# 产 品 技 术 规 格 书

## SPECIFICATION

| | |
|---|---|
| 产品型号 PART NO： | LA31H2450-A27 |
| 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 ( V1.3 ) | |

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# 产品规格书版本更改记录

Version rejigger track record

| 版本号<br>Version | 更改记录　Rejigger | 拟制<br>Prepared | 批准<br>Approve | 日期<br>Date |
|---|---|---|---|---|
| V1.0 | 首次发行 | 罗昌桅 | 唐雄心 | 2015.8.11 |
| V1.1 | 更改编带厚度 | 蔡壮 | 卢冠宇 | 2016.10.11 |
| V1.2 | 更改产品尺寸公差值 | 罗昌桅 | 卢冠宇 | 2017.05.24 |
| V1.3 | 修正可靠性试验说明内容 8.1~8.4 | 潘枫 | 卢冠宇 | 2017.11.07 |
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备注：

1、更改产品电性能指标时，版本号需更换（V1.0 换为 V2.0、V3.0……）；

2、更改产品测试方法（包括可靠性测试条件），或更改使用条件时，当前版本号加系列（V1.0 换为 V1.1、V1.2……）。

## 1. 概述　INTRODUCTION

"佳利"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。

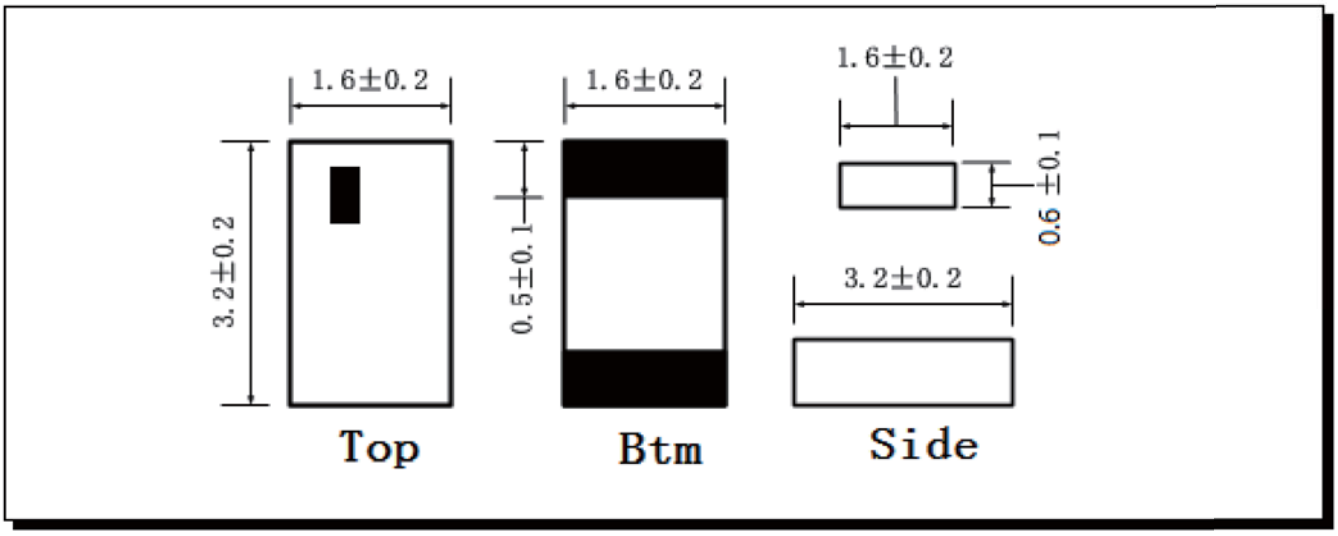
"GLEAD" Microwave Multi-Layer Ceramic Antenna LA series are designed to be used in WLAN、WiFi、Bluetooth、PHS、 Multiple-band Mobile phone antenna, FM, etc and compact size SMD chip design.

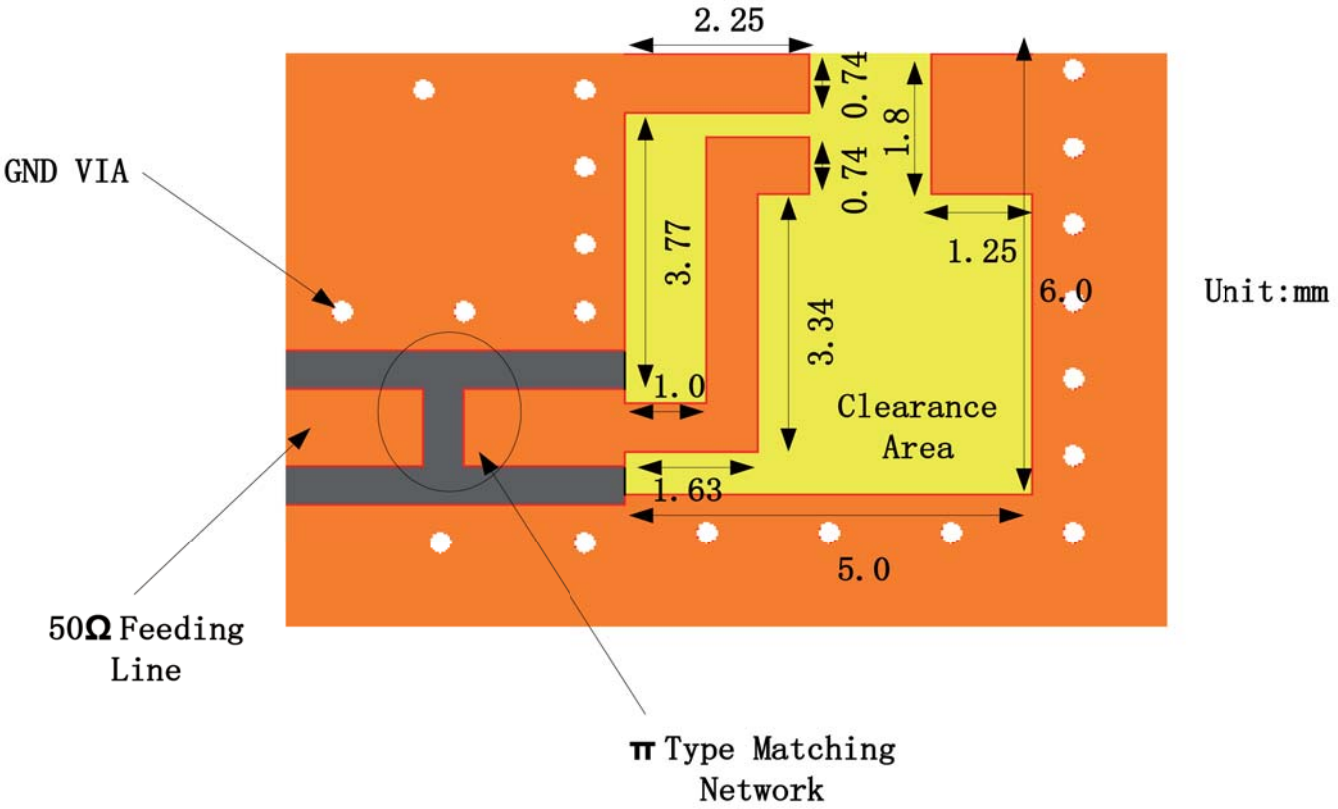
## 2. 型号　Part Number

LA 31 H 2450 - A27

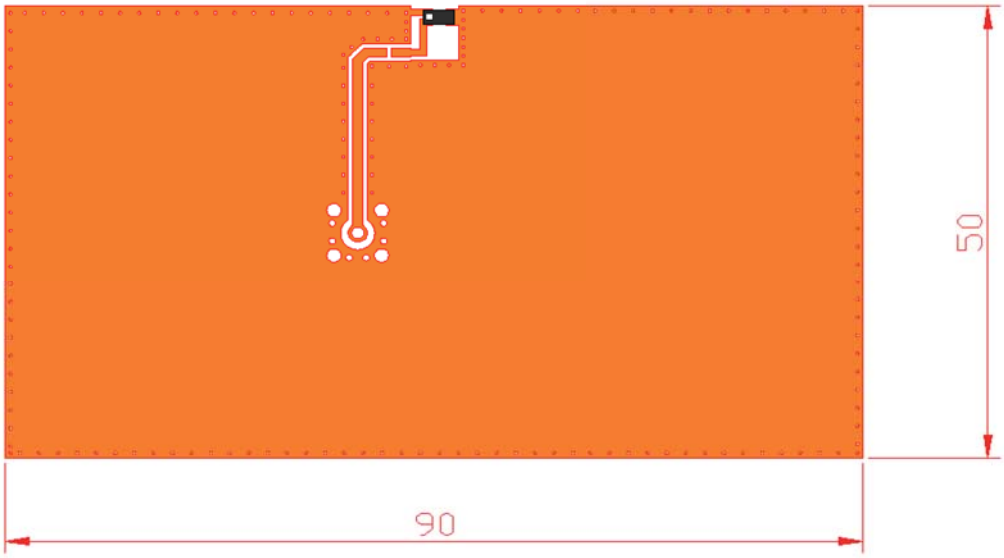
- A27：产品名称，编号 A27/Product Name: A27
- 2450：天线频率/ Antenna Frequency:　2450 MHz
- H：产品设计结构 H 型/ Via Design Series
- 31：产品尺寸/Size：3.2×1.6×0.6
- LA：多层结构天线/Multi-layer Antenna

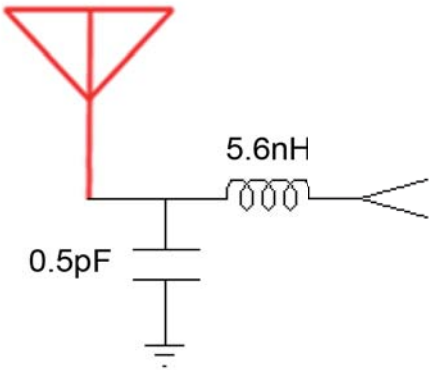
## 3. 外型尺寸及测试板焊盘尺寸 Dimensions（Unit：mm）






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

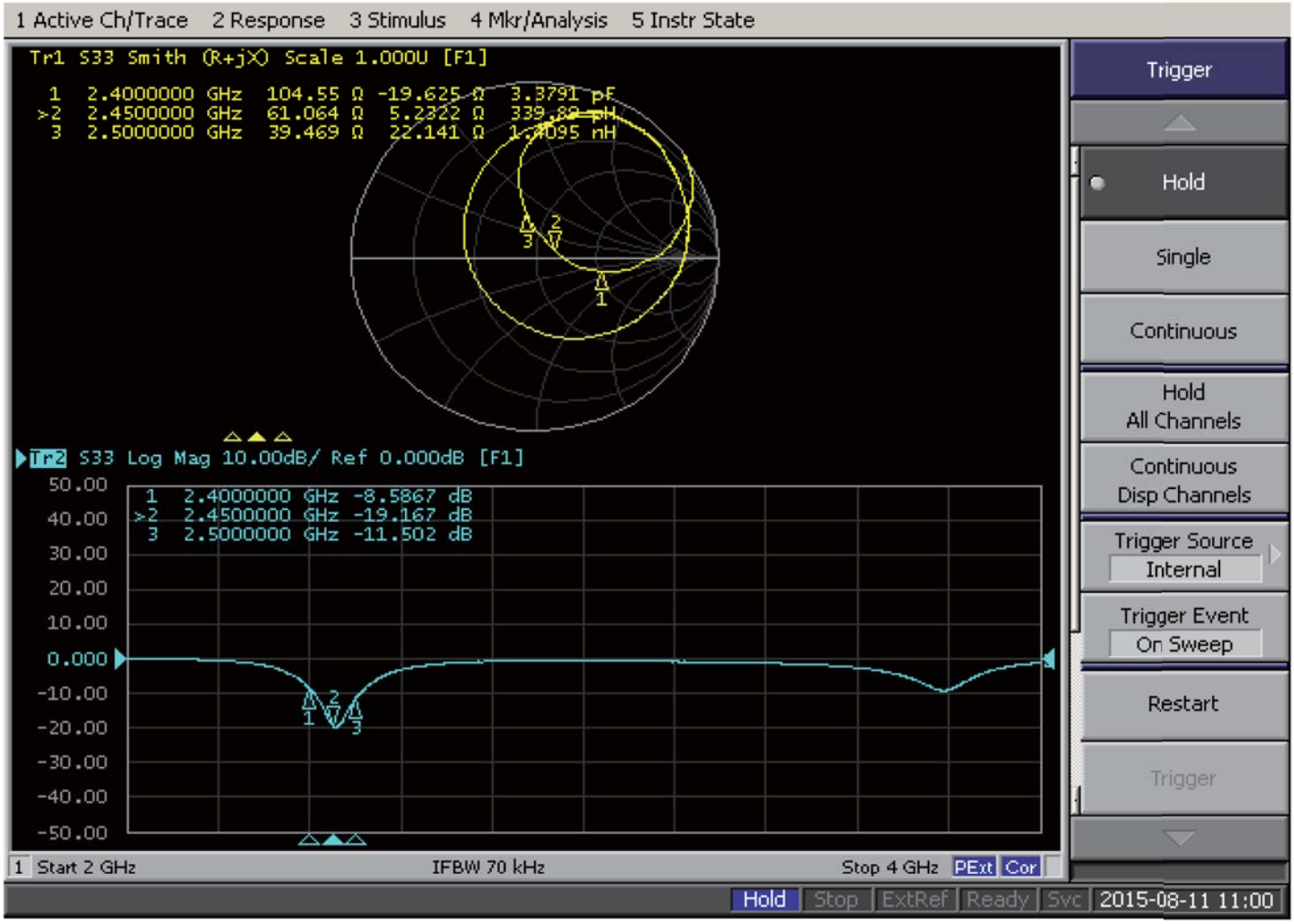


## 5. 电气性能　Electrical Characteristics

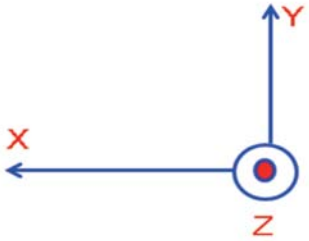
| No. | Item （项目） | Specifications （特性） |
|---|---|---|
| 5.1 | Central Frequency　中心频率(No matching) | 2545MHz |
| | (带匹配电路测试)After Matching | 2450 MHz |
| 5.2 | Band Width　通带宽度 | 100 MHz typ. |
| 5.3 | Peak Gain　峰值增益 | 5.54 dBi |
| 5.4 | V.S.W.R (in BW) 驻波比 | ≤2.0 |
| 5.5 | Polarization　极化方式 | Linear　线性 |
| 5.6 | Azimuth Beam width　方位角 | Omni-directional　全向 |
| 5.7 | Impedance　阻抗 | 50 Ω |

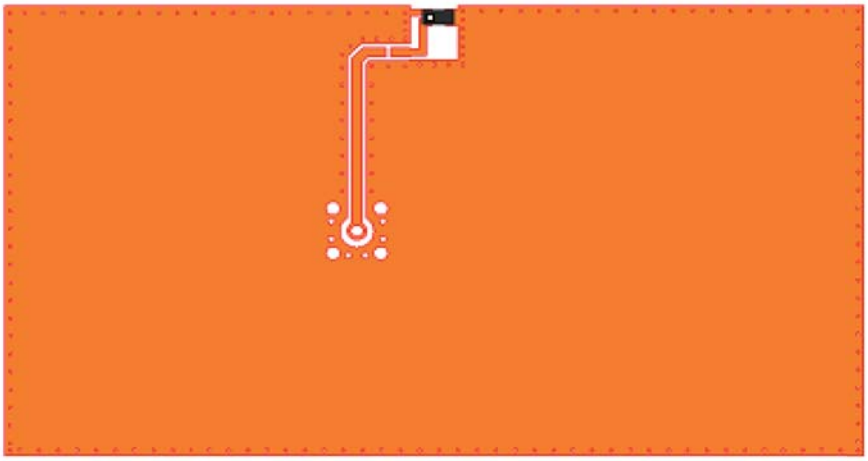
## 6. 特性曲线　Characteristic curve



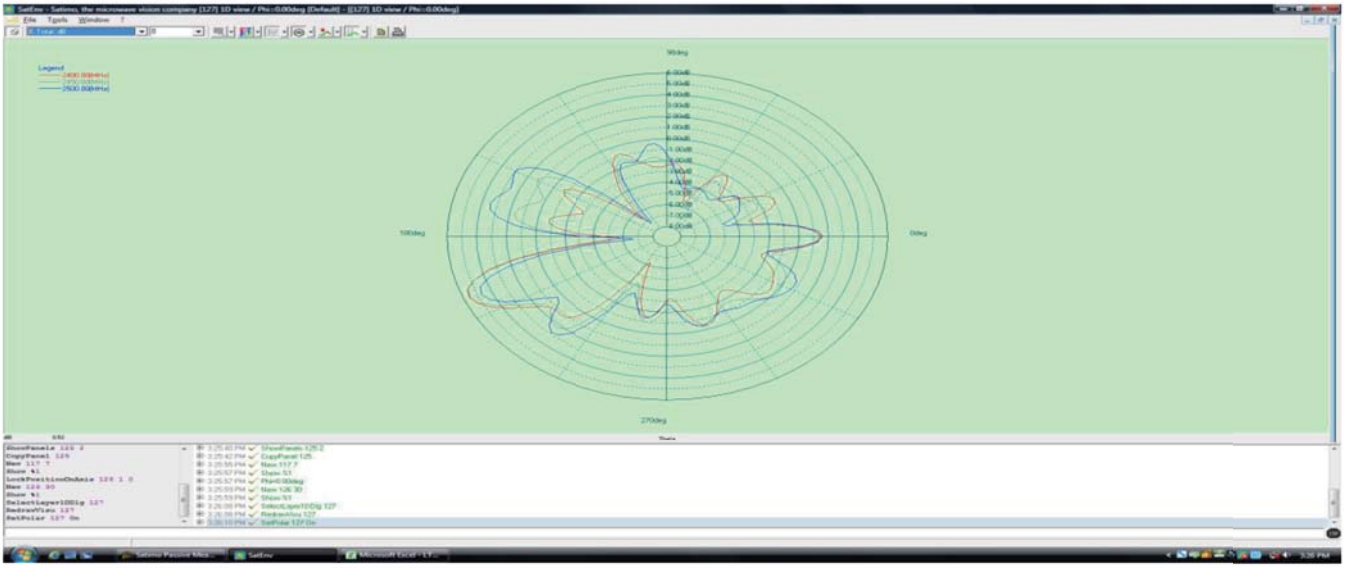
## 7. 方向图及效率 Radiation Pattern & Efficiency

coordinates：

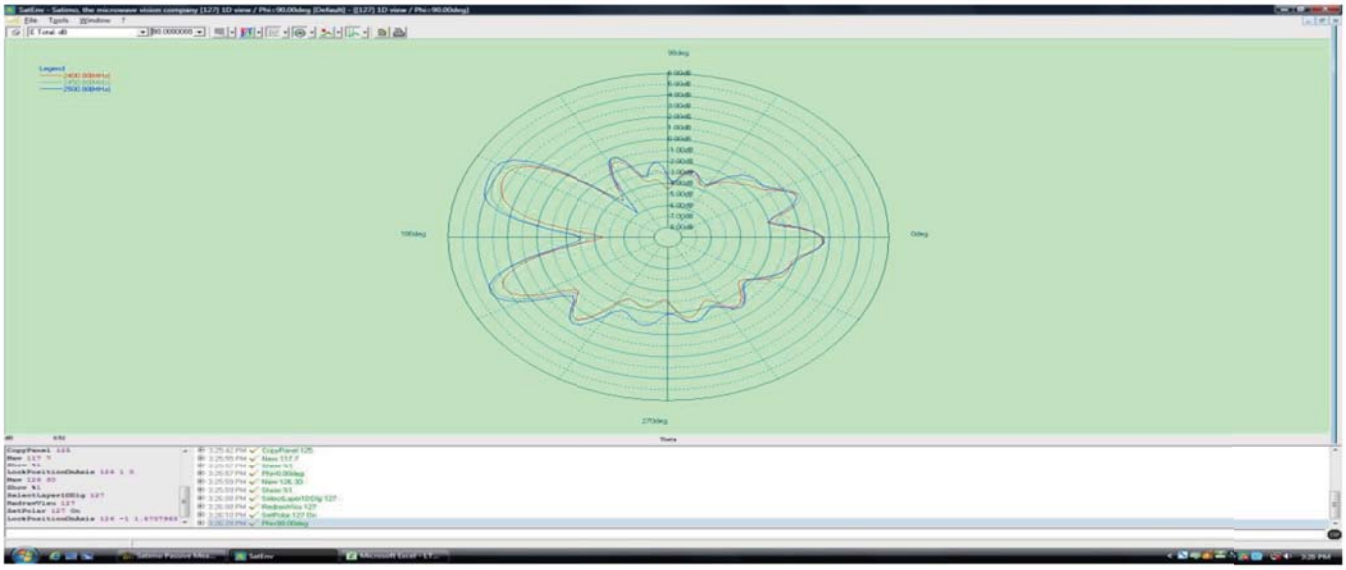


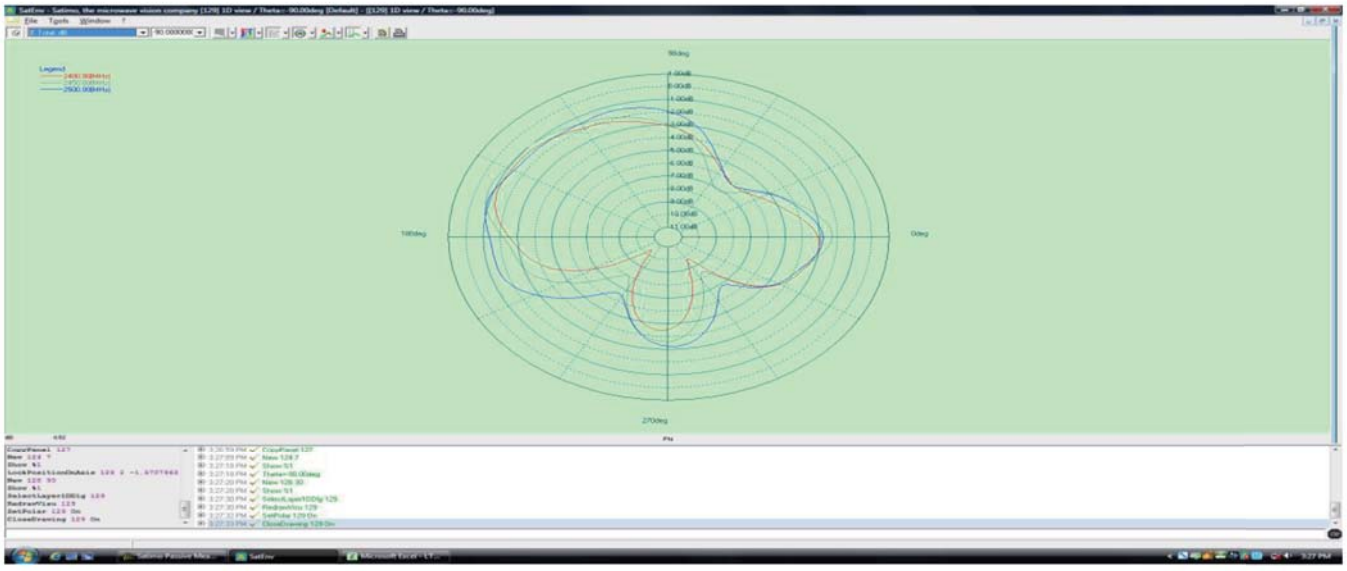
X-Z Plane



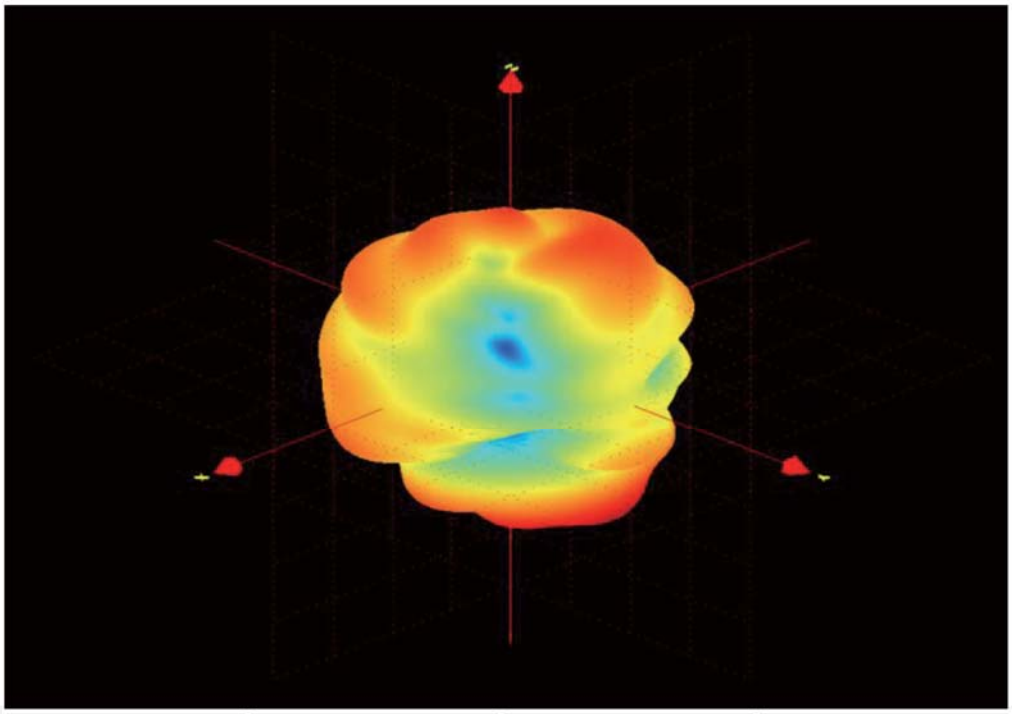
X-Y Plane



Y-Z Plane



3D Radiation Pattern



| Frequency (MHz) | 2400 | 2450 | 2500 |
|---|---|---|---|
| Avg. Gain (dBi) | -1.56 | -1.28 | -1.15 |
| Peck Gain (dBi) | 5.62 | 5.54 | 4.48 |
| Efficiency (%) | 71.8 | 73.5 | 75.6 |

## 8 可靠性试验后允许误差　Post Dependability Tolerance

经可靠性试验后允许比起始读数偏差见下表

Post Dependability Tolerance　( Refer to the table )

| No. | Item （项目） | Post Dependability Tolerance (可靠性试验后允许附加误差) |
|---|---|---|
| 8.1 | Central Frequency　中心频率 | ±5 MHz |
| 8.2 | Band Width　通带宽度 | ±5 MHz |
| 8.3 | Gain　增益 | ±0.1 dBi |
| 8.4 | V.S.W.R (in BW) 驻波比 | ±0.1 |

## 9 可靠性试验　Dependability Test

基准条件：温度范围 Temperature range　25±5℃

相对湿度范围 Relative Humidity range　55~75%RH

工作温度 Operating Temperature range　-40℃~+85℃

贮藏温度 Storage Temperature range　-40℃~+85℃

### 9.1 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.

### 9.2 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.

### 9.3 耐焊接热　Solder Heat Proof

能承受经 120~150℃的温度预热 120 秒后，在 255℃+10℃的焊锡浸 5±0.5 秒，或 300℃-10℃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℃~150℃ for 120 seconds and dipping in soldering Sn at 255℃+10℃ for 5±0.5 seconds，or electric iron 300℃-10℃ for 3±0.5 seconds，without damnify.

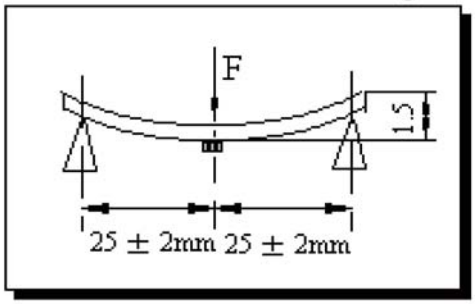
### 9.4 结合力试验　Tensile Strength of Terminal

在产品电极端子上或表面上应能承受 1kg 垂直拉力 10±1 秒。

The device should not be broken after tensile force of 1.0kg is slowly applied to pull a lead pin of

the fixed device in the lead axis direction for 10±1 seconds.

## 9.5 耐弯曲试验 Bending Resist Test




将产品按图焊在 1.6±0.2mm 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 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 .

## 9.6 耐湿热特性 Moisture Proof

在温度为 60±2℃，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±2℃and the relative humidity 90~95% RH for 96 hours and 1~2 hours recovery time under normal condition.

## 9.7 高温特性 High Temperature Endurance

在温度为 85±5℃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 85±5℃for 96±2 hours and 1~2 hours recovery time under normal temperature.

## 9.8 低温特性 Low Temperature Endurance

在温度为-40℃±5℃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。

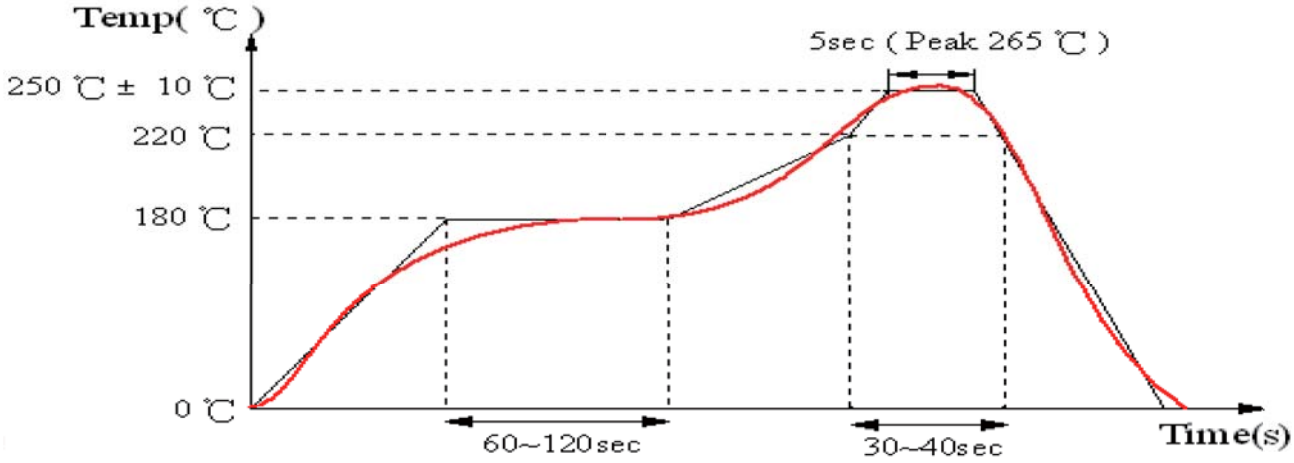
The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature -40℃±5℃ for 96±2 hours and to 2 hours recovery time under normal temperature.

## 9.9 温度循环 Temperature Cycle Test

在-40℃温度中保持 30 分钟，再在+85℃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。

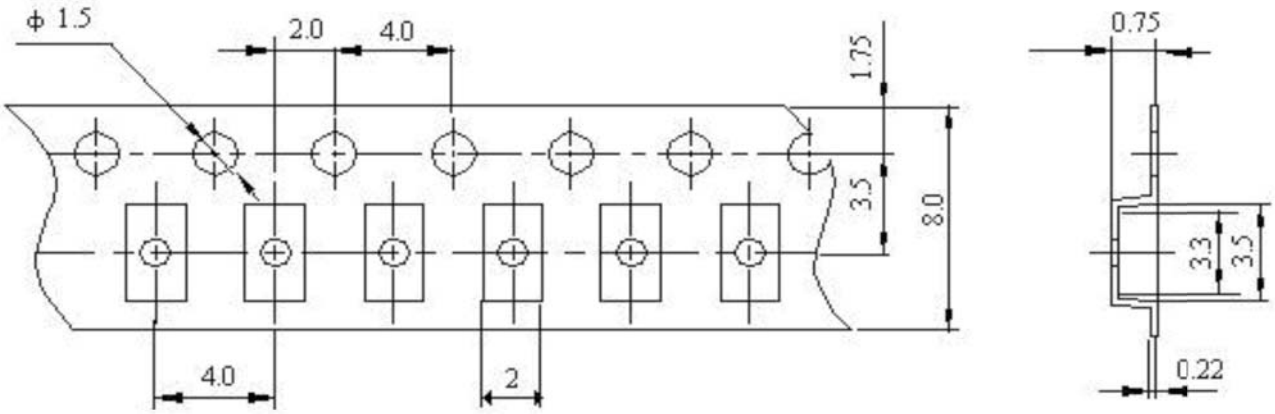
The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the low temperature -40℃ and high temperature +85℃ for 30±2 min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

## 10 回流焊温度 Reflow Soldering Standard Condition



## 11 包装尺寸(3216)　Packaging and Dimensions

### 11.1 Plastic Tape

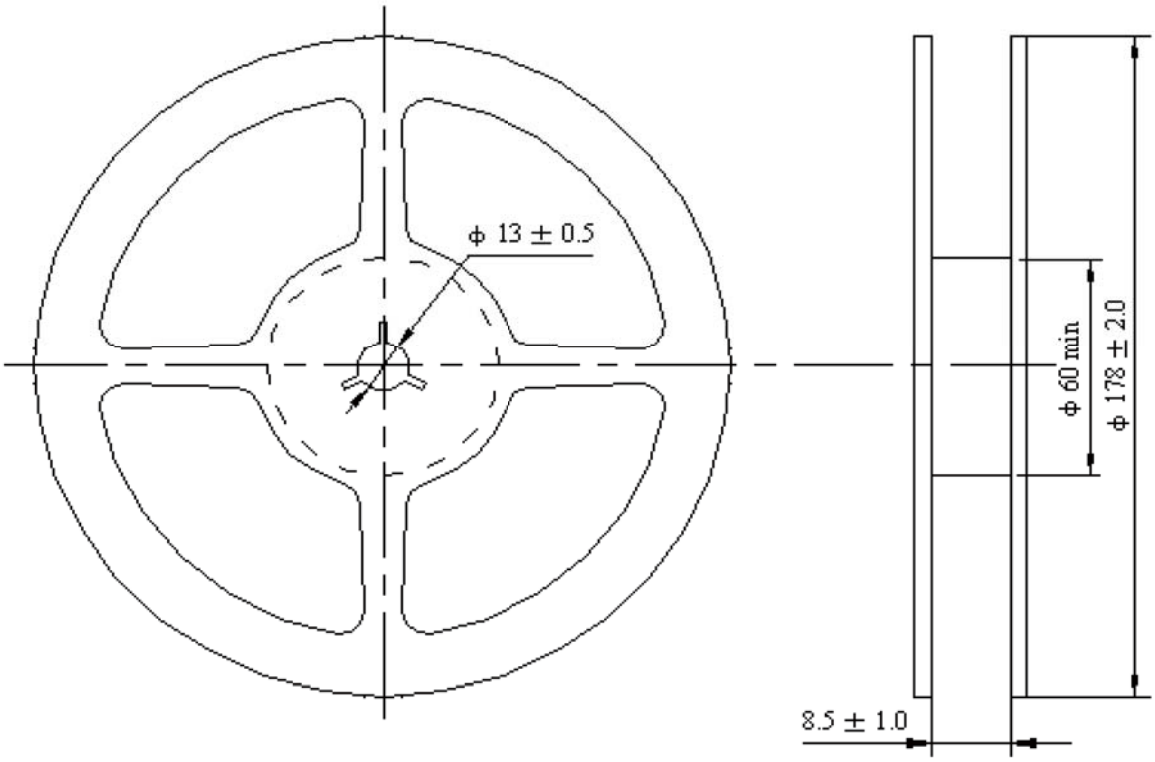



包装说明：　Remarks for Package

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.

### 11.2 Reel（3000 pcs/Reel）




### 11.3 储存条件　Storage Period

易氧化产品，真空状态储存一年. 产品拆封后请于 168 小时内用完或重新密封包装！

Oxidizable, 12 months in vacuum sealed bag . Material, please repack within 168 hours by re-seal the package treatment after use them!

储存温度与湿度:

Storage Temperature Range : <30 degree C, Humidity : <60%RH