

APPROVAL SHEET

OverAir™ SMD Antenna series
RoHS Compliance

PN: OA-W01

2.4G/5G WIFI band antenna

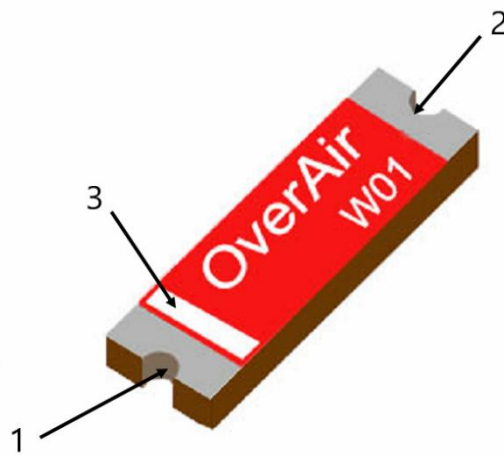
FEATURES

1. Surface Mounted Devices (SMD) with a small dimension of 8.0 X 3.0 X 1.0 mm³ 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 only)

CONSTRUCTION

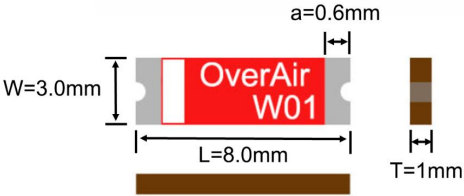


1、Antenna Feeding

2、Soldering terminal

3、Identification Mark

DIMENSIONS

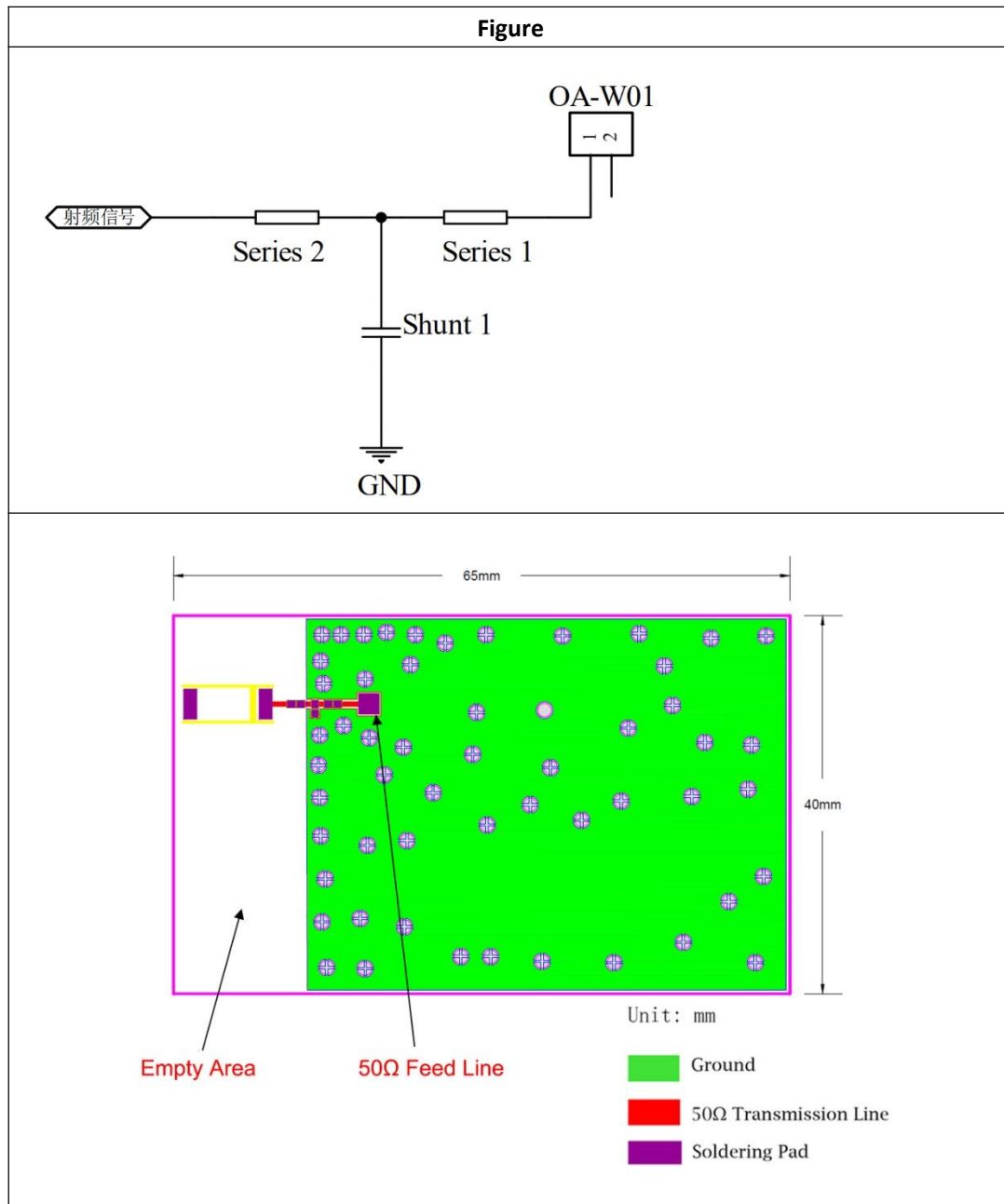
Figure	Symbol	Dimension(mm)
	L	8.0 ± 0.1
	w	3.0 ± 0.1
	T	1.0 ± 0.1
	a	0.6 ± 0.1

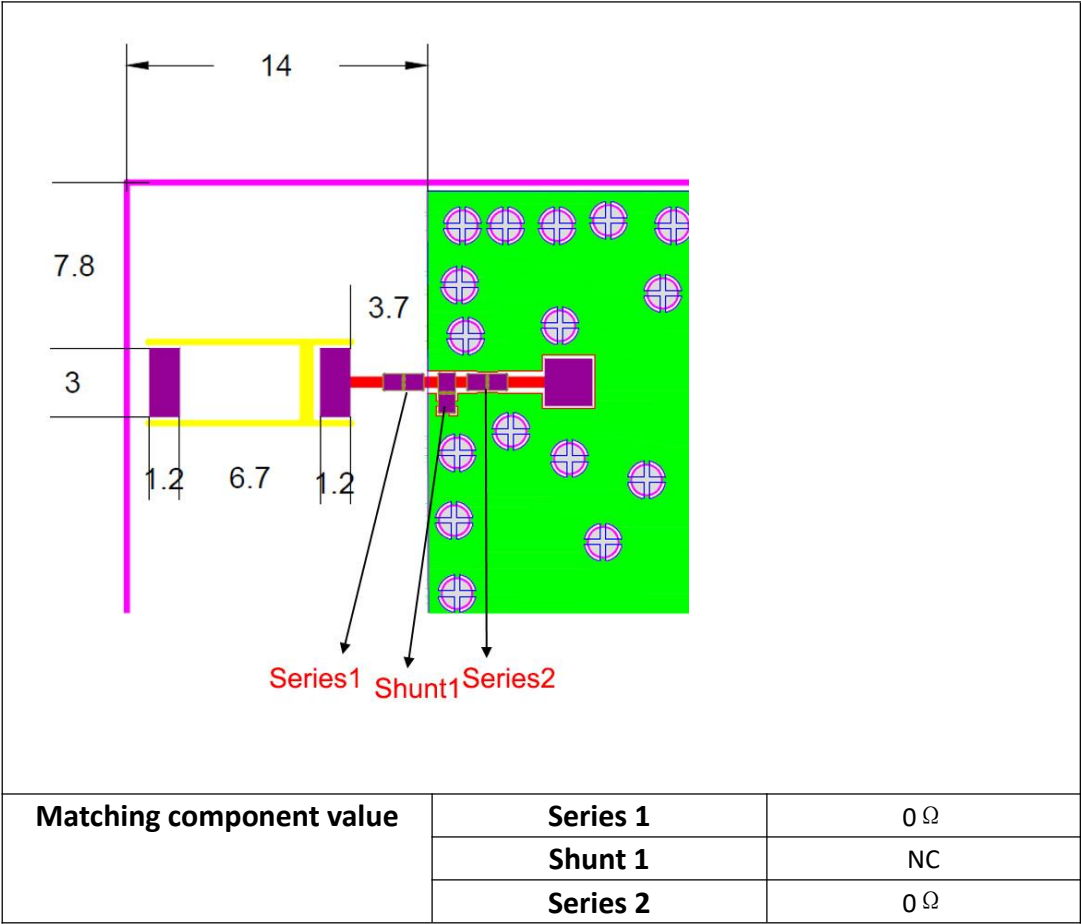
ELECTRICAL CHARACTERISTICS

OA-W01	Specification
Working Frequency Range	2400-2500MHz, 5200-5800MHz
Impedance	50 Ω
Gain(dBi)	4.27dBi (2.45GHz) , 4.66dBi (5.5GHz)
VSWR	<2
Operation Temperature	-40℃~+85℃
Power Capacity	3W

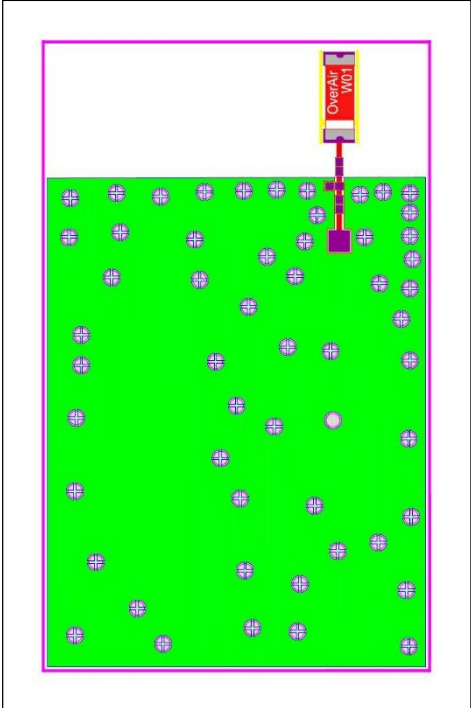
The working frequency need be adjusted to 2.45GHz with matching circuit.

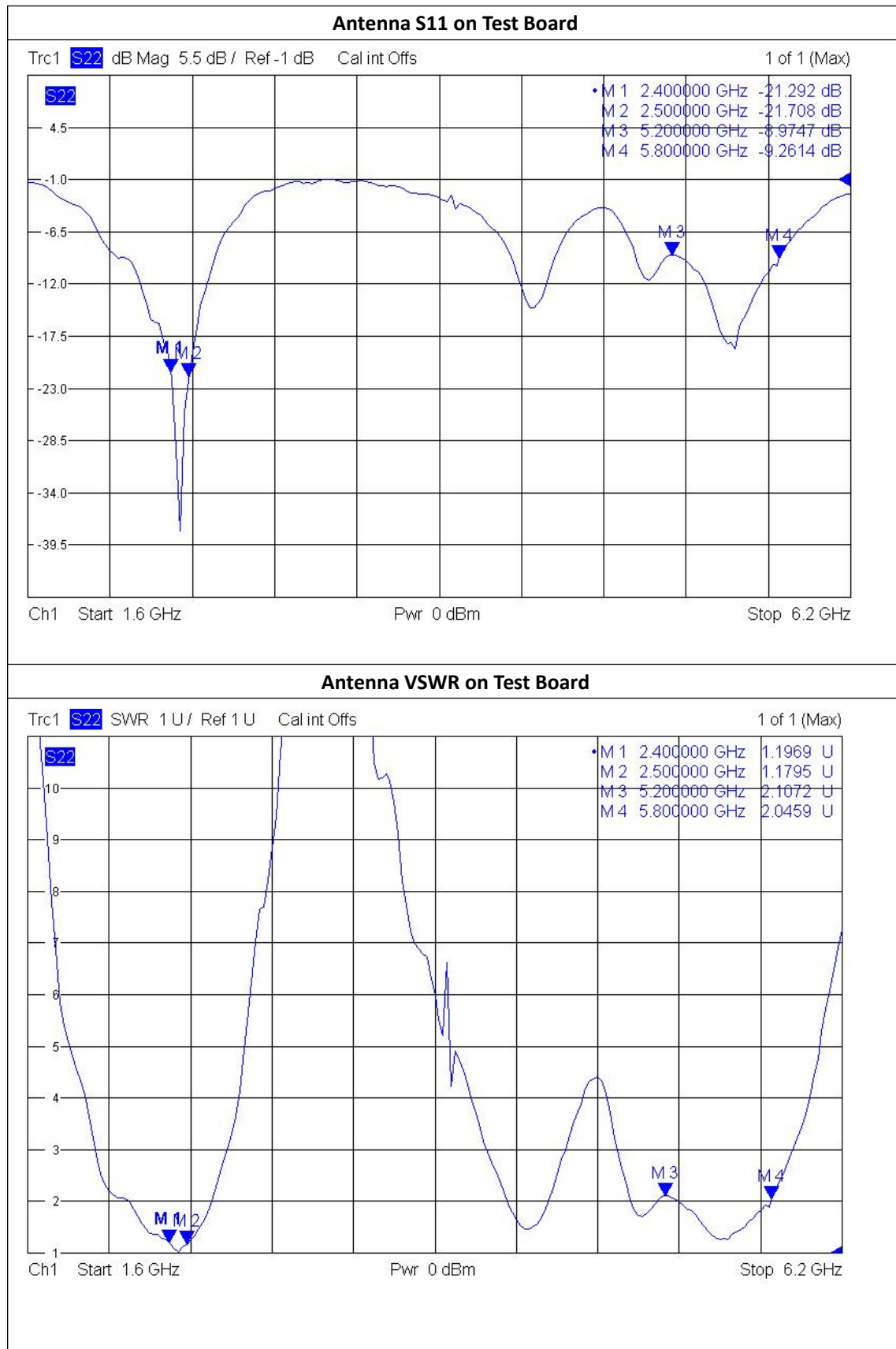
SOLDER LAND PATTERN DESIGN





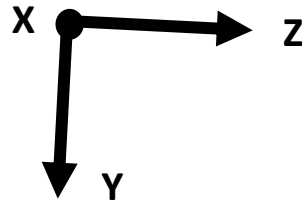
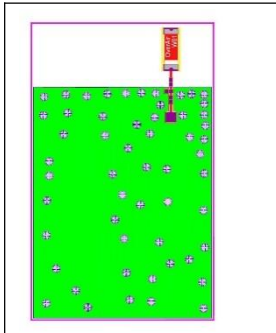
Antenna on Test Board (Thickness 1.0mm)





Efficiency and RADIATION PATTERN

Efficiency, Radiation Pattern and Gain were dependent on measurement board design. The specification of OA-W01 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	4.74dBi	4.69dBi
Average Gain across the band	4.33dBi	3.83dBi
Gain Range across the band	3.34dBi~4.74dBi	2.48dBi~4.69dBi
Peak Efficiency	95.5%	89.13%
Average Efficiency across the band	88.86%	80.39%
Efficiency Range across the band	78.89%~95.5%	60.12%~89.13%

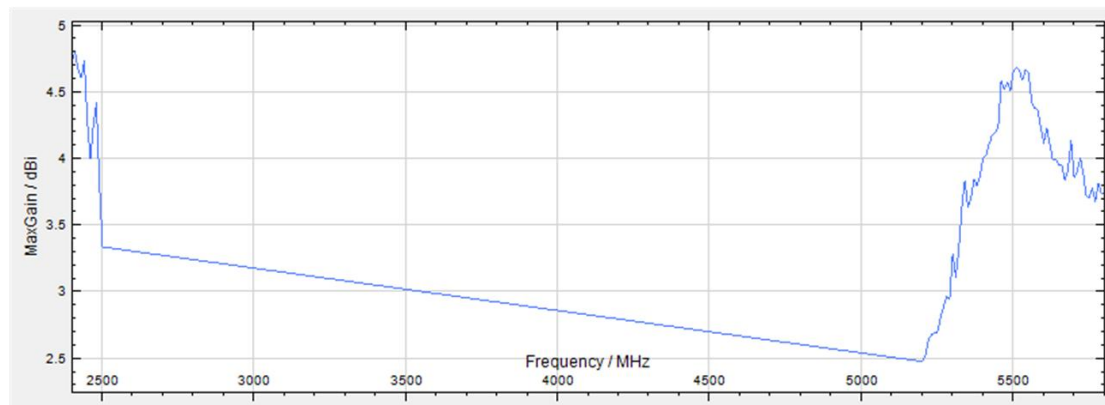
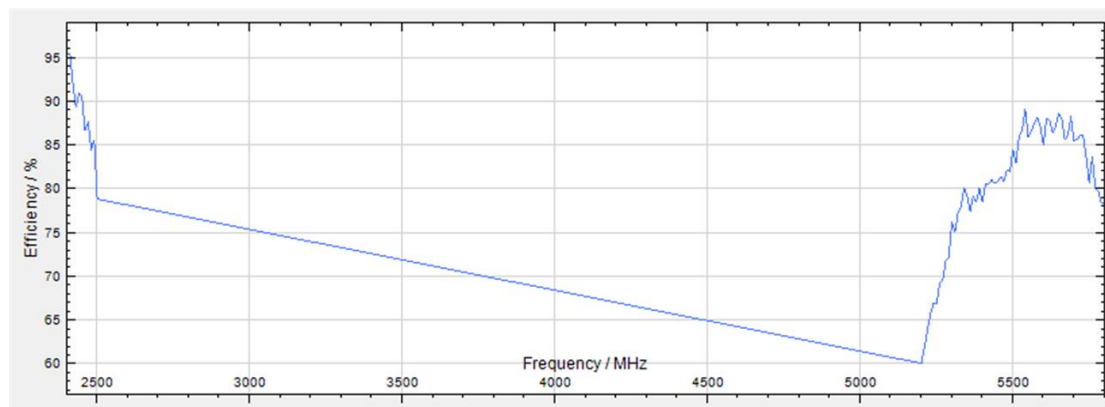
Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	4.74	95.5
2410	4.8	95.5
2420	4.67	92.04
2430	4.61	89.33
2440	4.74	90.99
2450	4.27	90.57
2460	4	86.7
2470	4.26	87.7
2480	4.42	84.53
2490	3.81	85.7
2500	3.34	78.89
5200	2.48	60.12
5210	2.52	61.94
5220	2.64	63.97
5230	2.68	65.77
5240	2.7	66.99
5250	2.7	66.99
5260	2.81	69.34
5270	2.89	69.66
5280	2.97	71.78

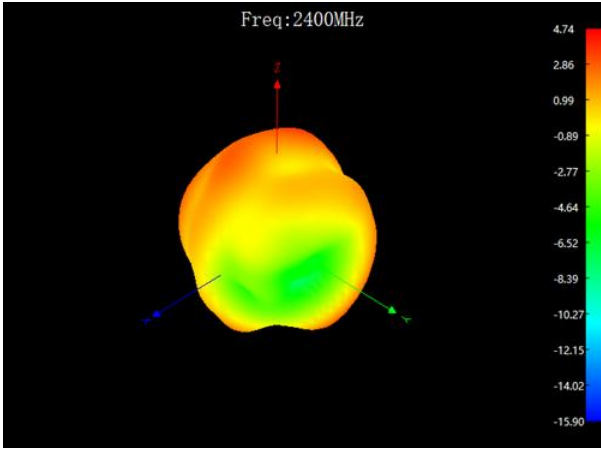
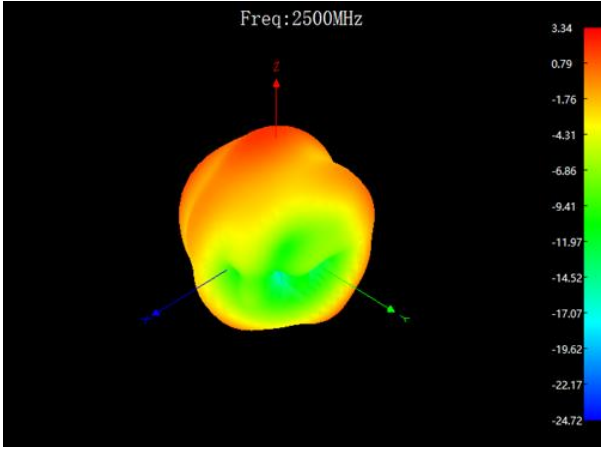
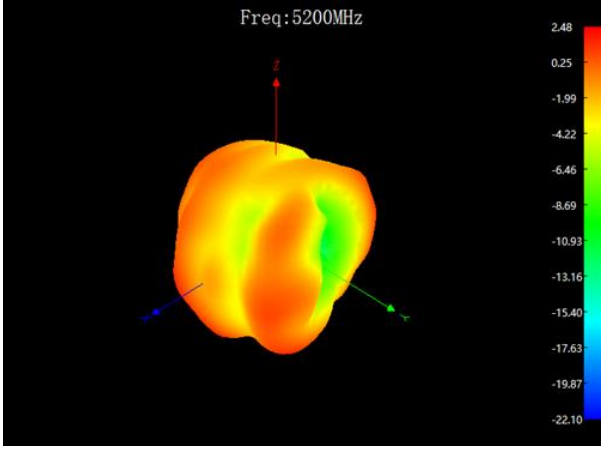
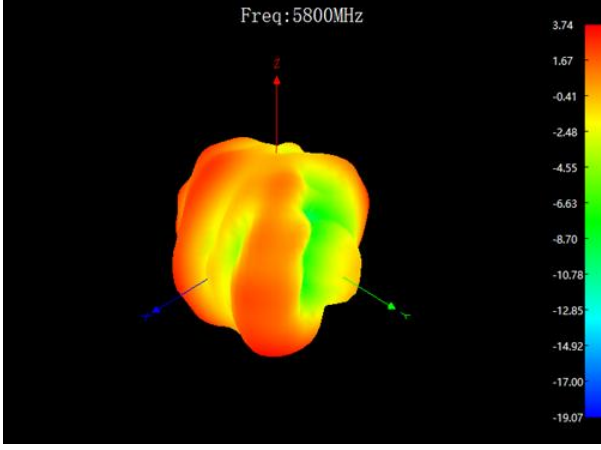
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5290	2.95	72.28
5300	3.29	76.21
5310	3.11	75.16
5320	3.33	77.27
5330	3.63	77.98
5340	3.84	80.17
5350	3.64	79.25
5360	3.7	77.45
5370	3.85	79.25
5380	3.8	78.52
5390	3.87	80.17
5400	4.01	78.52
5410	4.03	80.54
5420	4.11	80.54
5430	4.18	81.1
5440	4.2	80.72
5450	4.24	80.91
5460	4.59	81.47
5470	4.52	80.91
5480	4.58	82.22
5490	4.51	82.04
5500	4.66	84.53
5510	4.69	82.99
5520	4.66	86.1
5530	4.59	86.7
5540	4.67	89.13
5550	4.65	85.9
5560	4.43	86.7
5570	4.38	87.5
5580	4.37	88.31
5590	4.24	87.1
5600	4.12	85.11
5610	4.23	88.1
5620	4.11	87.9
5630	3.99	86.5
5640	4	87.1
5650	3.95	88.72
5660	3.95	88.1
5670	3.84	85.7
5680	3.92	86.1
5690	4.14	88.31
5700	3.86	85.51
5710	3.9	85.7

Approval sheet

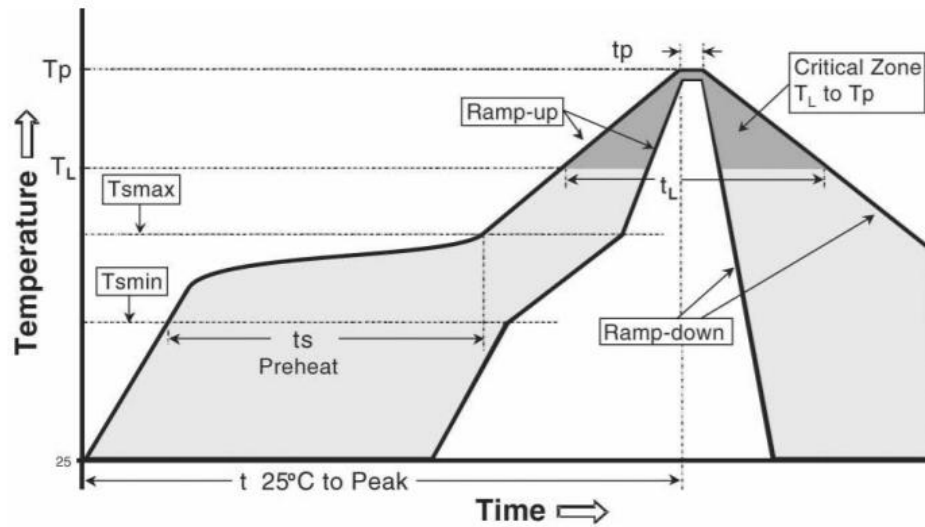
5720	4.01	86.1
5730	3.89	86.1
5740	3.72	83.75
5750	3.71	80.72
5760	3.78	83.75
5770	3.68	80.17
5780	3.82	79.8
5790	3.74	78.34
5800	3.74	78.52



@2.4GHz	
@2.5GHz	
@5.2GHz	
@5.8GHz	

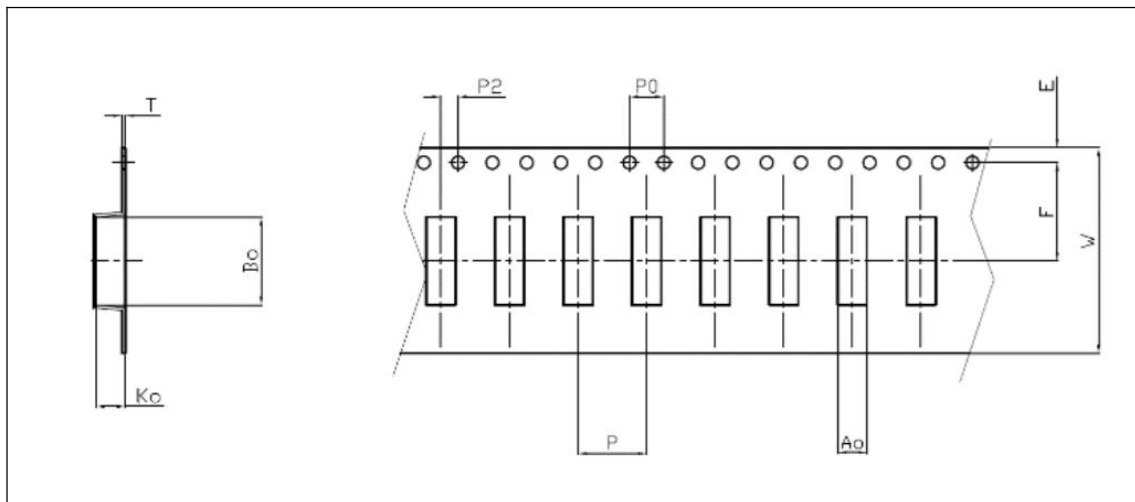
SOLDERING CONDITION

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 (T _{max} to T _p)	3 °C / second (max.)
PREHEAT	- Temperature Min (T_{min}) - Temperature Max (T_{max}) - Time (t_{min} to t_{max})	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

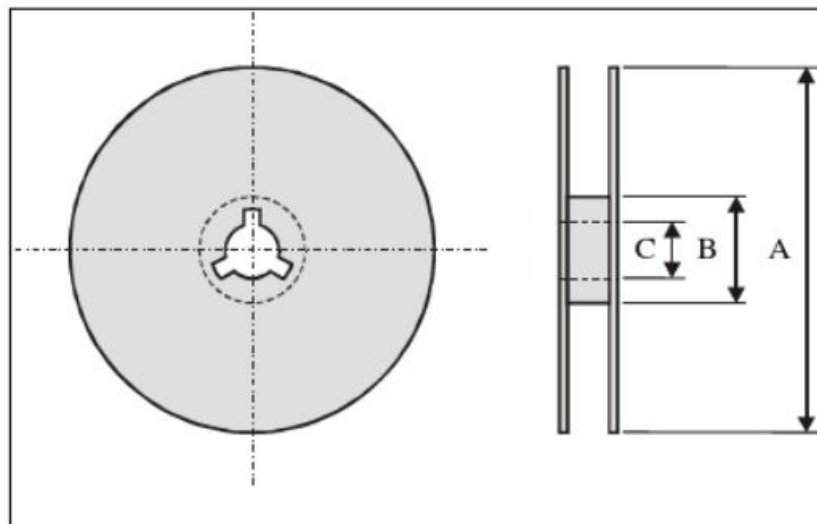
PACKAGING



Plastic 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 should be storage in the warehouse on the following conditions:

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

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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.