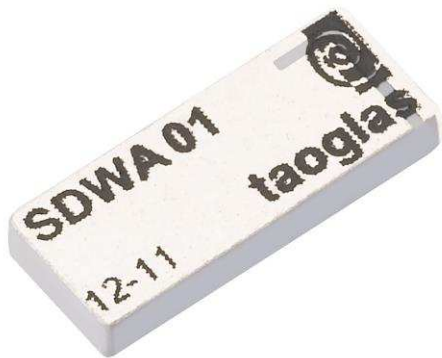


## Specification

Part No.	:	<b>SDWA.01</b>
Product Name	:	Dual-Band 2.4/5GHz Wi-Fi Ceramic SMD Antenna 2400MHz to 2500MHz 4900MHz to 6000MHz
Features	:	High Efficiency/ High Peak Gain Low Profile 10*4*1.5mm RoHS ✓

Photo



## 1. Introduction

The SDWA.01 dual-band SMT ceramic antenna is an embedded high efficiency, high peak gain solution for Wi-Fi 802.11n and other ISM band applications which require high data speed rates and wide coverage areas. It is designed to perform optimally mounted in the corner of a device main-board. Two SDWA.01 antennas can be used for optimal performance for MIMO applications. Its low profile allows use on extremely thin devices while still maintaining highest RF performance characteristics. All that is needed is a 50 Ohm co-planar waveguide (CPW) to the module.

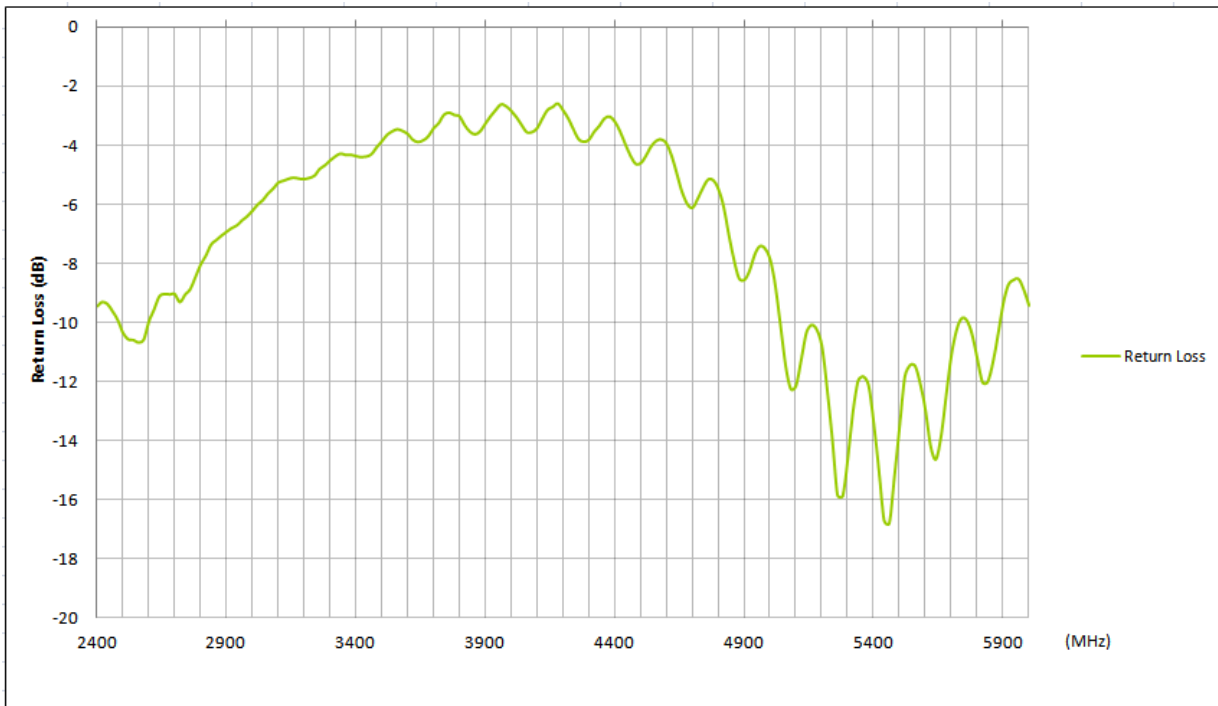
## 2. Electrical Characteristics

No	Parameter	Specification	
1	Working Frequency	2400~2500MHz 4900~5850MHz	
2	Dimension	10*4*1.5mm	
3	Impedance	50 Ohm	
4	VSWR	2.5 max.	2450~2500MHz
		3.0 max.	4900~5850MHz
5	Polarization	Linear	
6	Termination	Ag(Environmentally-Friendly Pb Free)	
7	Operating Temperature	-40°C to +85°C	

\*These values are based on our standard 100mm\*50mm test board. Actual electrical values will change depending on ground plane size, shape, mounting position, matching circuit design and surrounding environment.

### 3. Key Antenna Performance Indicators

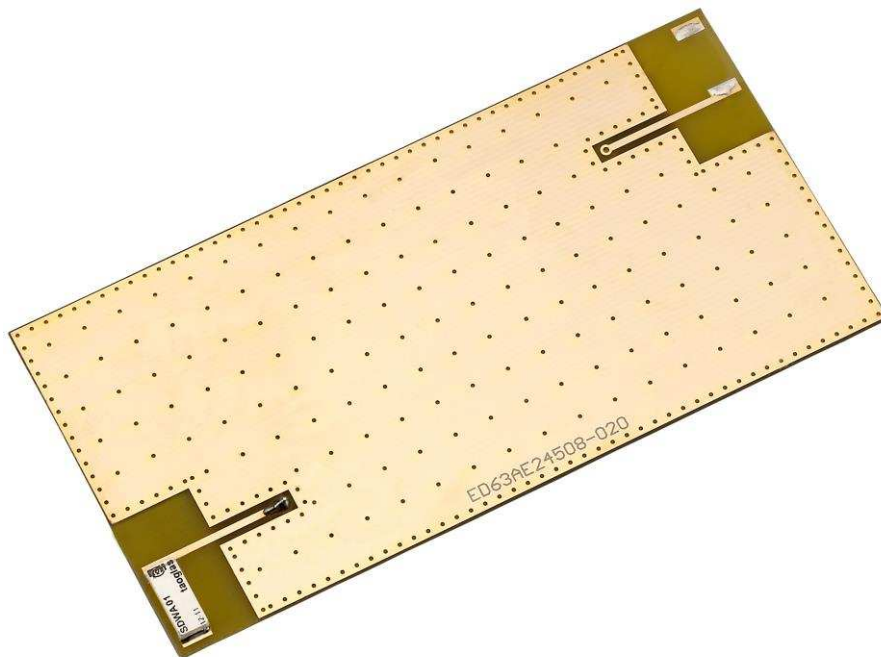
#### 3.1 S11 - Return Loss



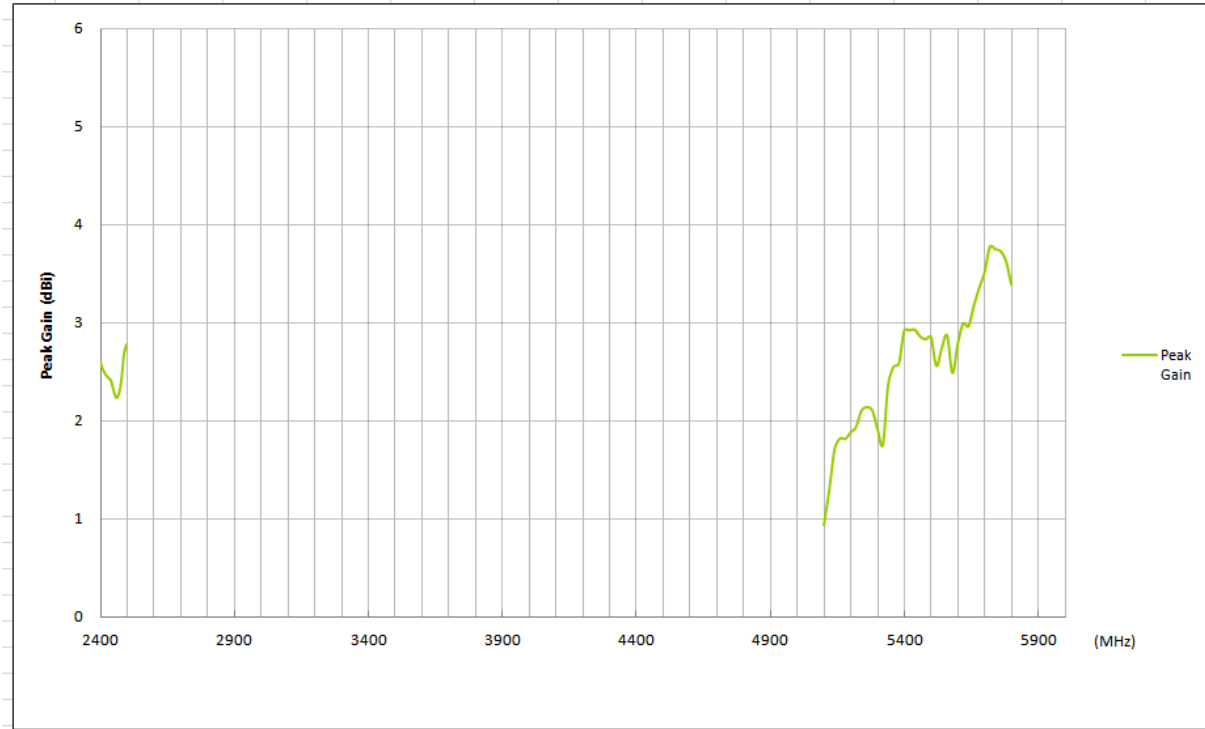
### 3.2 Efficiency & Gain

Frequency(MHz)	Wi-Fi(MHz) (free space)					
	2400	2450	2500	4900	5150	5825
Peak Gain (dBi)	2.59	2.31	2.78	1.05	1.8	3.38
Average Gain (dBi)	-1.65	-1.78	-1.29	-2.13	-1.26	-1.74
Efficiency (%)	68.44	66.26	74.38	61.36	74.95	66.89

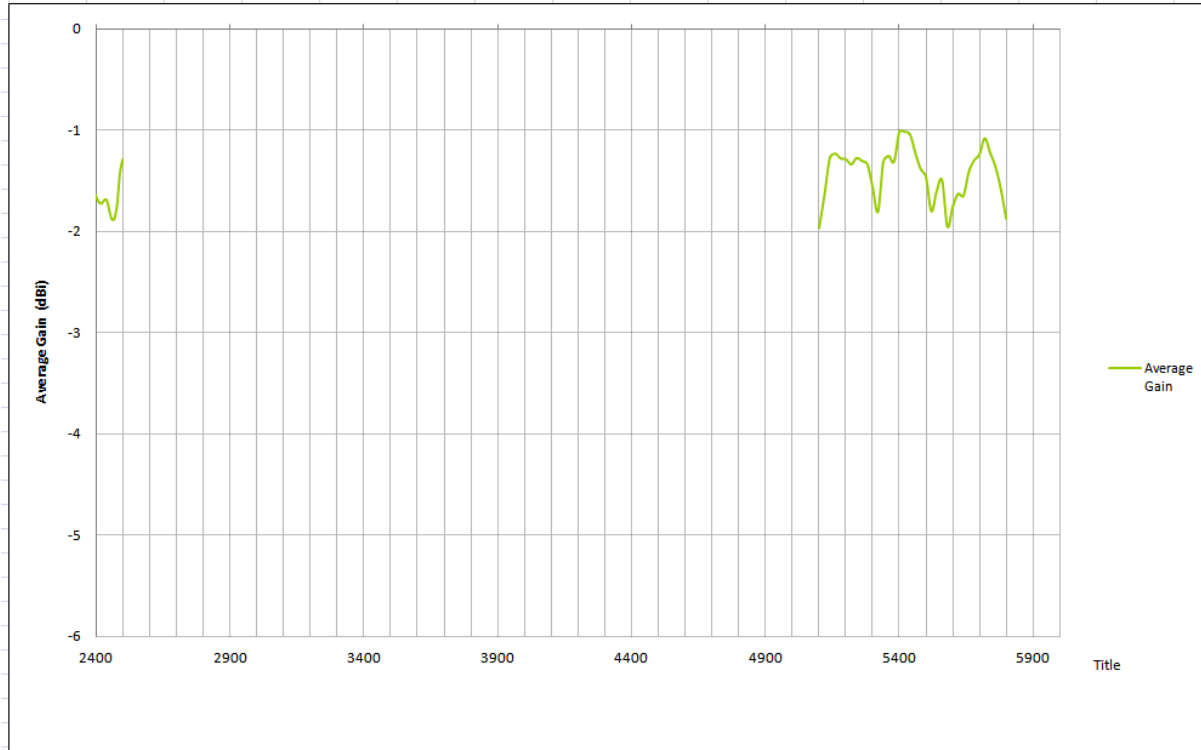
Based on standard evaluation board.



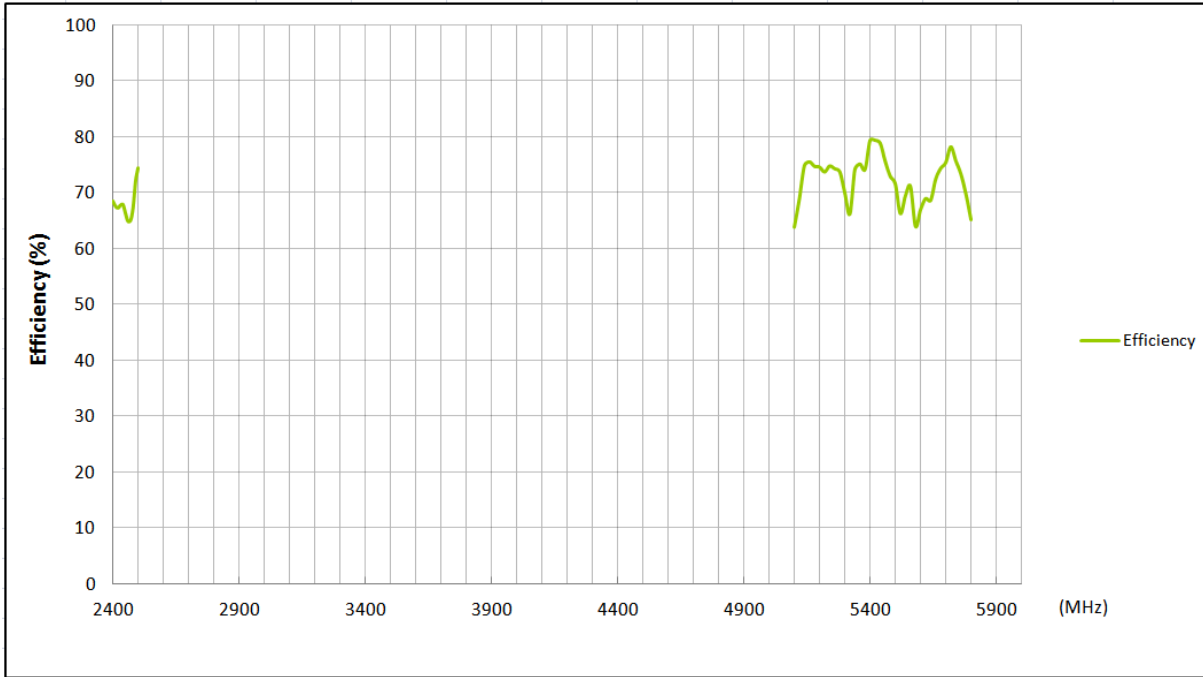
### 3.3 Peak Gain



### 3.4 Average Gain

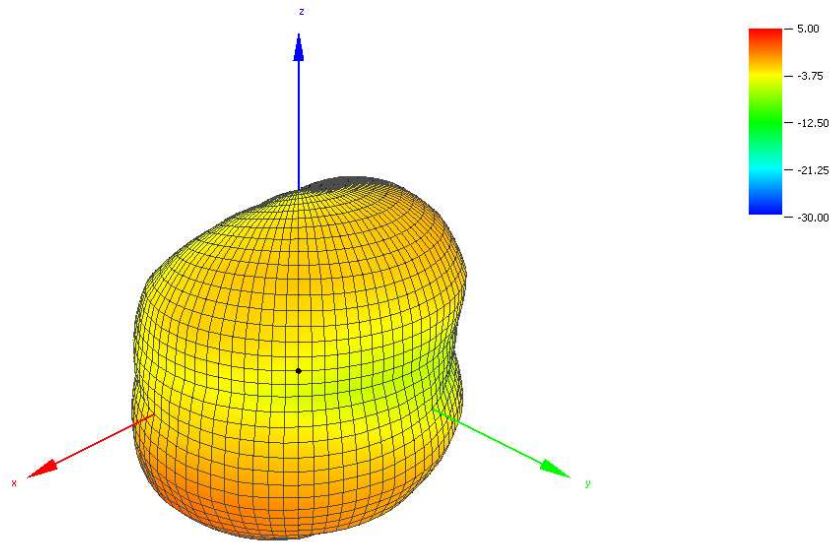
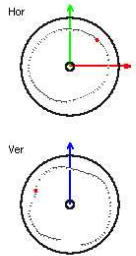


### 3.5 Efficiency



# 4. Radiation Plots

Power: -4.003 dB  
 Theta: 67.5 deg  
 Phi: 45 deg  
 Data: Single Interpolation  
 Node No: 558



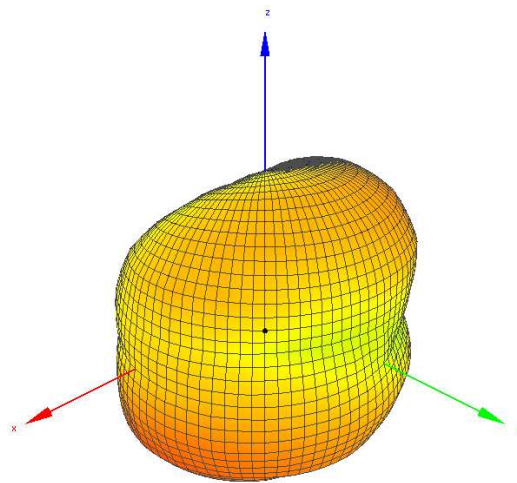
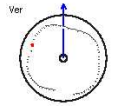
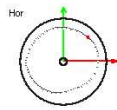
Double Interpolation  
 Current View: Theta: 60.00 deg Phi: 45.00 deg

**2400 MHz**





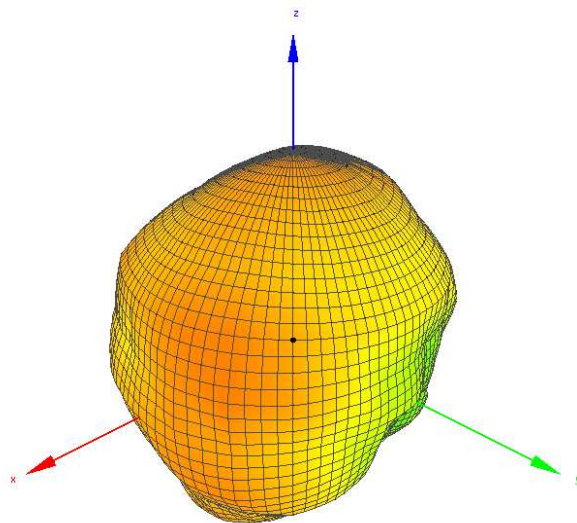
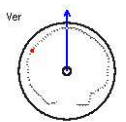
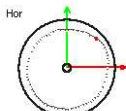
Power: -3.155 dB  
Theta: 67.5 deg  
Phi: 45 deg  
Data: Single Interpolator  
Node No: 558



Double Interpolation  
Current View: Theta: 60.00 deg Phi: 45.00 deg

## 2480 MHz

Power: -0.867 dB  
Theta: 60 deg  
Phi: 45 deg  
Data: Raw Data  
Node No: 556

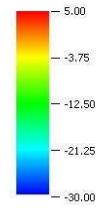
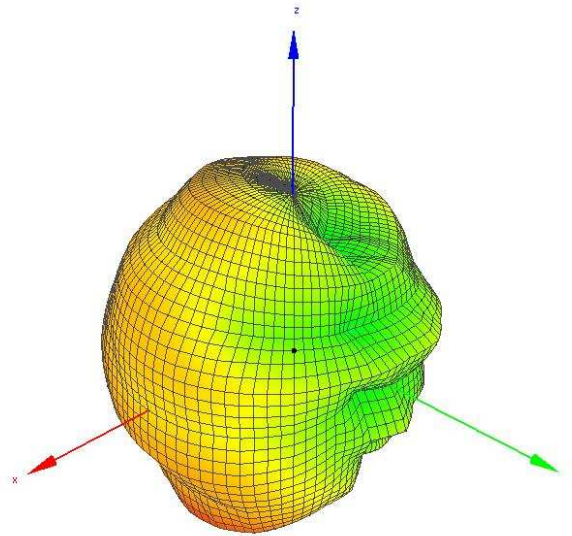
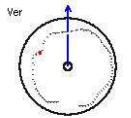
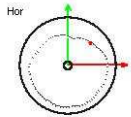


Double Interpolation  
Current View: Theta: 60.00 deg Phi: 45.00 deg

## 5180 MHz



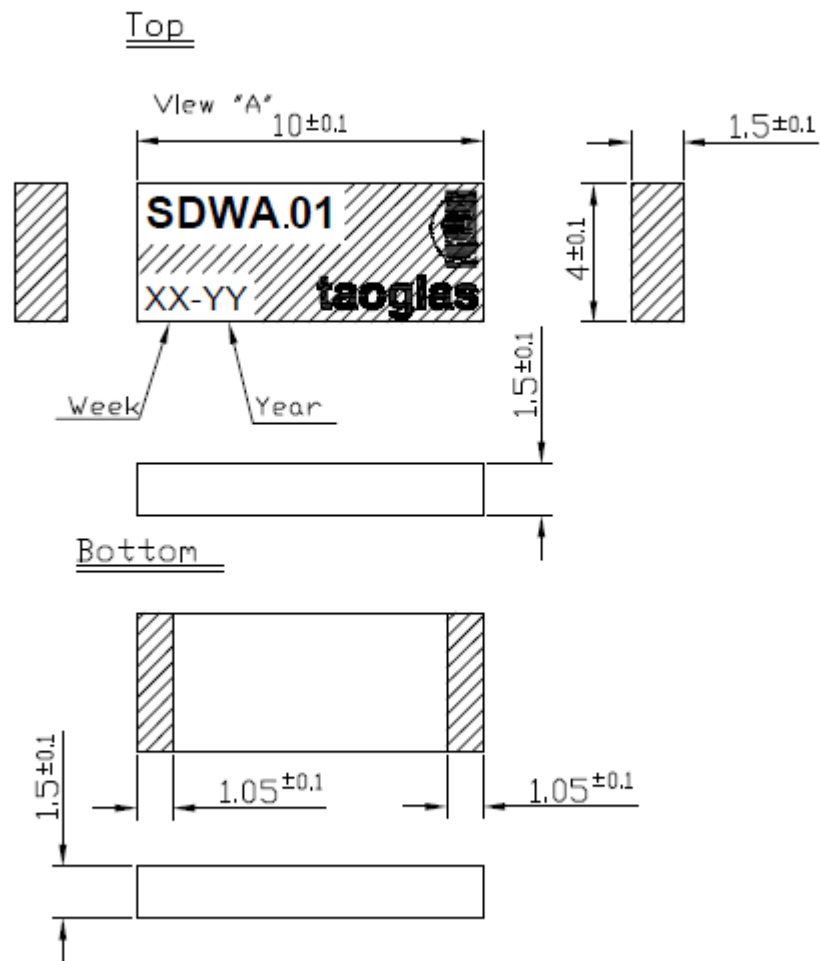
Power: -8.191 dB  
Theta: 63.75 deg  
Phi: 45 deg  
Data: Double Interpolatio  
Node No: 557

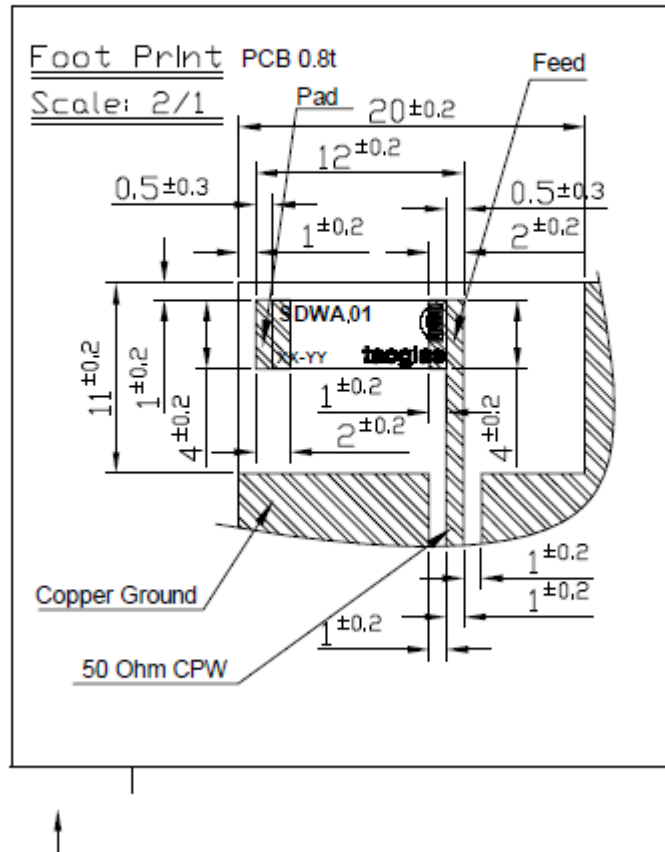


Double Interpolation  
Current View: Theta: 58.80 deg Phi: 44.18 deg

**5700 MHz**

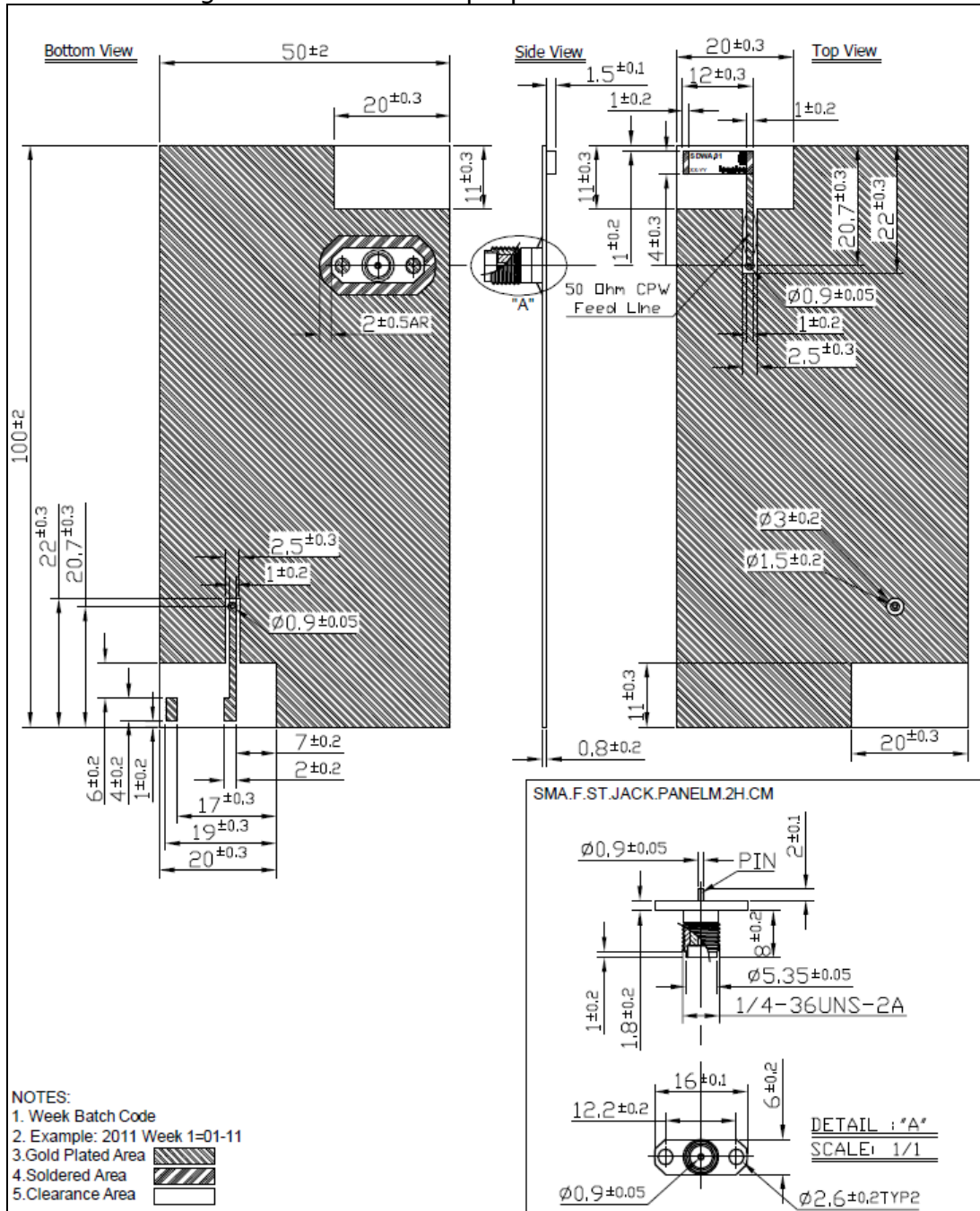
## 5. Drawings and Dimensions





## 6. Test Board Dimensions

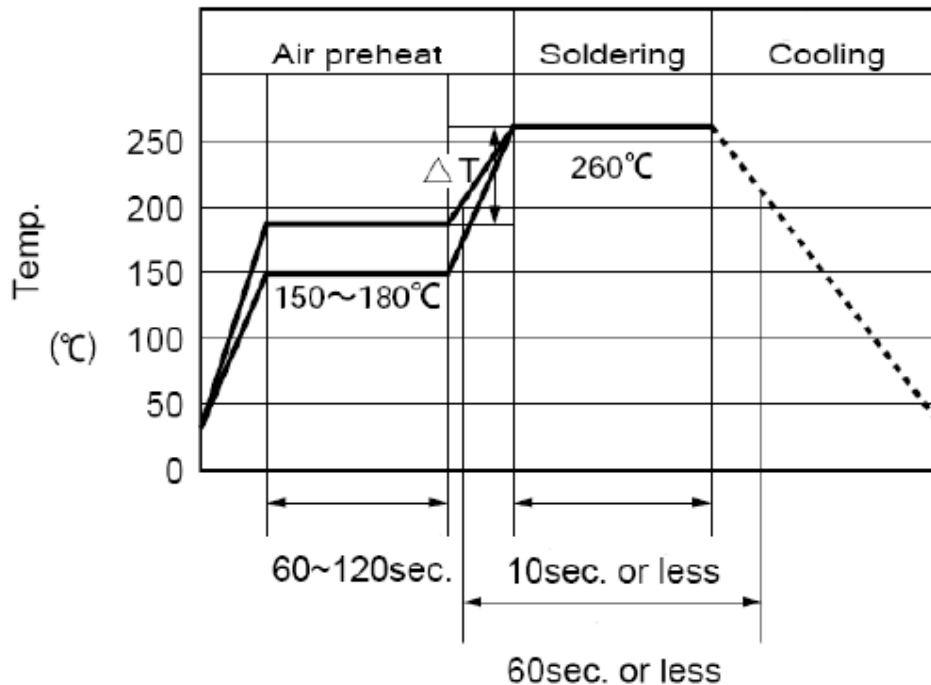
The test Board is designed for evaluation purposes.



The size of the ground plane for the complete evaluation board is 100x50 mm. The area occupied by the antenna is 20x11mm.

## 7. Recommended Soldering Conditions

Lead free Solder



1. Time shown in the above figures is measured from the point when chip surface reaches temperature.
2. Temperature difference in high temperature part should be within 110°C.
3. After soldering, do not force cool, allow the parts to cool gradually.

\*General attention to soldering:

- High soldering temperatures and long soldering times can cause leaching of the termination, decrease in adherence strength, and the change of characteristic may occur.
- for soldering, please refer to the soldering curves above. However, please Keep exposure to temperatures exceeding 200°C to under 50 seconds.
- please use a mild flux (containing less than 0.2wt% Cl). Also, if the flux is water soluble, be sure to wash thoroughly to remove any residue from the underside of components that could affect resistance.

### Cleaning:

When using ultrasonic cleaning, the board may resonate if the output power is too high. Since this vibration can cause cracking or a decrease in the adherence of the termination, we recommend that you use the conditions below.

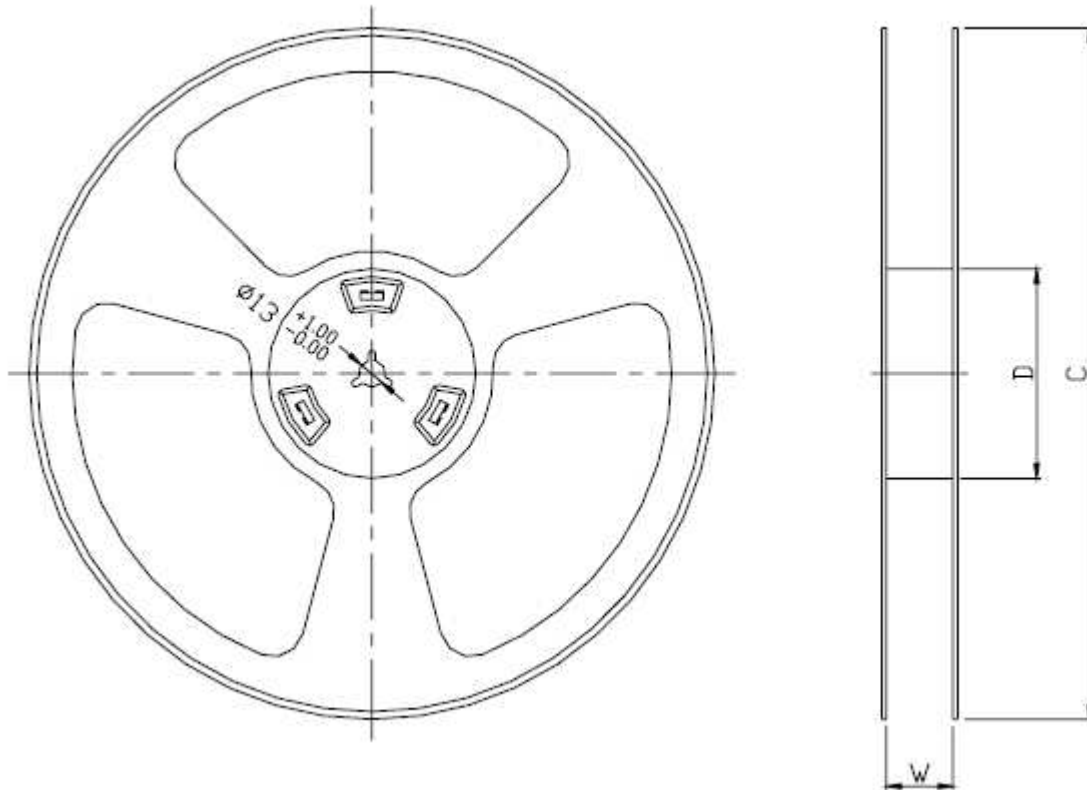
Frequency: 40 kHz max.

Output power: 20W/Iiter

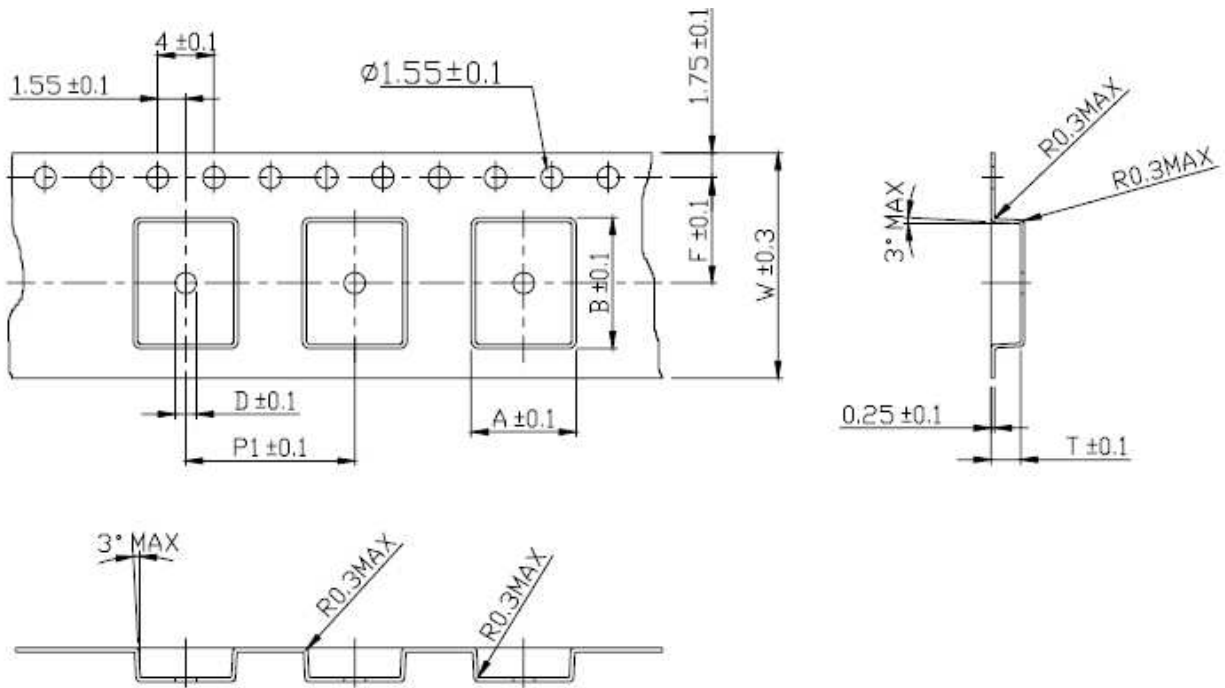
Cleaning time: 5minutes max.

## 8. Delivery Mode

1. Blister tape to IEC 286-3 , polyester ◦
2. Pieces/tape: 1000



Product Code	Units per Reel	C(mm)	D(mm)	W(mm)
Antenna	1000	330±1	100±0.5	24±1



No	Index	Spec(mm)
1	A	4.6
2	B	10.6
3	P1	12
4	W	24
5	F	8.5
6	T	2.5
7	D	1.5