APPROVAL SHEET

OverAir™ SMD Antenna series
RoHS Compliance

PN: OA-W01

2.4G/5G WIFI band antenna

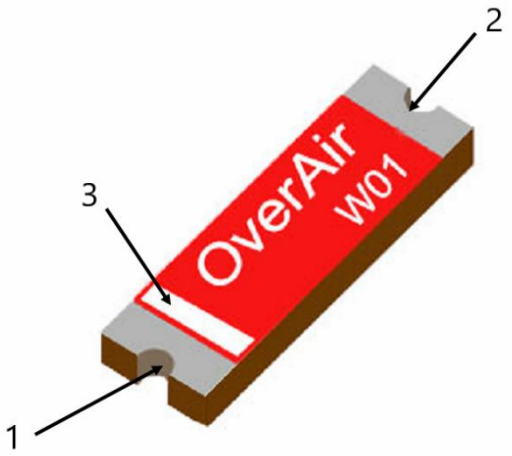
FEATURES

1. Surface Mounted Devices (SMD) with a small dimension of 8.0 X 3.0 X 1.0 mm^3 meet miniaturization trend.
2. Low power loss and high antenna efficiency.
3. High stability in Temperature and Humidity Change.

APPLICATIONS

1. 2.4G/5G WIFI band RF applications
2. WIFI（2.4G/5G）

CONSTRUCTION

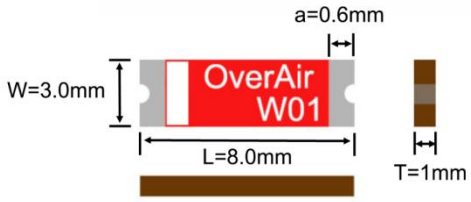


1、Antenna Feeding

2、Soldering terminal

3、Identification Mark

DIMENSIONS

Figure	Symbol	Dimension(mm)
	L	8.0±0.1
	w	**3.0**±0.1
	T	**1.0**±0.1
	a	**0.6**±0.1

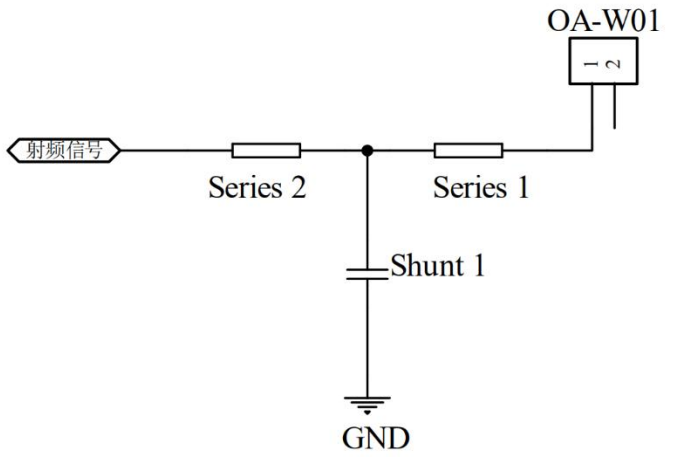
ELECTRICAL CHARACTERISTICS

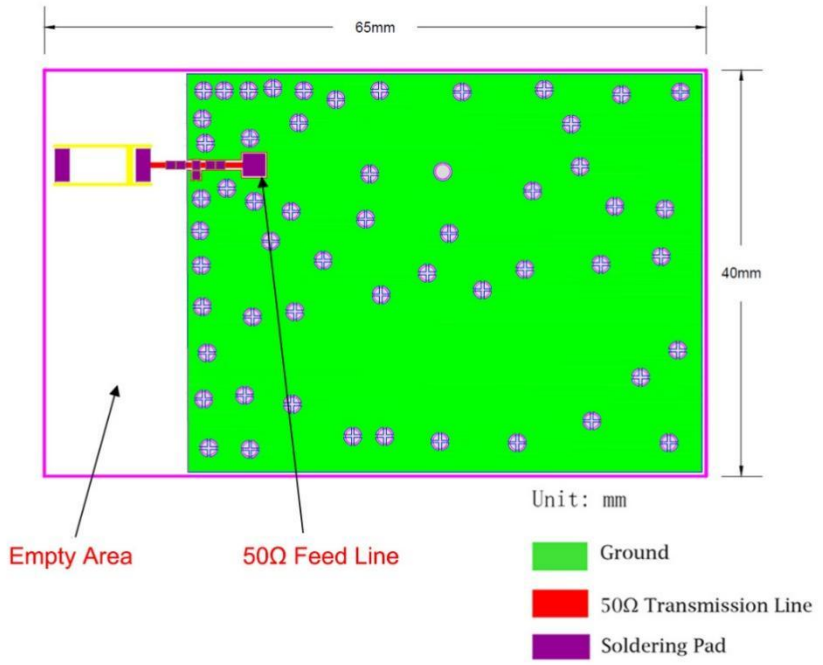
OA-W01	Specification
Working Frequency Range	2400-2500MHz，5200-5800MHz
Impedance	50 Ω
Gain(dBi)	3.3dBi（2.45GHz），1.0dBi（5.5Ghz）
VSWR	<2
Operation Temperature	-40℃~+85℃
Power Capacity	3W

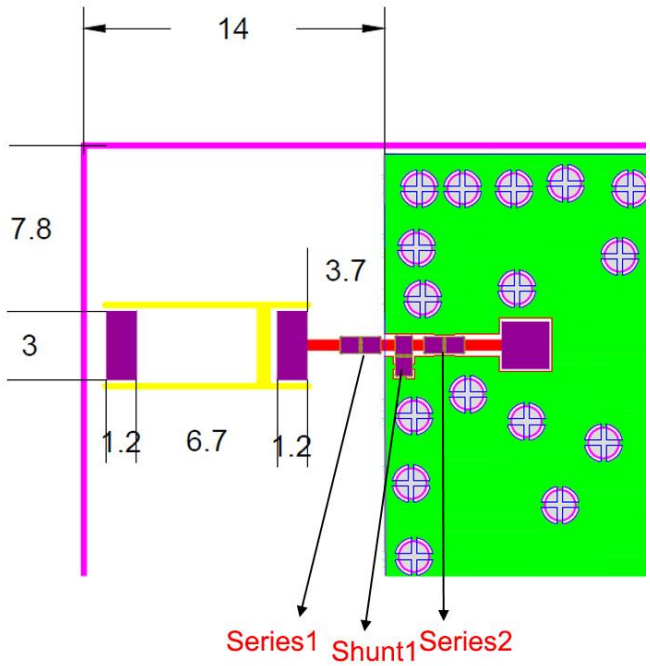
The working frequency need be adjusted to 2.45GHz with matching circuit.

SOLDER LAND PATTERN DESIGN

Figure

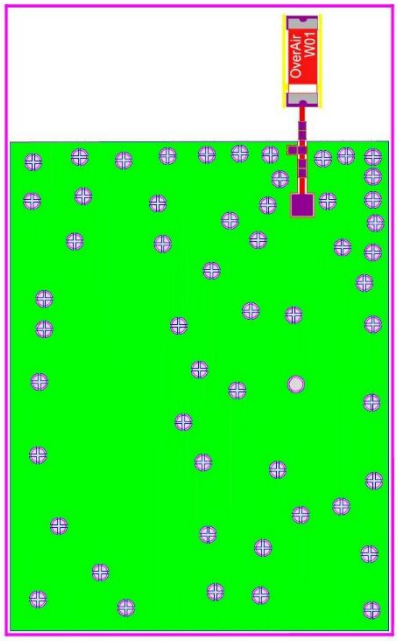




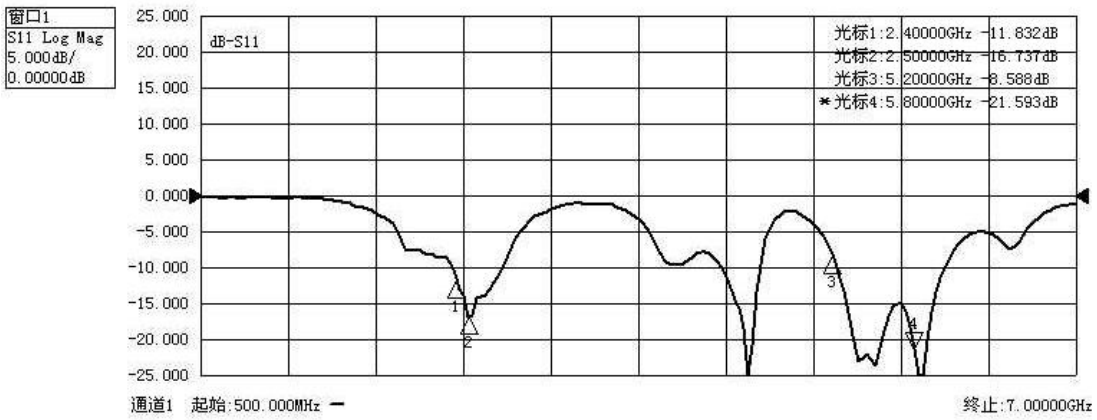


Matching component value	**Series 1**	0 Ω
	Shunt 1	NC
	Series 2	0 Ω

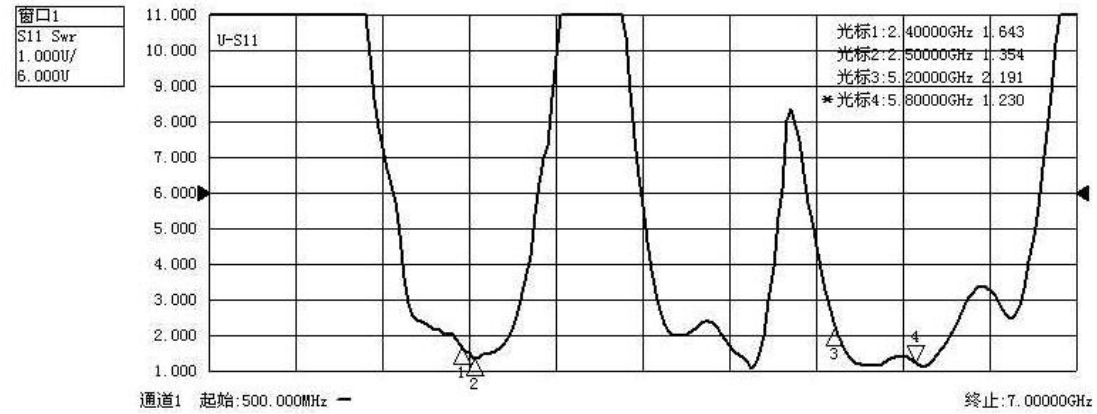
Antenna on Test Board (Thickness 1.0mm)



Antenna S11 on Test Board

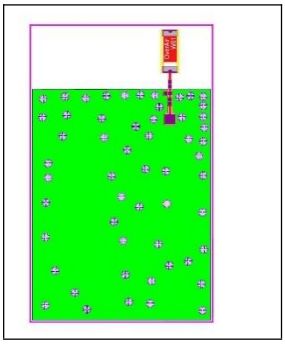


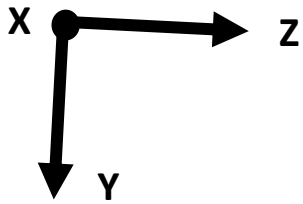
Antenna VSWR on Test Board



Efficiency and RADIATION PATTERN

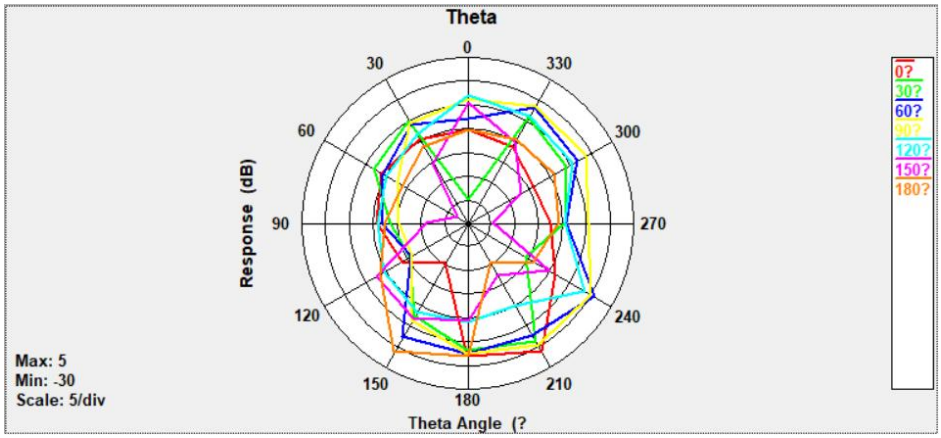
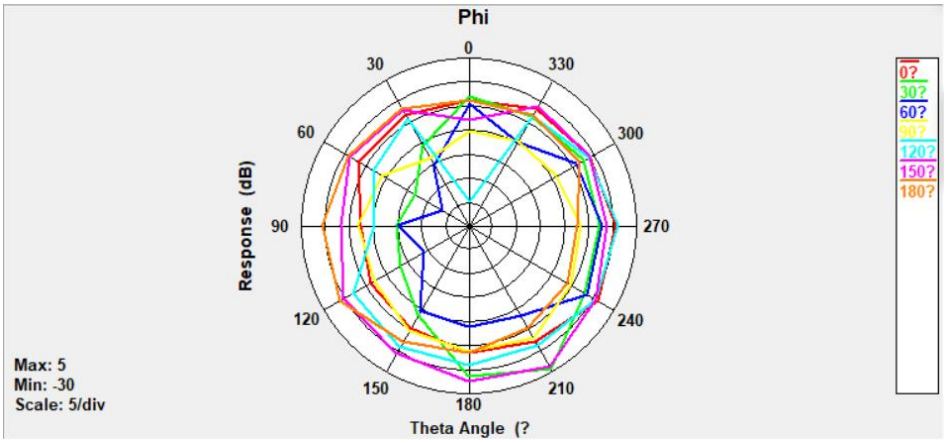
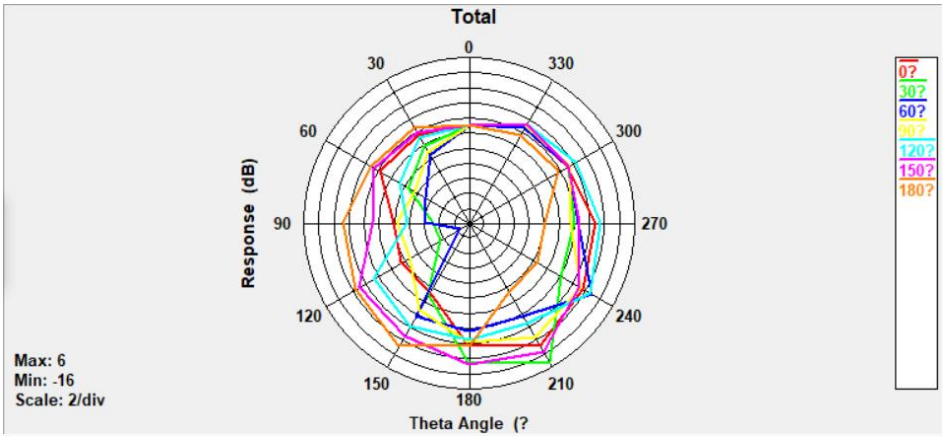
Efficiency， Radiation Pattern and Gain were dependent on measurement board design. The specification of CA-C03 antenna was measured based on the PCB size and installation position as shown in the below figure test board. The test results were tested in ETS 3D Chamber.

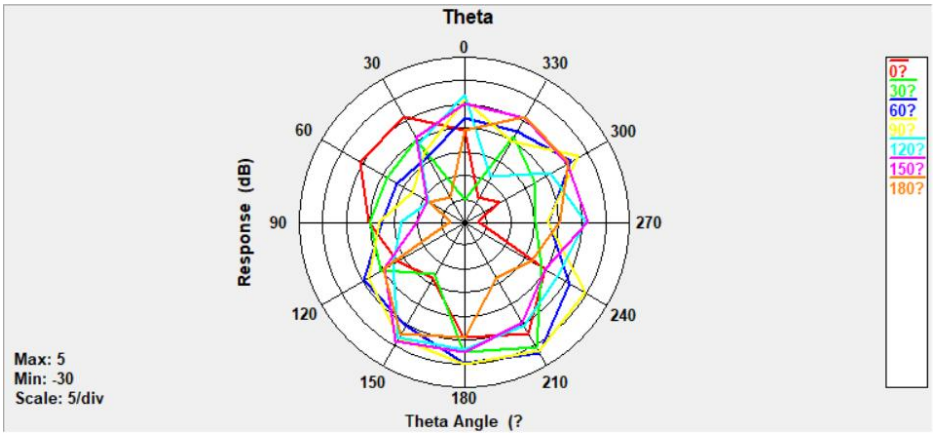
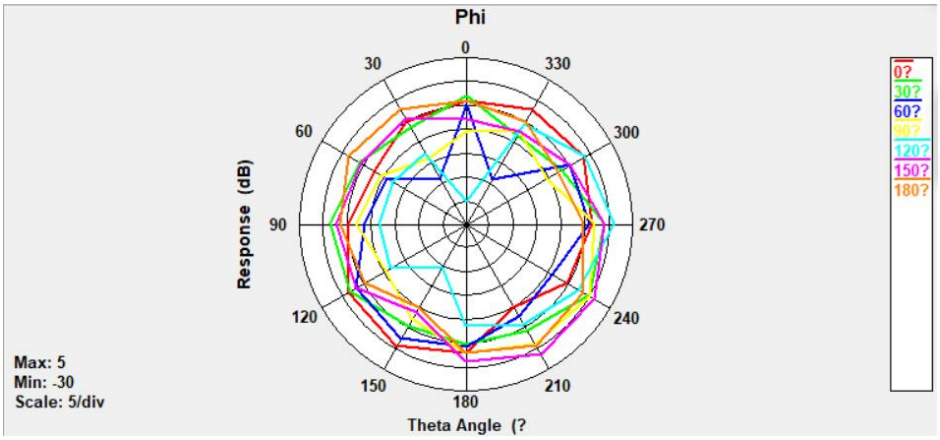
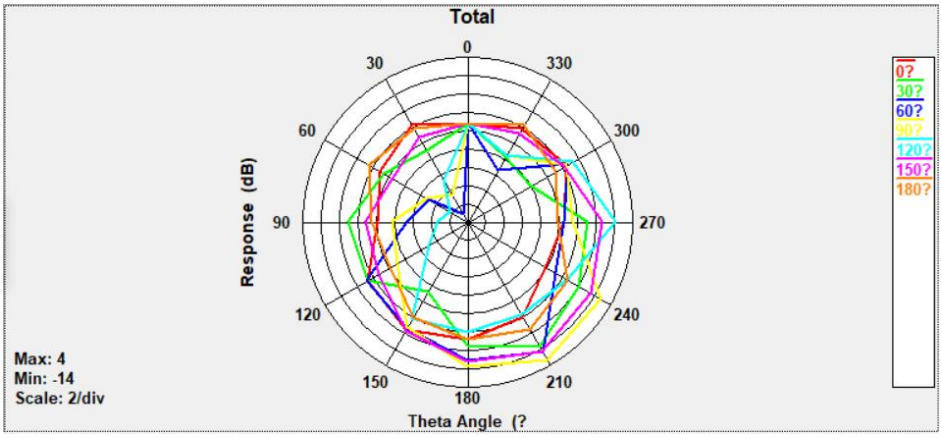




Gain and Efficiency	2.4G-2.5GHz	5.2G-5.8GHz
Peak Gain	3.3dBi	1.0
Average Gain across the band	3.0dBi	0.48
Gain Range across the band	2.6dBi~3.3dBi	-0.7dBi~1.0dBi
Peak Efficiency	73.3%	54.5%

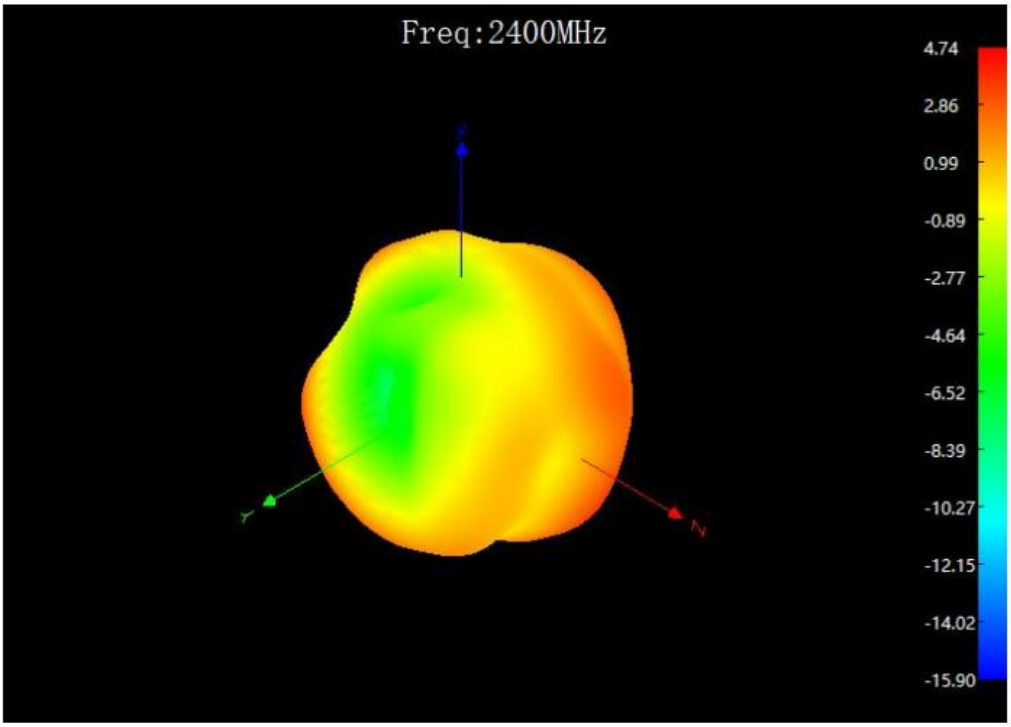
Average Efficiency across the band	68.4%	42.2%
Efficiency Range across the band	63.8%~73.3%	32.4%~54.5%

Theta @2.45 GHz	
Phi @2.45 GHz	
Total @2.45 GHz	

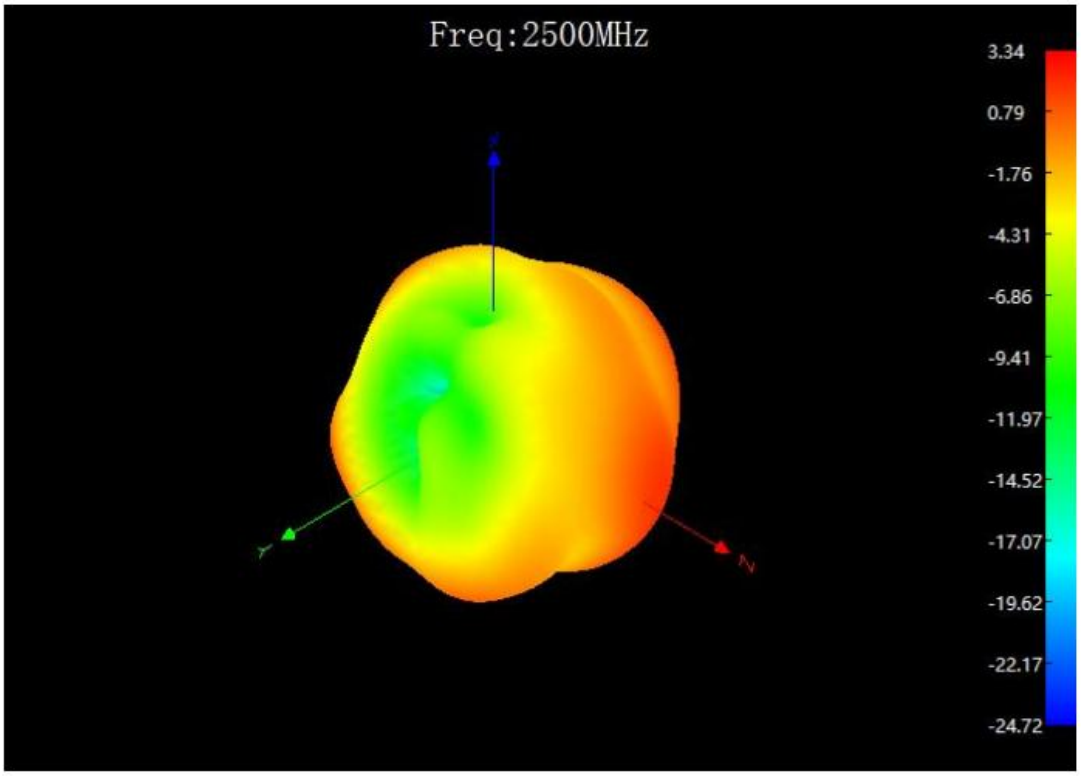
Theta @5.5 GHz	
Phi @5.5 GHz	
Total @5.5 GHz	

3D

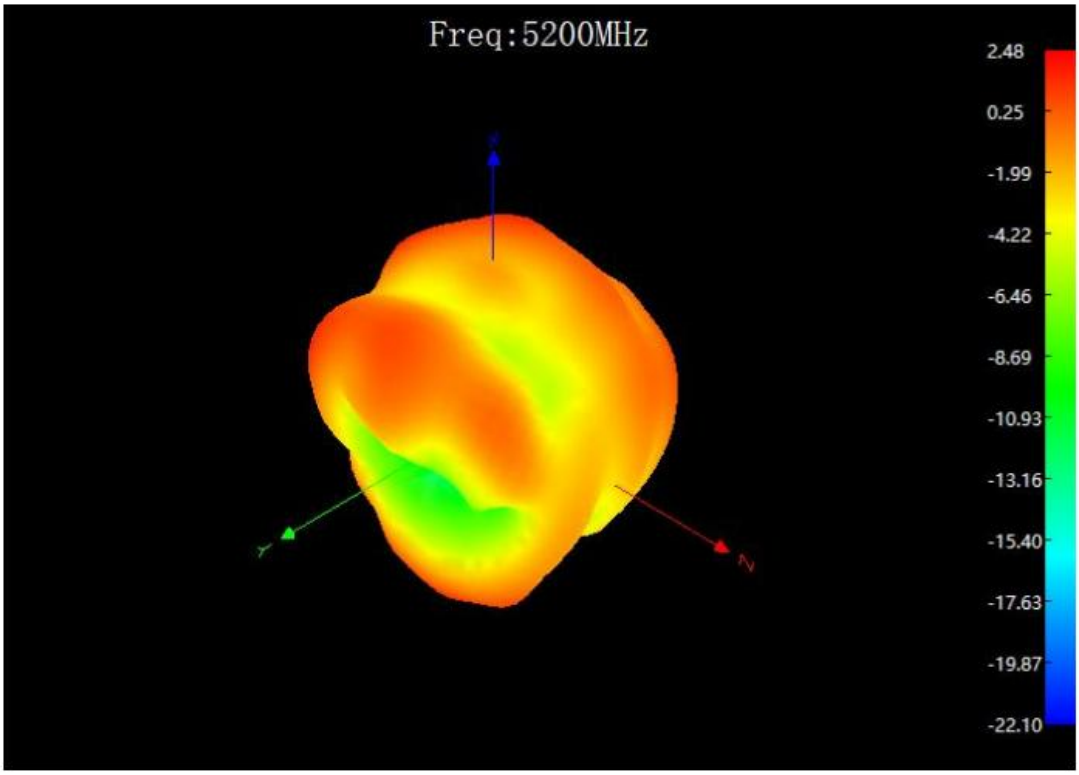
@2.4Ghz


Freq:2400MHz
4.74
2.86
0.99
-0.89
-2.77
-4.64
-6.52
-8.39
-10.27
-12.15
-14.02
-15.90

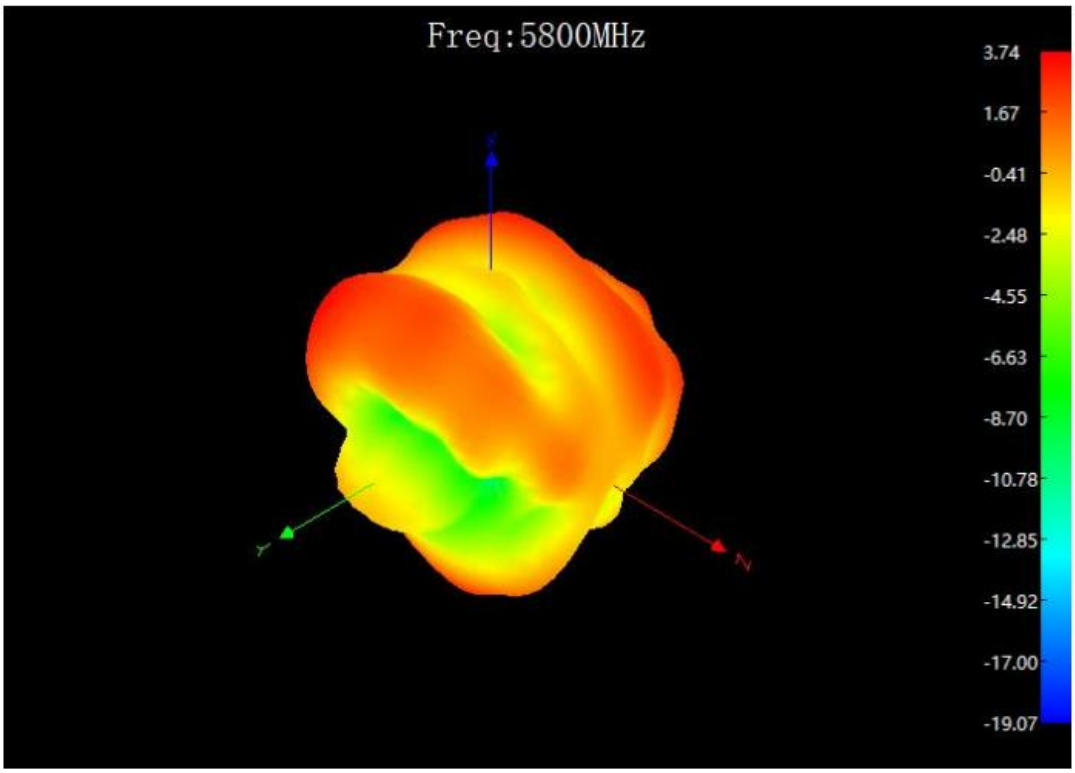
@2.5Ghz


Freq:2500MHz
3.34
0.79
-1.76
-4.31
-6.86
-9.41
-11.97
-14.52
-17.07
-19.62
-22.17
-24.72

@5.2Ghz

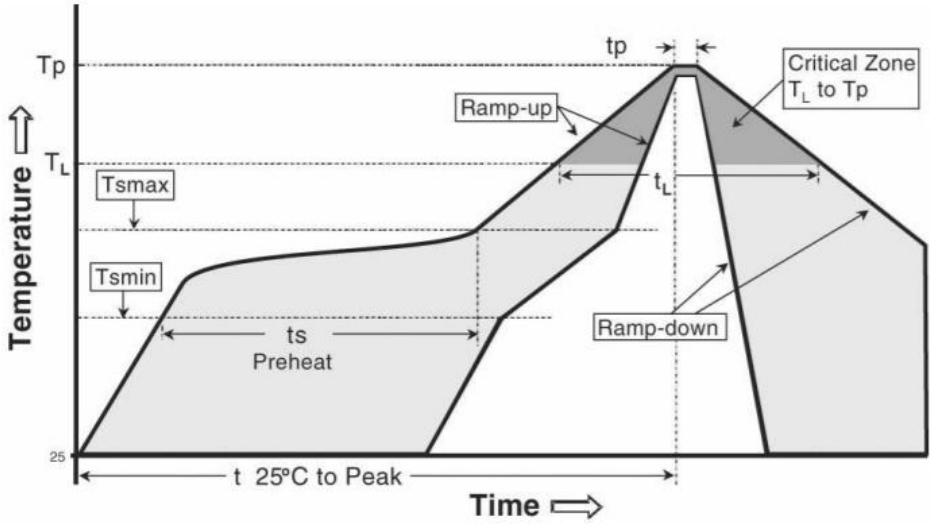


@5.8Ghz



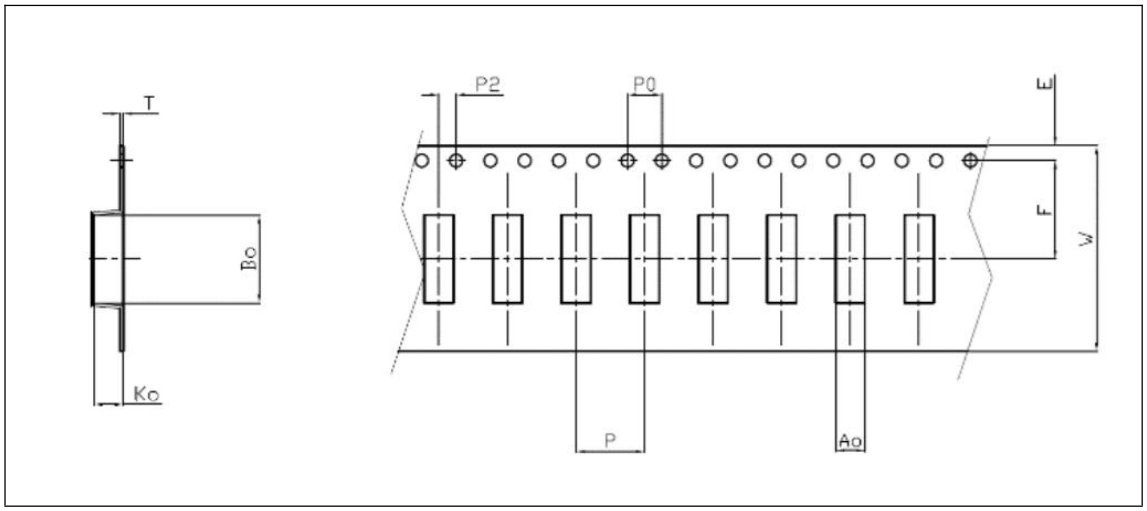
SOLDERING CONDITION

Typical examples of soldering processes that provide reliable joints without any damage is as follows:



Phase	Profile features	Pb-Free assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate (Tsmax to Tp)	3 °C / second (max.)
PREHEAT	- Temperature Min (Tsmin) - Temperature Max (Tsmax) - Time (tsmin to tsmax)	150 °C 200 °C 60-180 seconds
REFLOW	- Temperature (TL) - Total Time above TL (tL)	217 °C 60-150 seconds
PEAK	- Temperature (Tp) - Time (tp)	260 °C 20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max

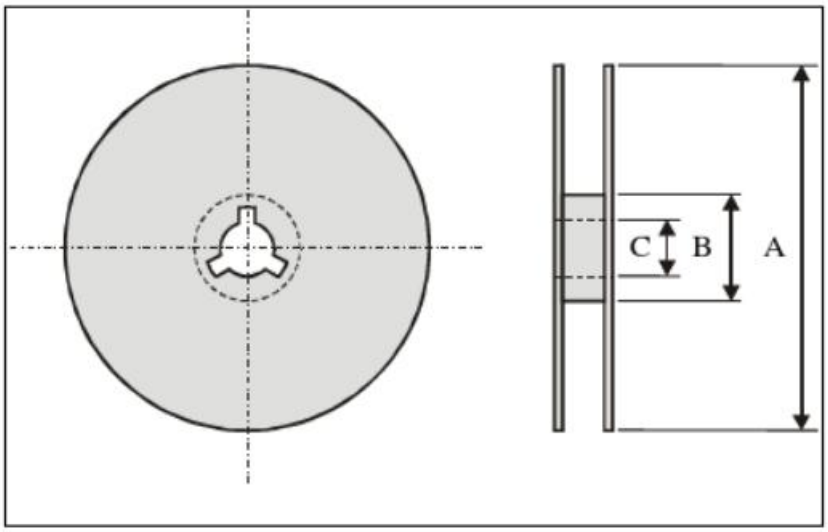
PACKAGING



Plastic Tape specification (unit:mm**)**

Index	Ao	Bo	ΦD	T	W
Dimension (mm)	**3.3±0.1**	**8.4±0.1**	**1.3±0.05**	**0.3±0.05**	**16.0±0.3**
Index	**E**	**F**	**Po**	**P1**	**P2**
Dimension (mm)	**1.75±0.1**	**7.0±0.1**	**8.0±0.1**	**4.0±0.1**	**2.0±0.1**

Reel dimensions



Index	A	B	C
Dimension(mm)	**330**	**100**	**13.5**

Typing Quantity: 2000 pieces per reel.

CAUTION OF HANDLING

Storage environment condition

Products shoud be storage in the warehouse on the following conditions:

Temperature : -10℃~+40℃

Humidity : 30% to 70% relative humidity

Don't keep products in corrosive gases such as sulfur. Chlorine gas or acid or it may cause oxidization of electrode, resulting in poor solderability.

Products should be storage on the palette for the prevention of the influence from humidity, dust and so on.

Products should be storage in the warehouse without heat shock, vibration, direct sunlight and so on.

Products should be storage under the airtight packaged condition.