

产品技术规格书

SPECIFICATION

产品型号 PART NO: KH-3216-A33T

客户料号 CUSTOMER PART NO:

客户确认 CUSTOMER APPROVED BY:

确认日期 APPROVED DATE:

RoHS Compliant Parts

拟制 Prepared by:	审核 Checked by :	批准 Approved by:
送样日期 Formed On	产品版本 Document Version (V1.0)	

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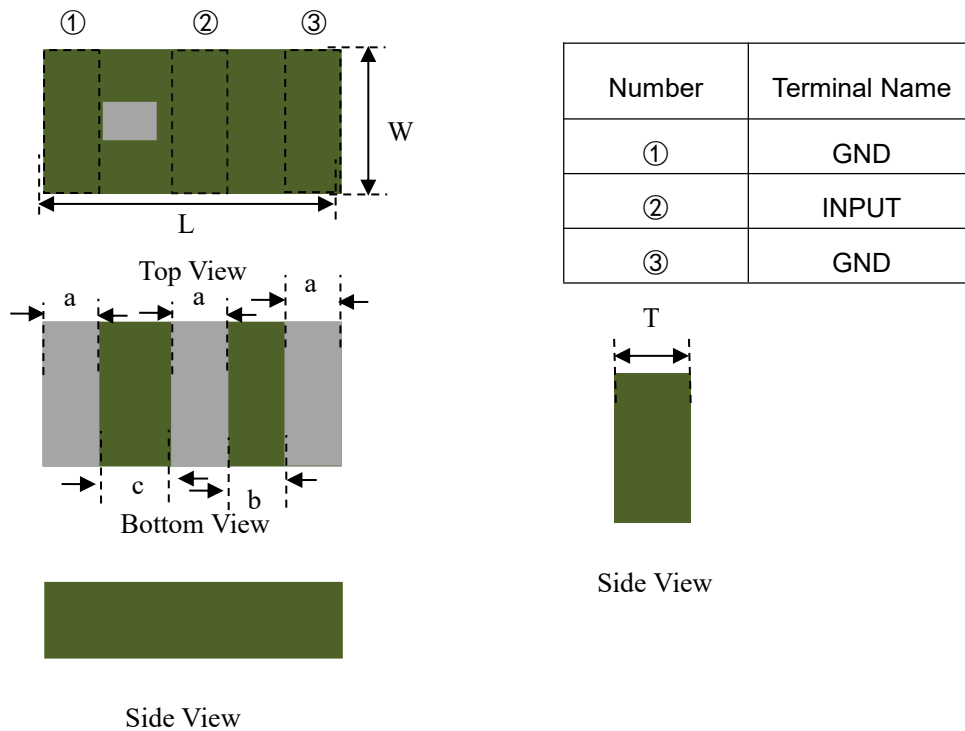
1. 概述 INTRODUCTION

"金航标"微波多层陶瓷天线 LA 系列产品设计用于 WLAN、WiFi、蓝牙、PHS，手机多频天线, FM 等小体积 SMD 片式设计。

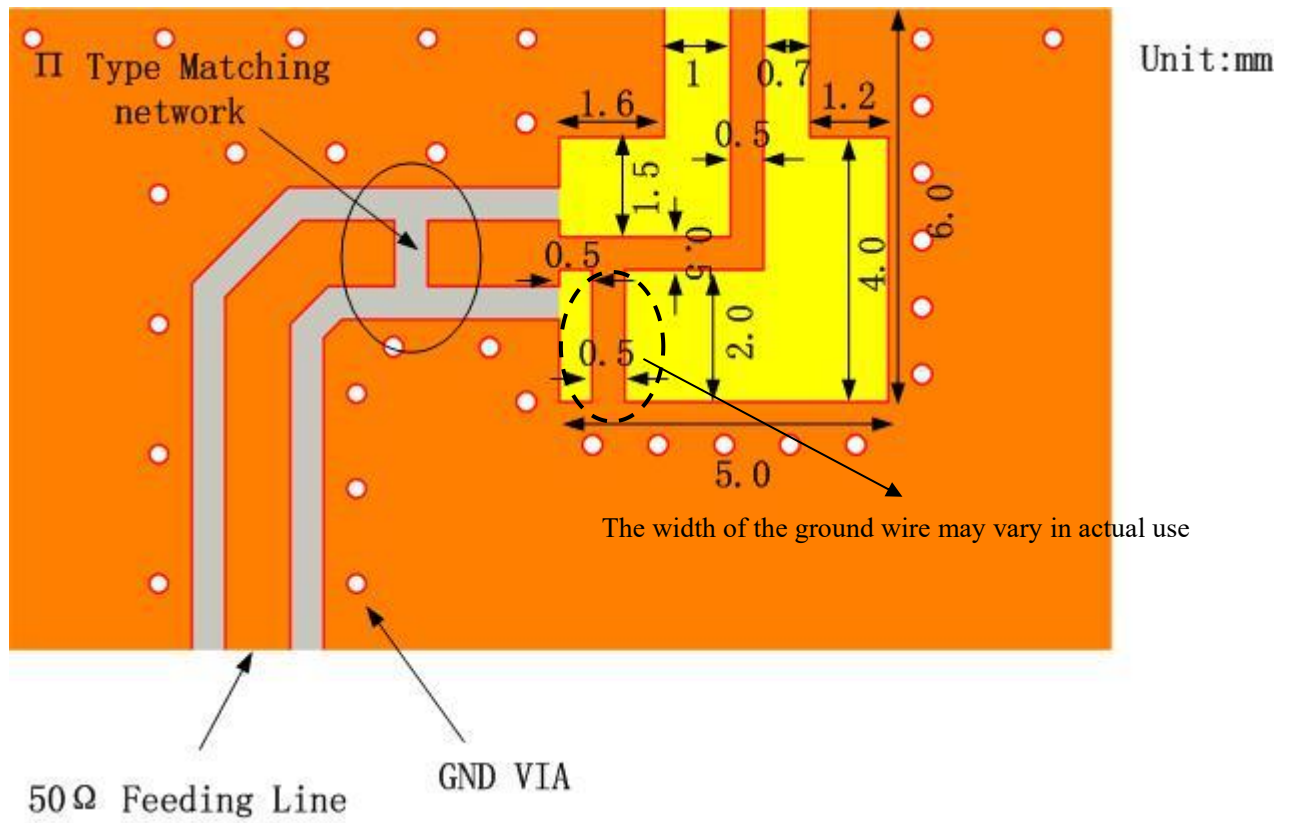
"KH" Microwave Multi-Layer Ceramic Antenna LA series are designed to be used in WLAN、WiFi、Bluetooth、PHS、 Multiple-band Mobile phone antenna, FM, etc and compact size SMD chip design.

2. 型号 KH-3216-A33T

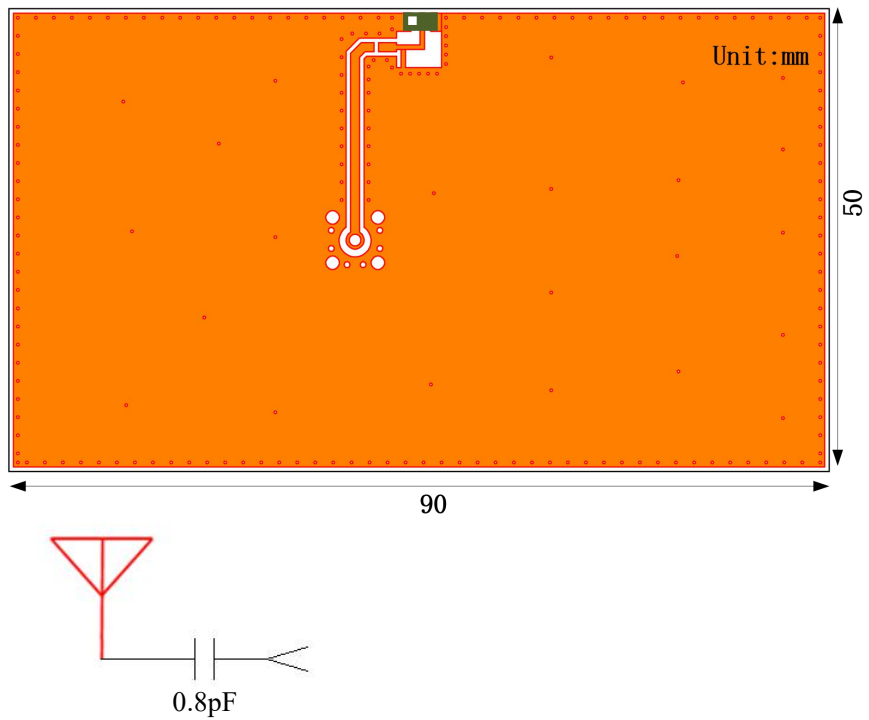
3. 外型尺寸及测试板焊盘尺寸 Dimensions (Unit: mm)



Symbol	L	W	T	a	b	c
Dimensions	3.2±0.2	1.6±0.2	1.2±0.1	0.5±0.1	0.7±0.1	1.0±0.1

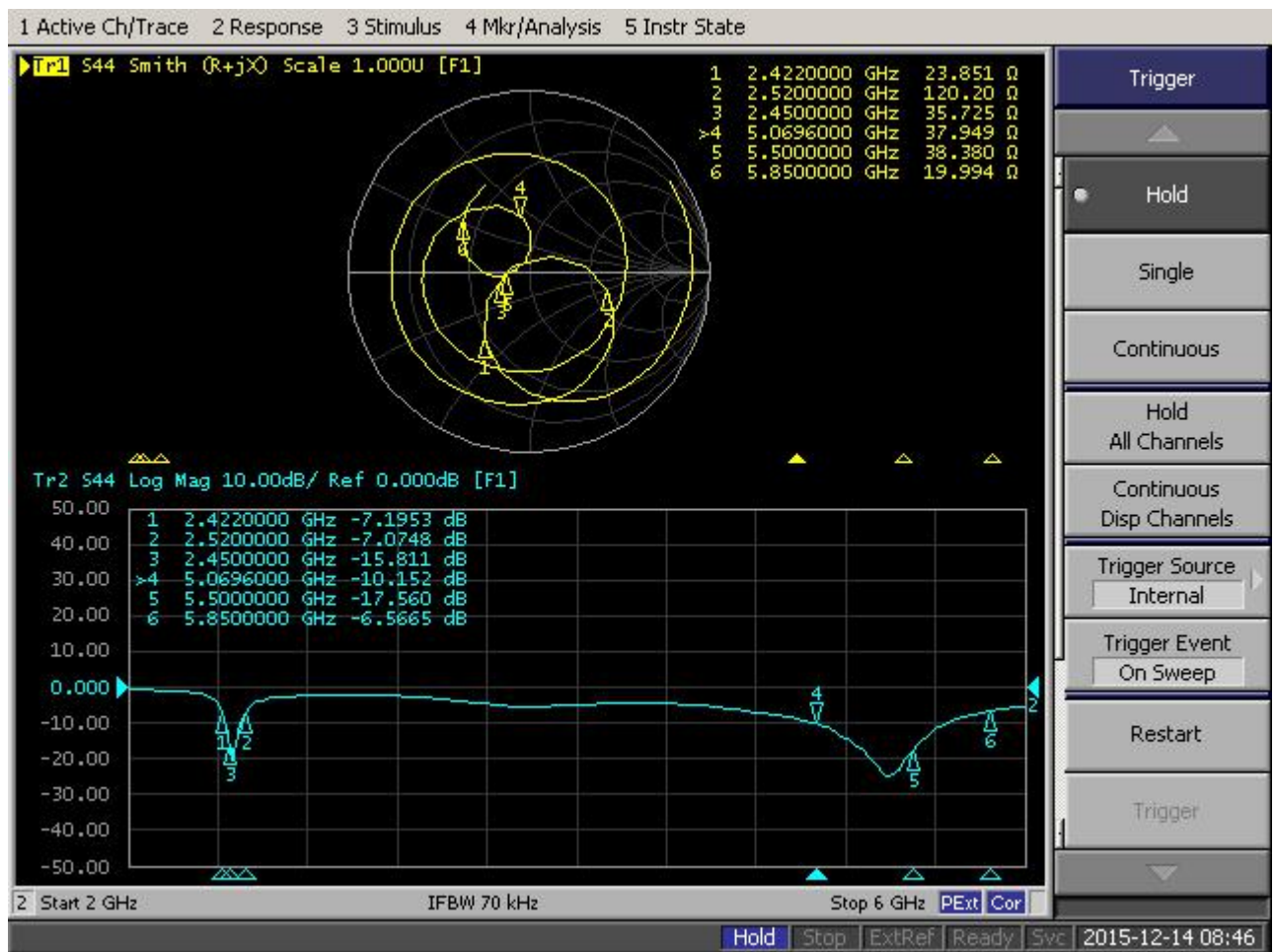


4. 测试电路和匹配电路 Evaluation Board and Matching Circuits



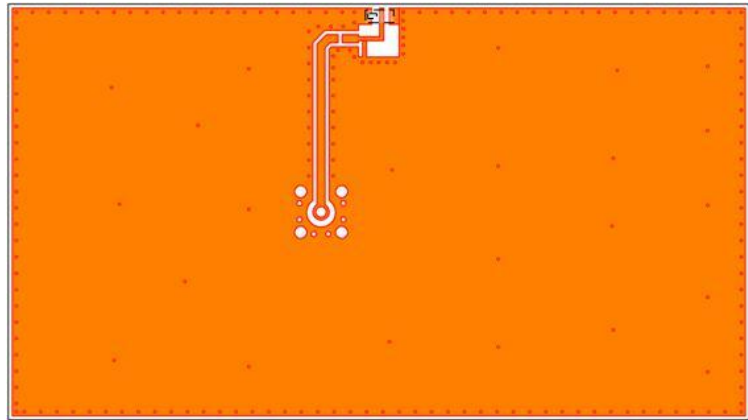
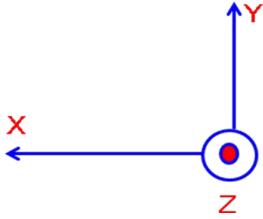
5. 电气性能 **Electrical Characteristics**

No.	Item (项目)	Specifications (特性)
5.1	Frequency Range 频率范围	2400 ~ 2500 MHz / 5150 ~ 5850 MHz
	(带匹配电路测试)After Matching	2450 MHz/5500MHz
5.2	Band Width 通带宽度	100MHz (typ.) / 800 MHz (typ.)
5.3	Peak Gain 峰值增益	2.23dBi / 4.05dBi
5.4	Return Loss 回波损耗	-7 dB (max.) / -7 dB (max.)
5.5	Polarization 极化方式	Linear 线性
5.6	Azimuth Beam width 方位角	Omni-directional 全向
5.7	Impedance 阻抗	50 Ω

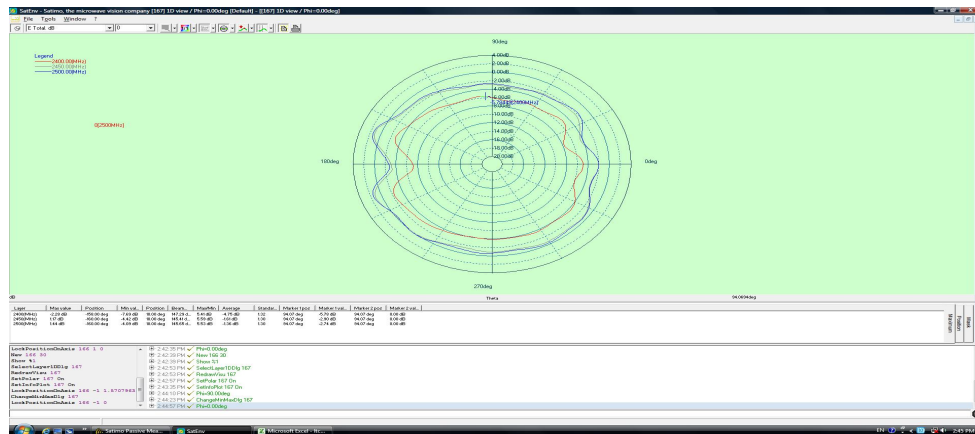
6. 特性曲线 **Characteristic curve**

7. 方向图及效率 Radiation Pattern & Efficiency

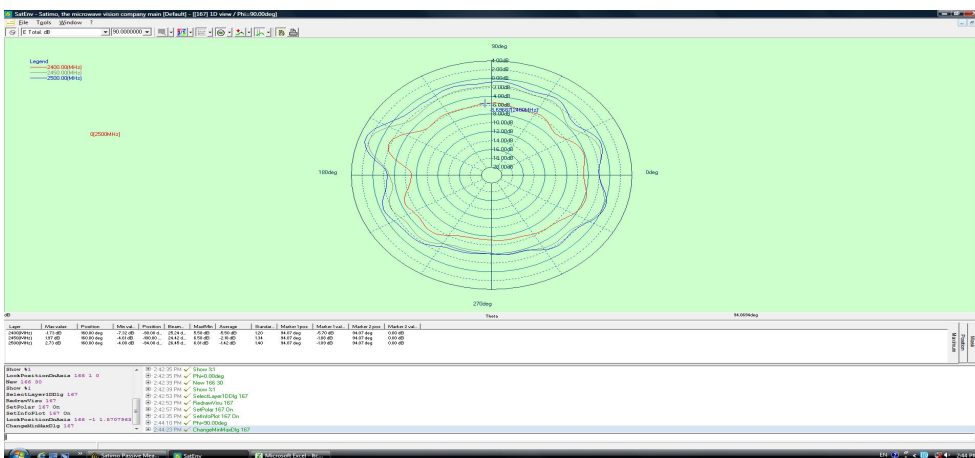
coordinates:



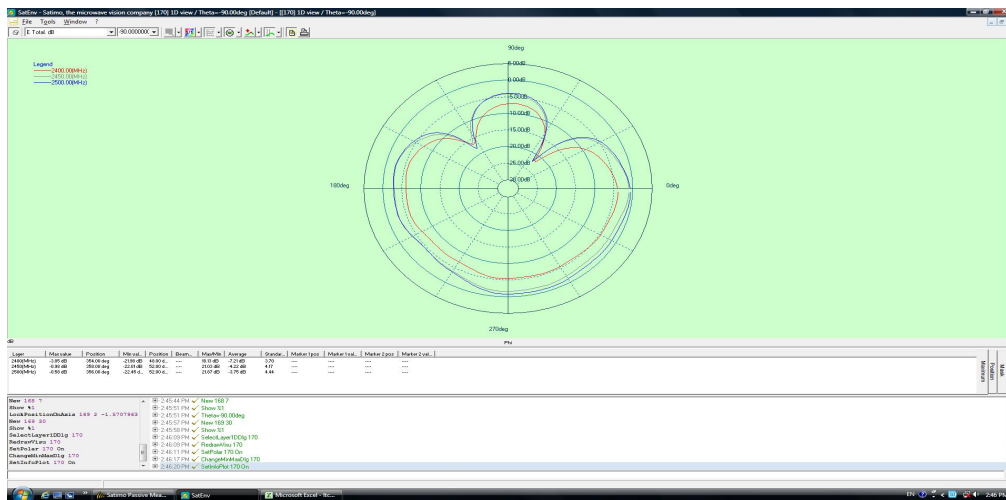
2.4G X-Z Plane



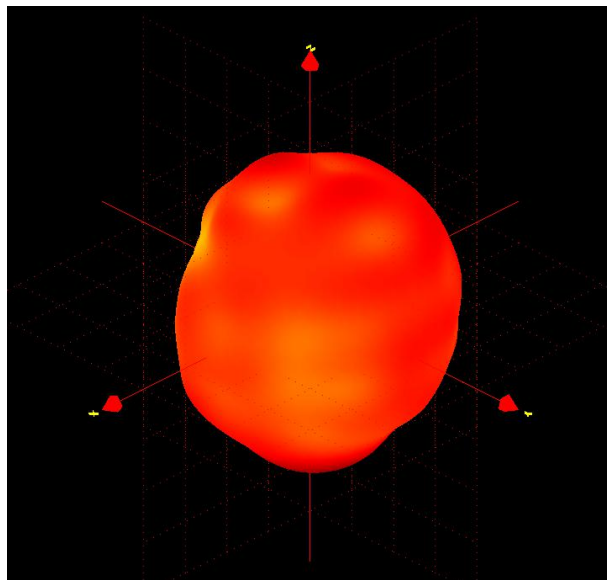
Y-Z Plane



X-Y Plane



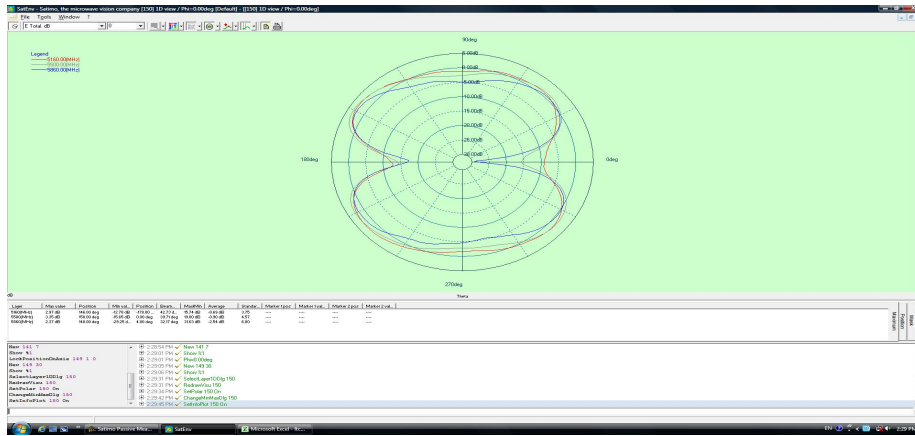
3D Radiation Pattern



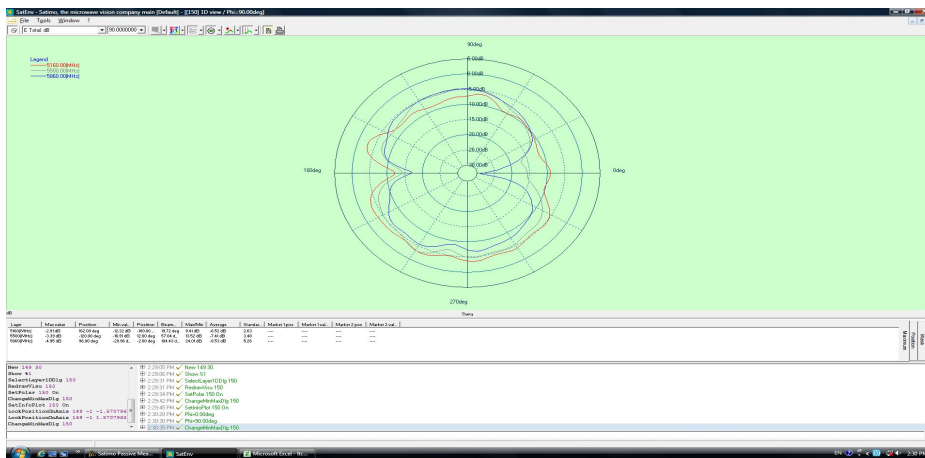
Frequency (MHz)	2400	2450	2500
Avg. Gain (dBi)	-4.75	-1.61	-1.36
Peck Gain (dBi)	1.95	2.23	2.07
Efficiency (%)	42	66.5	50

5G

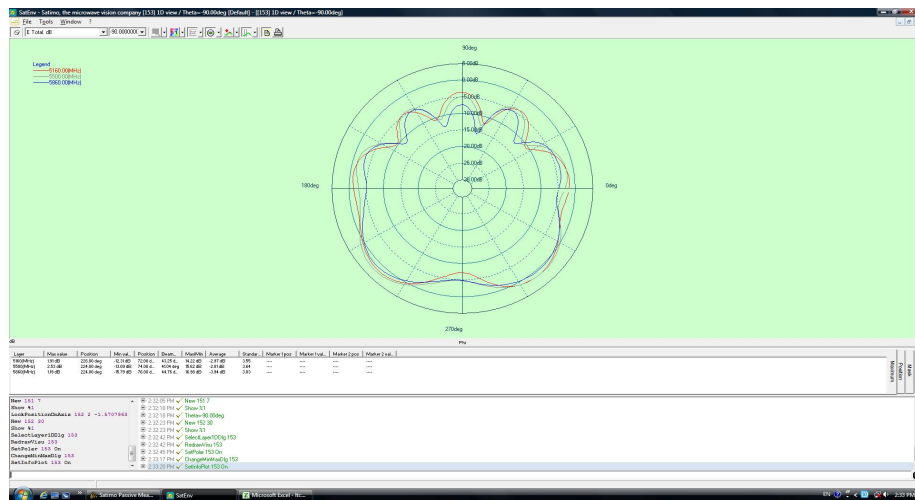
X-Z Plane



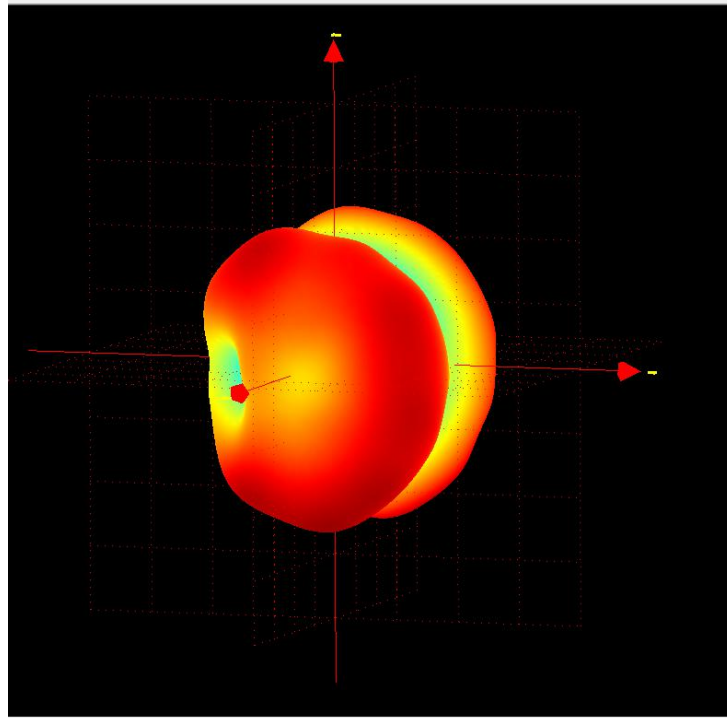
Y-Z Plane



X-Y Plane



3D Radiation Pattern



Frequency (MHz)	5150	5500	5850
Avg. Gain (dBi)	-4.75	-1.61	-1.36
Peck Gain (dBi)	3.87	4.05	3.92
Efficiency (%)	70	76.8	64

8 可靠性试验 Dependability Test

基准条件: 温度范围	Temperature range	25±5°C
相对湿度范围	Relative Humidity range	55~75%RH
工作温度	Operating Temperature range	-40°C~+125°C
贮藏温度	Storage Temperature range	-40°C~+125°C

8.1 耐振动 Vibration Resist

在振动频率为 10~55Hz 振幅为 1.5mm 沿 X.Y.Z 方向各振动 2 小时后测试符合表 8.1~8.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm for 2 hours each in X, Y and Z directions.

8.2 耐跌落冲击 Drop Shock

在 100cm 高度处按 X, Y, Z 三个面分别自由跌落在木制地板上共 3 次后测试符合表 8.1~8.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after dropping onto the hard wooden board from the height of 100cm for 3 times each facet of the 3 dimensions of the device.

8.3 耐焊接热 Solder Heat Proof

能承受经 120~150°C 的温度预热 120 秒后, 在 255°C+10°C 的焊锡浸 5±0.5 秒, 或 300°C-10°C 的电烙铁焊接 3±0.5 秒, 焊接面无损伤。

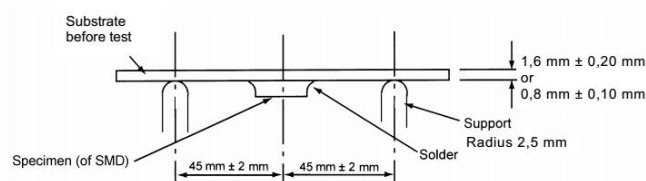
The device should be satisfied after preheating at 120°C~150°C for 120 seconds and dipping in soldering Sn at 255°C+10°C for 5±0.5 seconds, or electric iron 300°C-10°C for 3±0.5 seconds, without damage.

8.4 推力试验 Adhesive Strength of Termination

在产品电极端子上或表面上可承受 5N(≤0603); 10N(>0603) 水平推力 10±1 秒而无明显外观损坏与电极移位。

The device have no remarkable damage or removal of the termination after horizontal force of 5N(≤0603); 10N(>0603) with 10±1 seconds.

8.5 耐弯曲试验 Bending Resist Test



将产品按图焊在 1.6±0.2mm 或 0.8±0.1mm 的 PCB 板中间, 由箭头方向施力: 1mm/S, 弯曲距离: 1.5mm, 保持 5±1S, 产品金属层无脱落。

Weld the product to the center part of the PCB with the thickness 1.6±0.2mm or 0.8±0.1mm as the illustration shows, and keep exerting force arrow-ward on it at speed of :1mm/S, and hold for 5±1S at the position of 1.5mm bending distance, so far, any peeling off of the product metal coating should not be detected.

8.6 耐湿热特性 **Moisture Proof**

在温度为 $60 \pm 2^\circ\text{C}$ ，相对湿度 90~95% 的恒温湿箱中放置 96 小时，在常温中恢复 1~2 小时后测试，符合表 8.1~8.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature $60 \pm 2^\circ\text{C}$ and the relative humidity 90~95% RH for 96 hours and 1~2 hours recovery time under normal condition.

8.7 高温特性 **High Temperature Endurance**

在温度为 $125 \pm 5^\circ\text{C}$ 的恒温箱中放置 96 ± 2 小时，在常温中恢复 1~2 小时后测试。符合表 8.1~8.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to temperature $125 \pm 5^\circ\text{C}$ for 96 ± 2 hours and 1~2 hours recovery time under normal temperature.

8.8 低温特性 **Low Temperature Endurance**

在温度为 $-40^\circ\text{C} \pm 5^\circ\text{C}$ 低温箱中放置 96 ± 2 小时后恢复 1~2 小时测试符合表 8.1~8.4 规定。

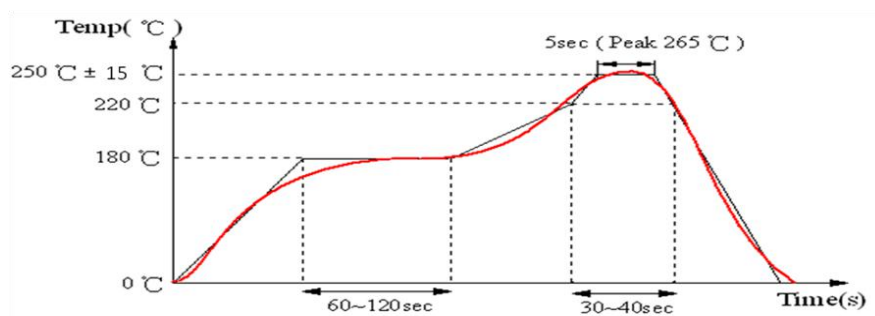
The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature $-40^\circ\text{C} \pm 5^\circ\text{C}$ for 96 ± 2 hours and to 2 hours recovery time under normal temperature.

8.9 温度循环 **Temperature Cycle Test**

在 -40°C 温度中保持 30 分钟，再在 $+125^\circ\text{C}$ 温度中保持 30 分钟，共循环 5 次后在常温中恢复 1~2 小时后测试符合表 8.1~8.4 规定。

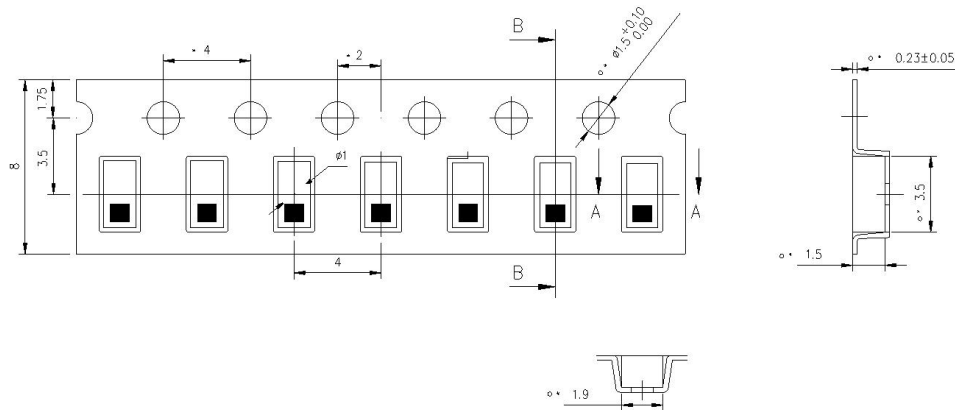
The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the low temperature -40°C and high temperature $+125^\circ\text{C}$ for 30 ± 2 min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

9 回流焊温度 **Reflow Soldering Standard Condition**



10 包装尺寸 (3216) Packaging and Dimensions

10.1 Plastic Tape

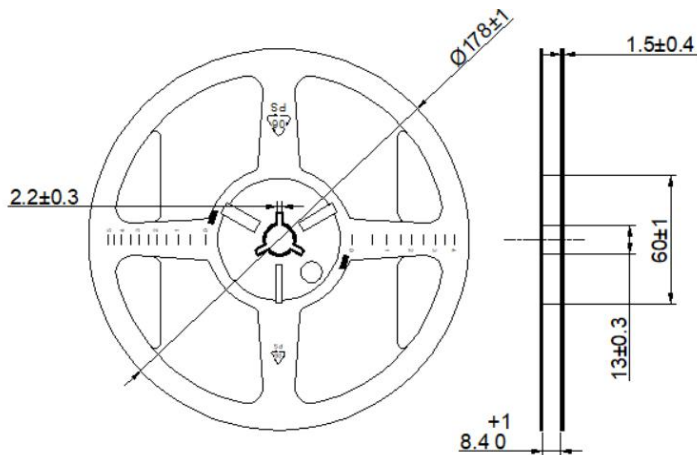


包装说明: Remarks for Package

载带尾部空穴长度 150~200mm, 载带头部空穴长度 250~300mm, 头部的盖带加长 250mm。

Reserve a length of 150~200mm for the trailer of the carrier and 250~300 mm for the leader of the carrier and further 250mm of cover tape at the leading part of the carrier.

10.2 Reel (3000 pcs/Reel)



10.3 储存条件 Storage Period

产品收到后一年内使用完毕。

Product should be used within twelve months of receipt

湿敏等级 1 / 储存温度与湿度:

MSL 1 / Storage Temperature Range : -40°C~125°C degree C, Humidity : <85%RH