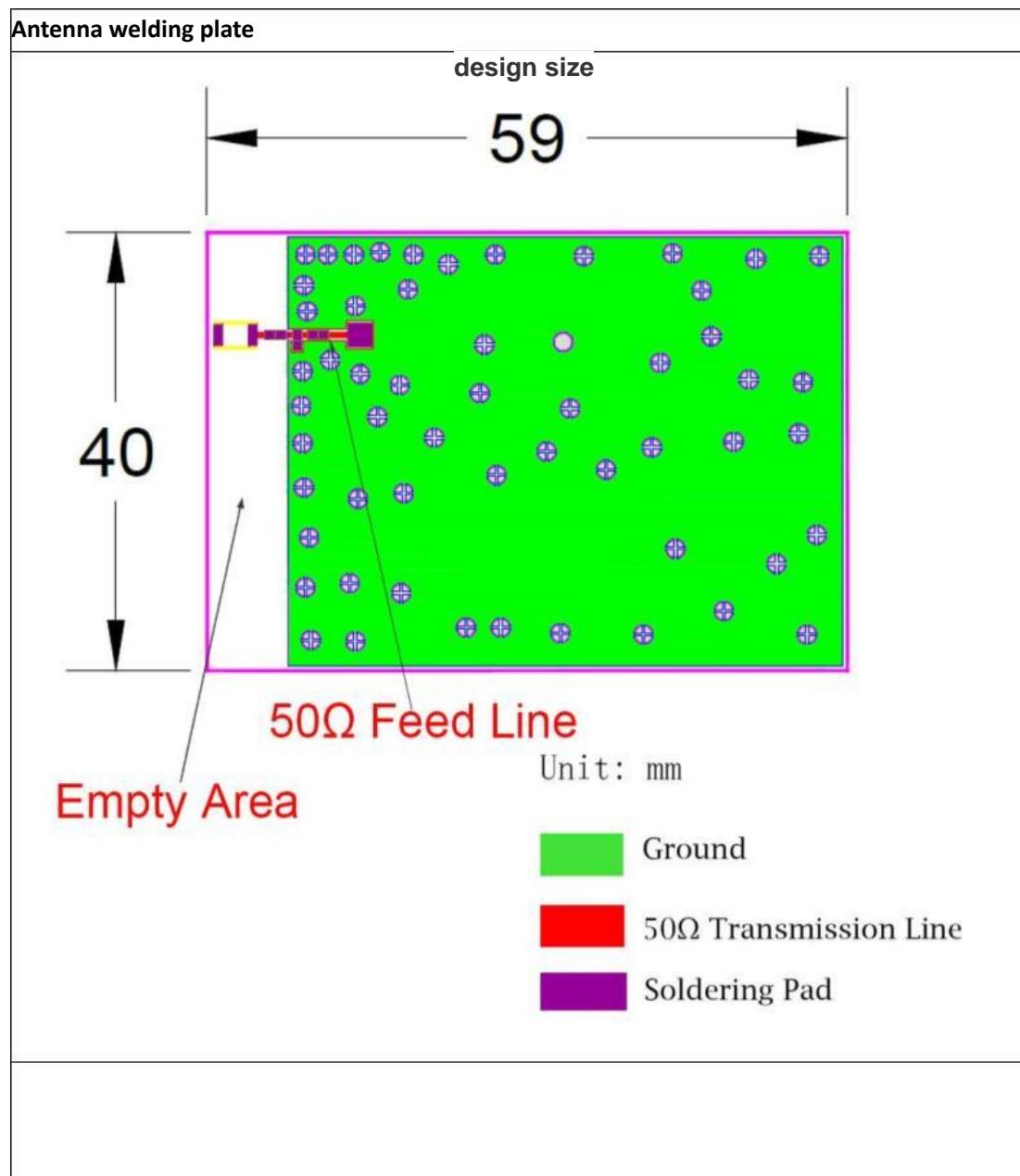
**Application**

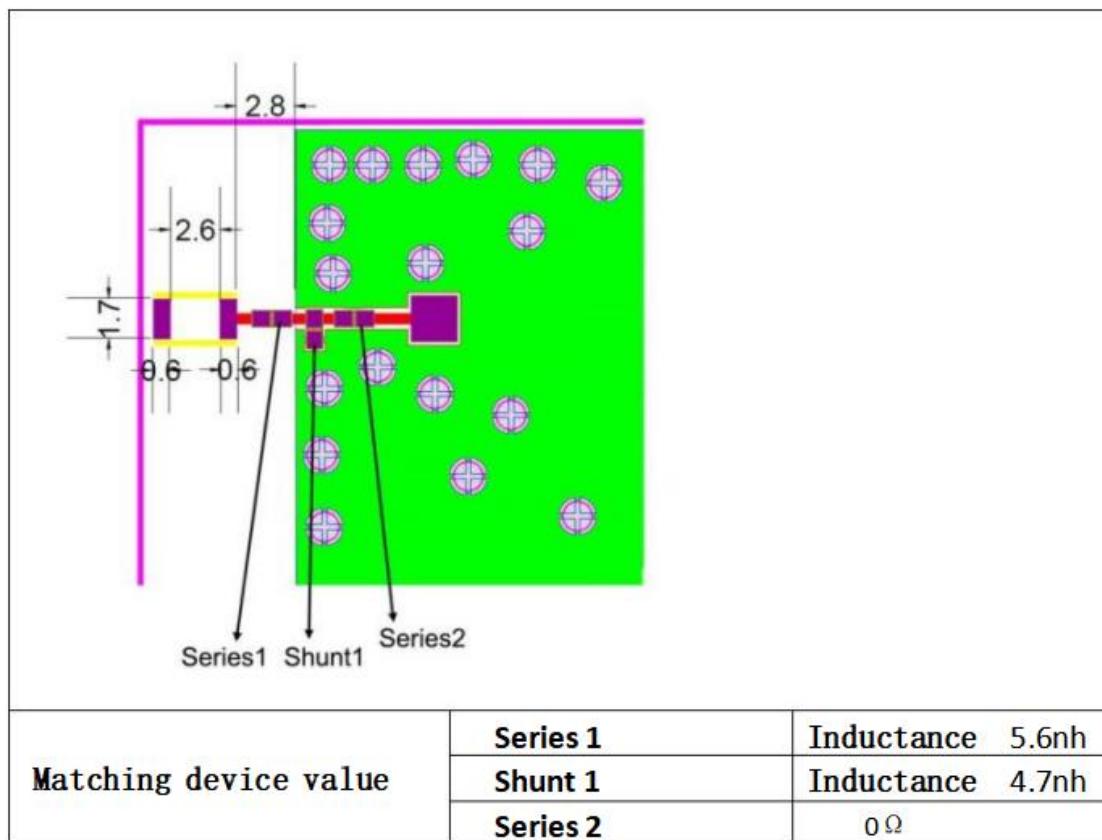
1. Application of 2.4GHz ISM Band Antenna.
2. Bluetooth, ZigBee, Wireless applications, Smart Home applications, etc.
3. WIFI (2.4G only).

**Structure****Size**

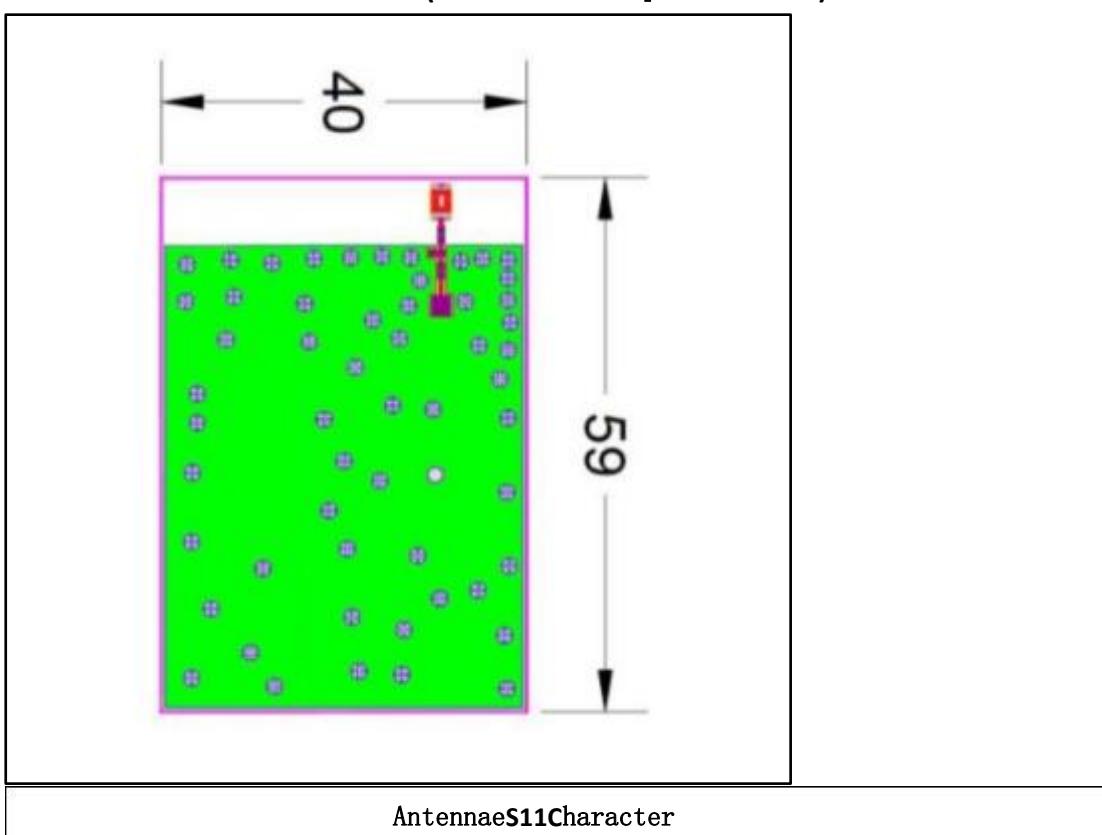
Three views	Symbol	Size(mm)
	L	3.5±0.2
	w	1.7±0.1
	T	1.2±0.1
	a	0.4±0.1

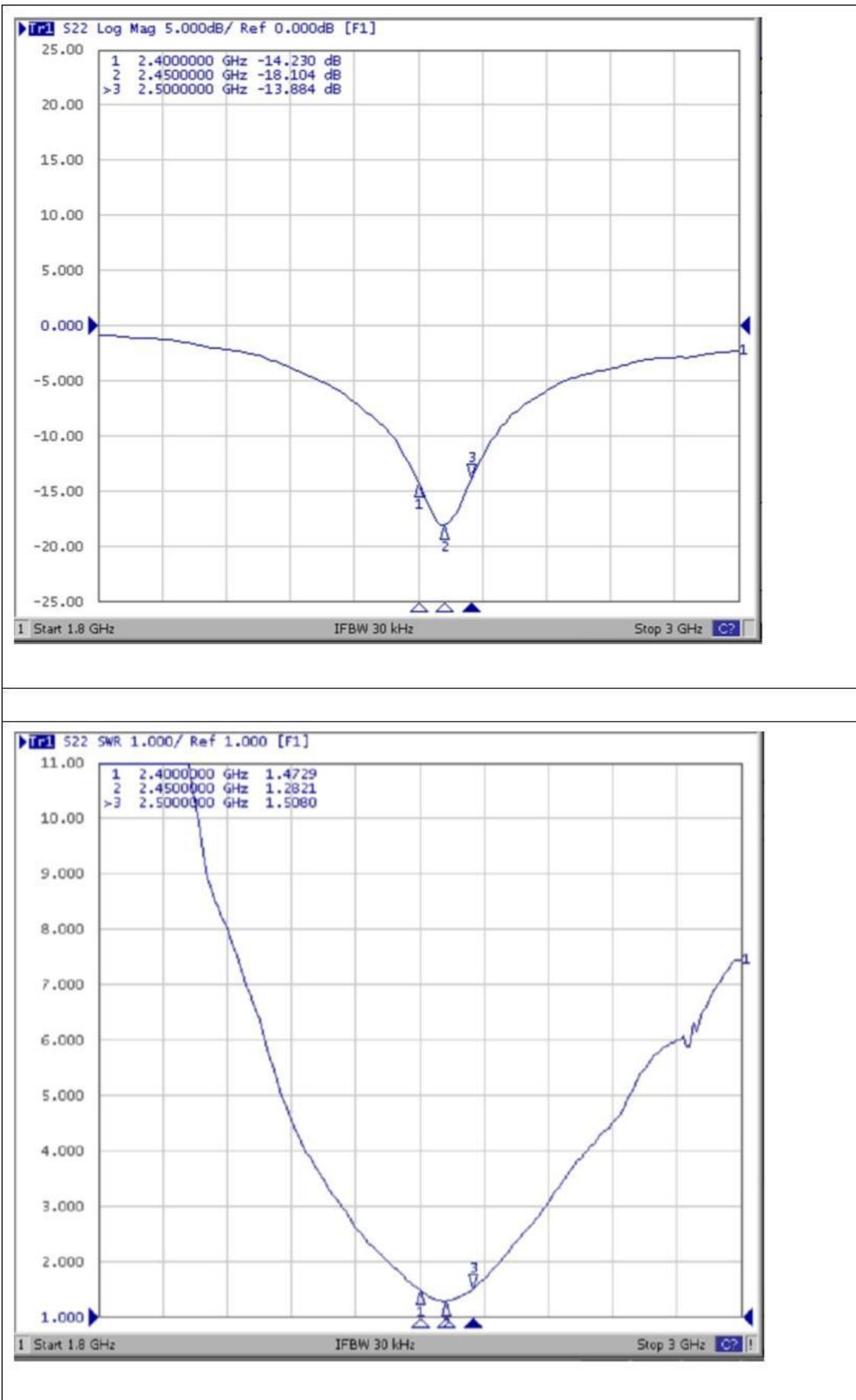
Electrical specification	
OA-C07	Specification
Working Frequency	2450±50MHz
The initial frequency(GHz)	2.9GHz
Band Width	>100MHz
Impedance	50Ω
Gain(dBi)	3.74 (peak)
VSWR	<2
Operation Temperature	-40°C~+95°C
Power Capacity	3W





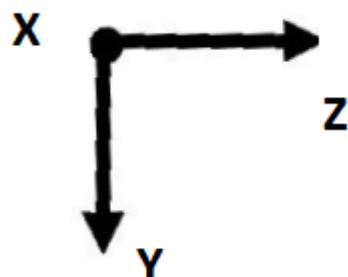
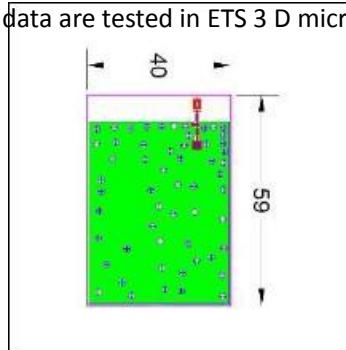
Antenna test on test board(thickness of plate 1.0mm)



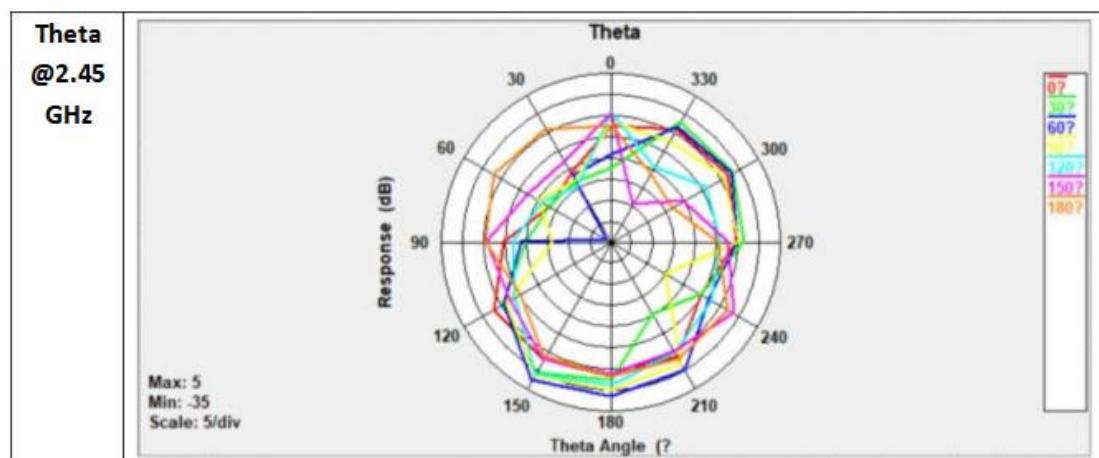


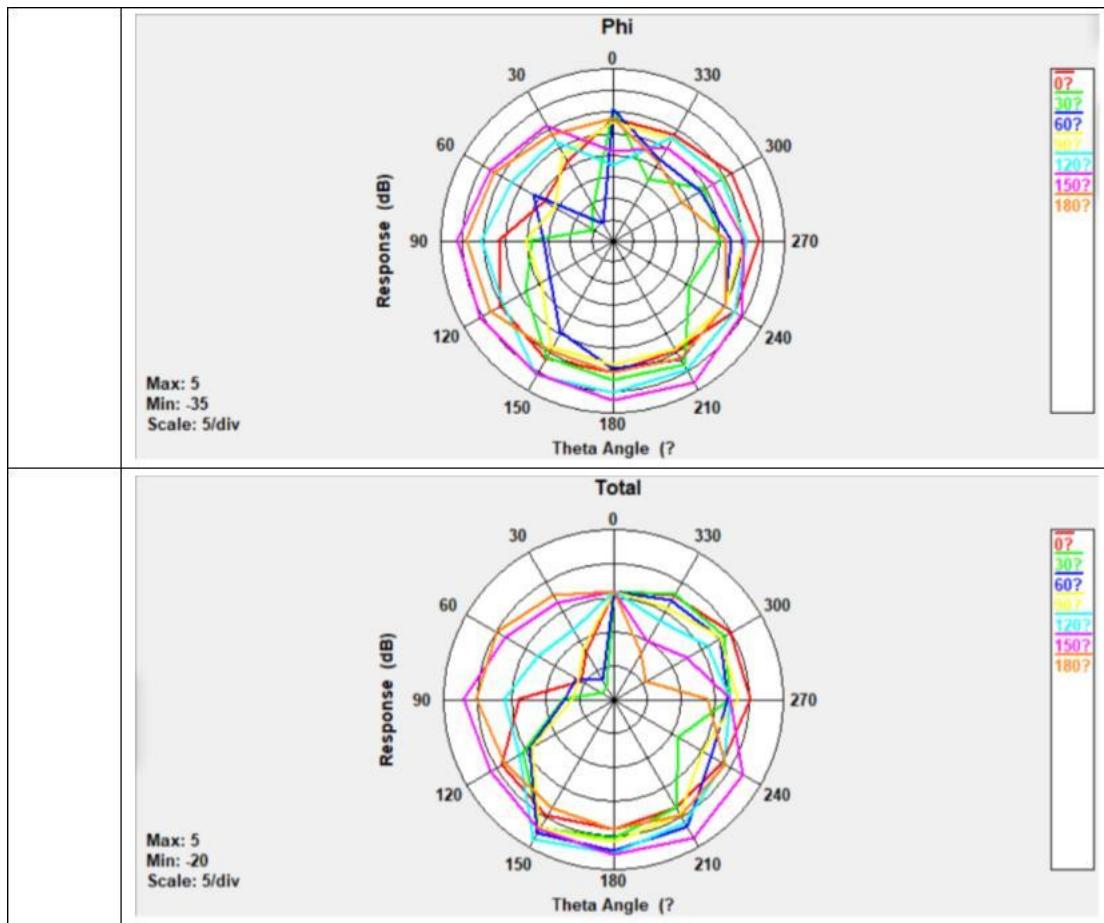
**Efficiency and radiation map**

The performance of efficiency, radiation diagram, gain and so on is based on the design of test board. The test data of the specification and characteristics of the OA-C07 antenna are based on the size of the PCB board and the test direction shown in the following figure. The following data are tested in ETS 3 D microwave anechoic chamber.



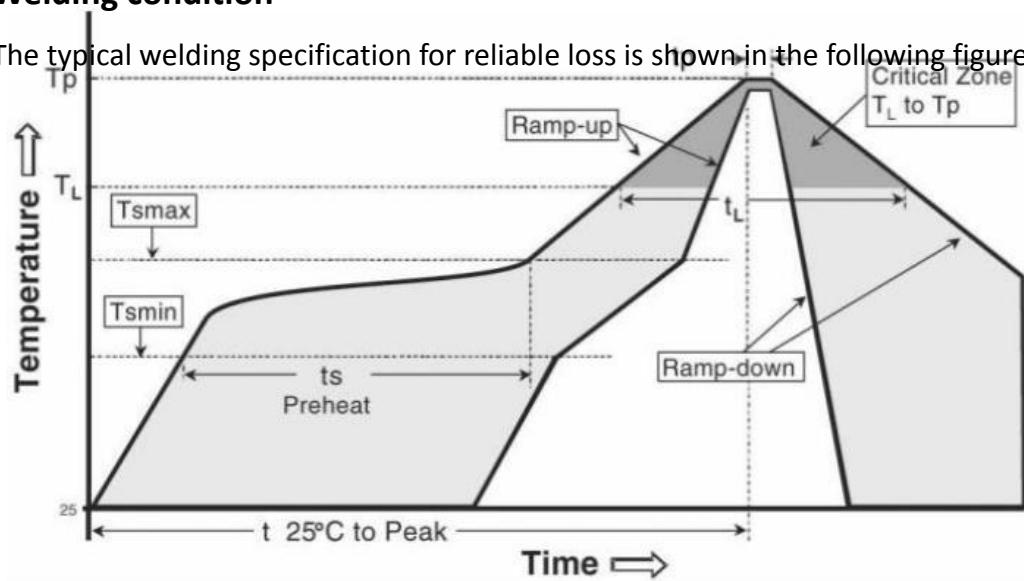
<b>Gain and efficiency</b>	<b>Broad Band 2.4G-2.5GHz</b>
<b>Peak Gain</b>	<b>3.74dBi</b>
<b>Average Gain across the band</b>	<b>3.66dBi</b>
<b>Gain Range across the band</b>	<b>3.42dBi~3.74dBi</b>
<b>Peak Efficiency</b>	<b>58.9%</b>
<b>Average Efficiency across the band</b>	<b>55.9%</b>
<b>Efficiency Range across the band</b>	<b>53.0%~58.9%</b>



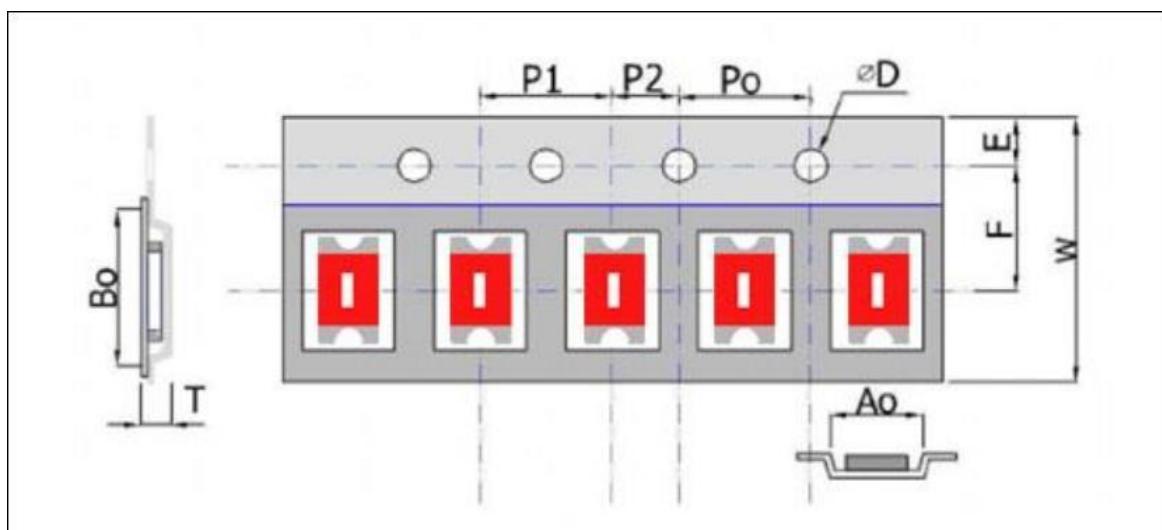


## Welding condition

The typical welding specification for reliable loss is shown in the following figure:



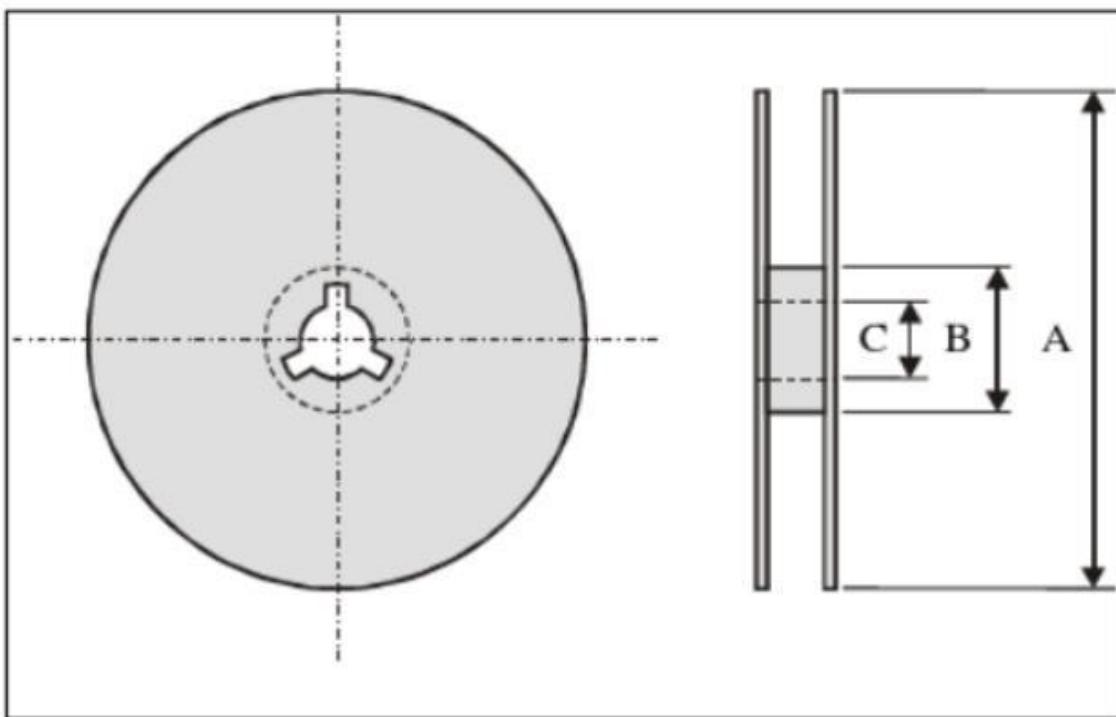
Phase	Profile features	Pb-Free assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate (Tsmax to Tp)	3 °C / second (max.)
PREHEAT	<ul style="list-style-type: none"> <li>- Temperature Min (Tsmin)</li> <li>- Temperature Max (Tsmax)</li> <li>- Time (tsmin to tsmax)</li> </ul>	150 °C 200 °C 60-180 seconds
REFLOW	<ul style="list-style-type: none"> <li>- Temperature (TL)</li> <li>- Total Time above TL (tL)</li> </ul>	217 °C 60-150 seconds
PEAK	<ul style="list-style-type: none"> <li>- Temperature (Tp)</li> <li>- Time (tp)</li> </ul>	260 °C 20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max



Plastic carrier tape specification (Units: mm)

Index	Ao	Bo	ΦD	T	W
Dimension (mm)	<b>2.0±0.1</b>	<b>4.0±0.1</b>	<b>1.55±0.05</b>	<b>1.8±0.1</b>	<b>12±0.1</b>
Index	E	F	Po	P1	P2
Dimension (mm)	<b>1.5±0.1</b>	<b>5.4±0.1</b>	<b>4.0±0.1</b>	<b>4.0±0.1</b>	<b>2.0±0.1</b>

Reel size



Index	A	B	C
Dimension(mm)	300	100	13.5

**Denominator volume:** 300PCS/dish

### Storage environment

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

1. Temperature: -10°C~+40°C.
2. Humidity: 30% ~ 70% relative humidity.
3. Do not contact corrosive gases, such as sulfur, where the product is placed. Chlorine or acid may cause the electrode oxidation of the product to cause the weldability to deteriorate.
4. The product should be placed in the toolbox and avoid the influence of moisture and dust.
5. The products should be stored in the warehouse and avoid heat, vibration and direct sunlight.
6. Products should be stored in closed conditions.