产 品 技 术 规 格 书
SPECIFICATION

产品型号 **PART NO:**	**LA52H2450-A36**
客户料号 **CUSTOMER PART NO:**	
客户确认 **CUSTOMER APPROVED BY:**	
确认日期 **APPROVED DATE:**	

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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产品规格书版本更改记录

Version rejigger track record

版本号 Version	更改记录 Rejigger	拟制 Prepared	批准 Approve	日期 Date
V1.0	首次发行	蔡壮	陆德龙	2015.12.25

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……）。

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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。

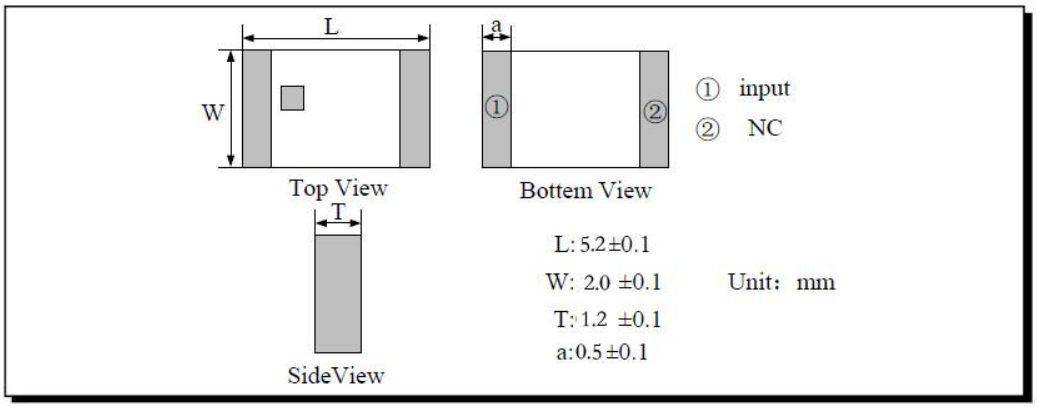
"GLEAD" Microwave Multi-Layer Ceramic Antenna LA series are designed to be used in WLAN、WiFi、Bluetooth、PHS、 Multiple-band Mobile phone antenna, FM, etc and compact size SMD chip design.

2. 型号　Part Number

LA　52　H　2450 – A36

- A36：产品名称，编号 A36/Proudct Name: A36
- 2450：天线频率/ Antenna Frequency: 2450 MHz
- H：产品设计结构 H 型/Via Design Series
- 52：产品尺寸/Size：5.2×2.0×1.2
- 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）



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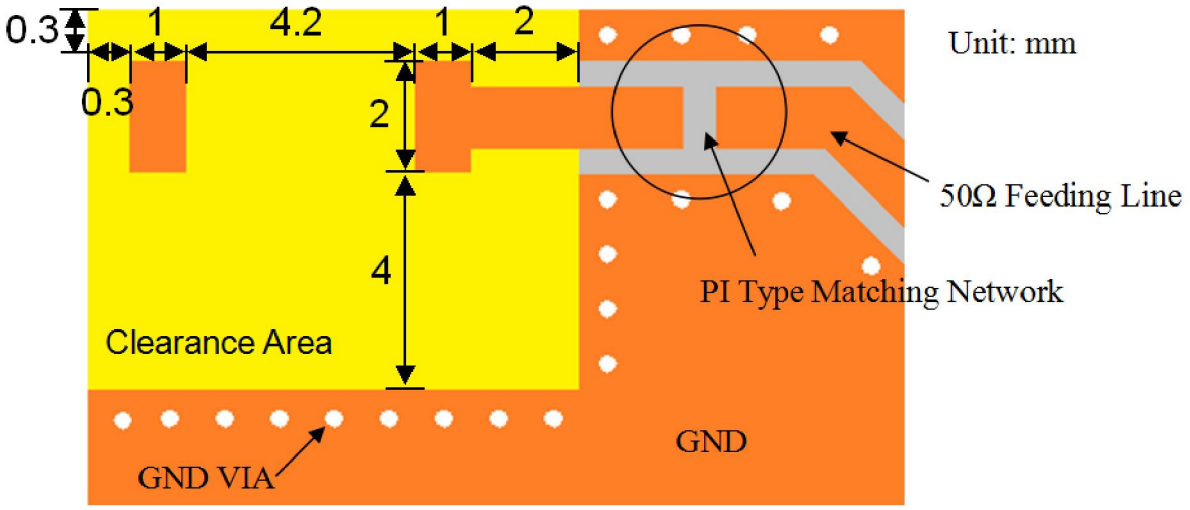
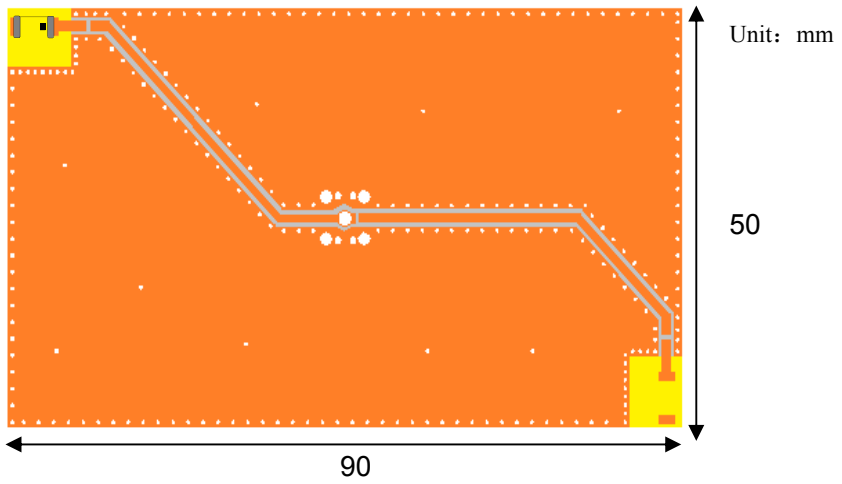
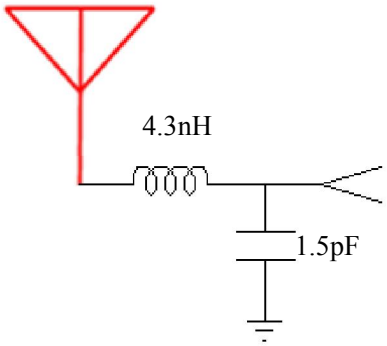


4. 测试电路和匹配电路 Evaluation Board and Matching Circuits





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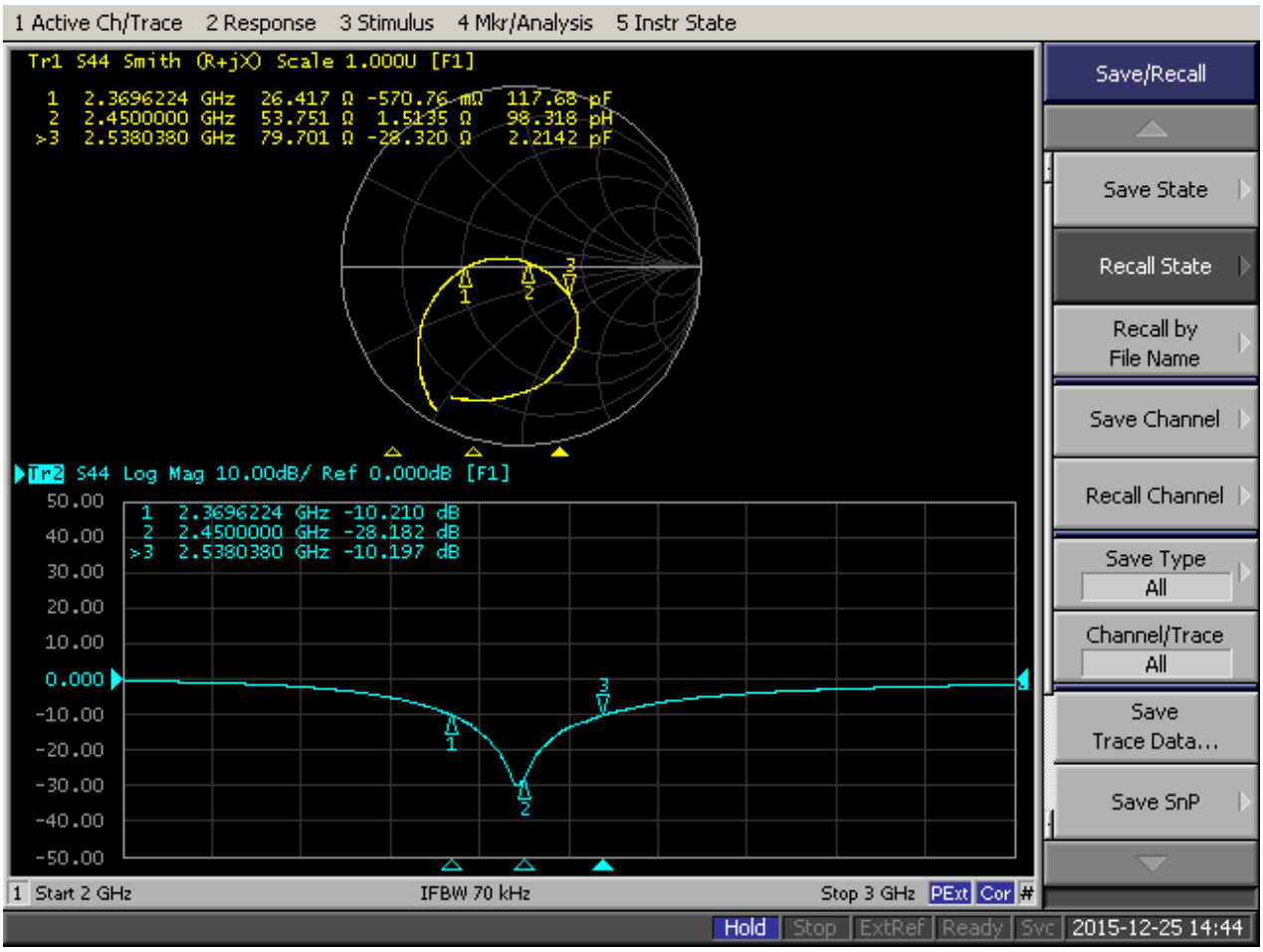
5. 电气性能　Electrical Characteristics

No.	Item （项目）	Specifications （特性）
5.1	Working Central Frequency　中心工作频率	2450 MHz
5.2	Band Width　通带宽度	100MHz typ.
5.3	Peak Gain　峰值增益	3.77dBi
5.4	V.S.W.R 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



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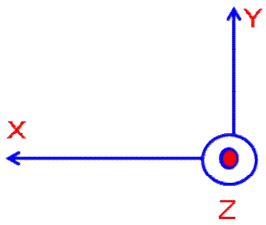
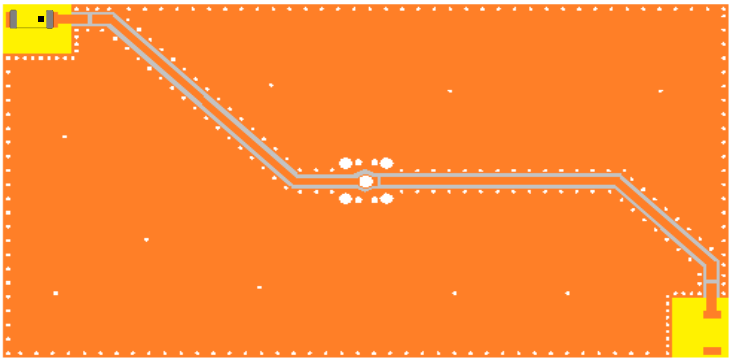
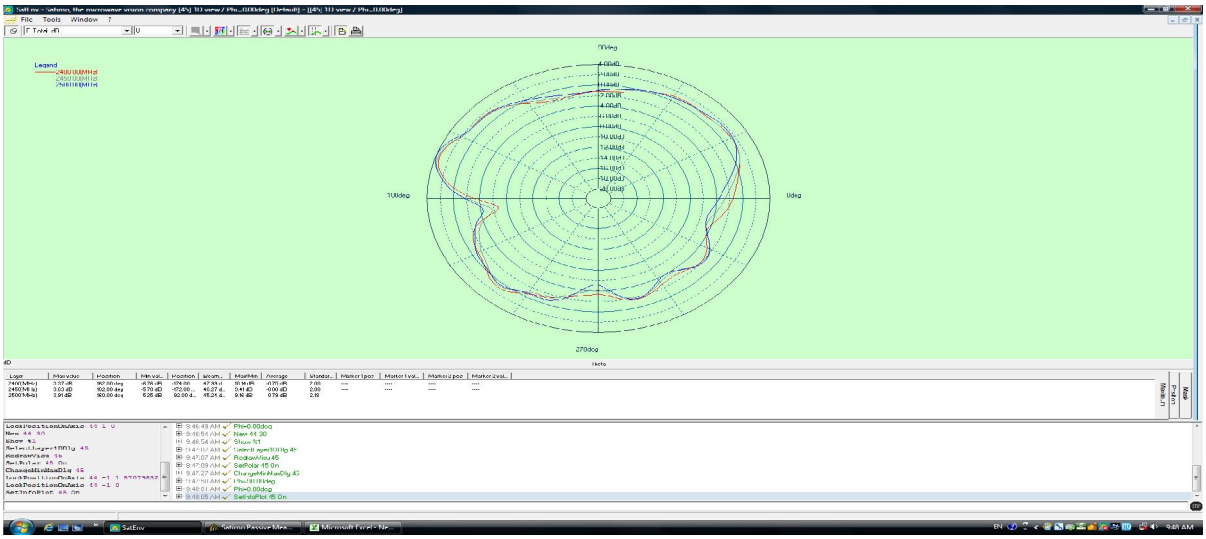
7. 方向图及效率 Radiation Pattern & Efficiency

coordinates：

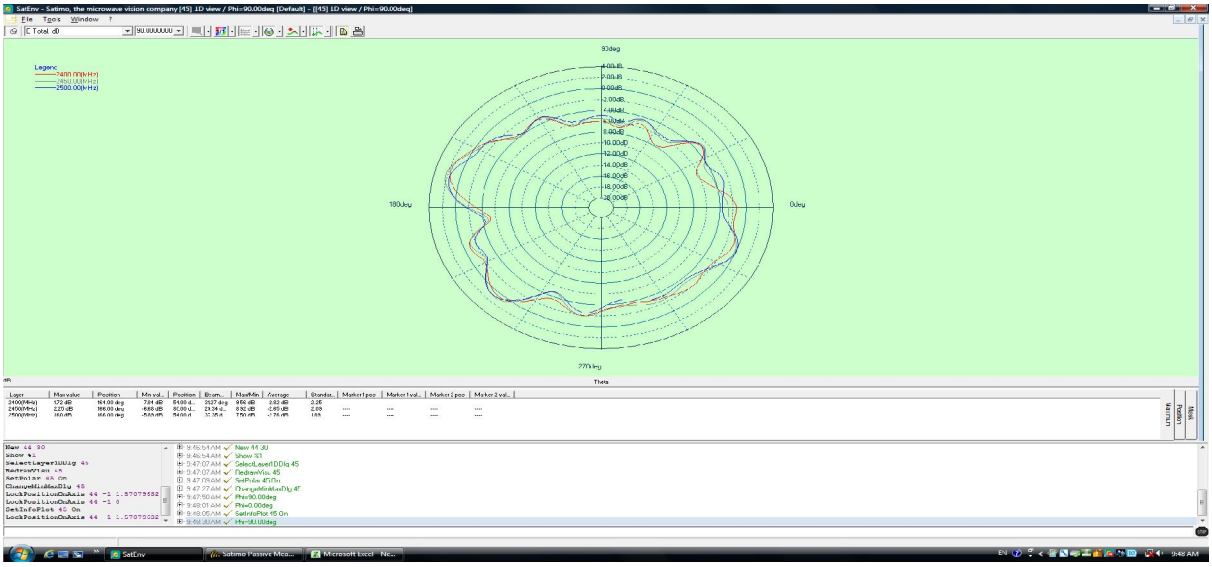




X-Z Plane Plane



Y-Z Plane



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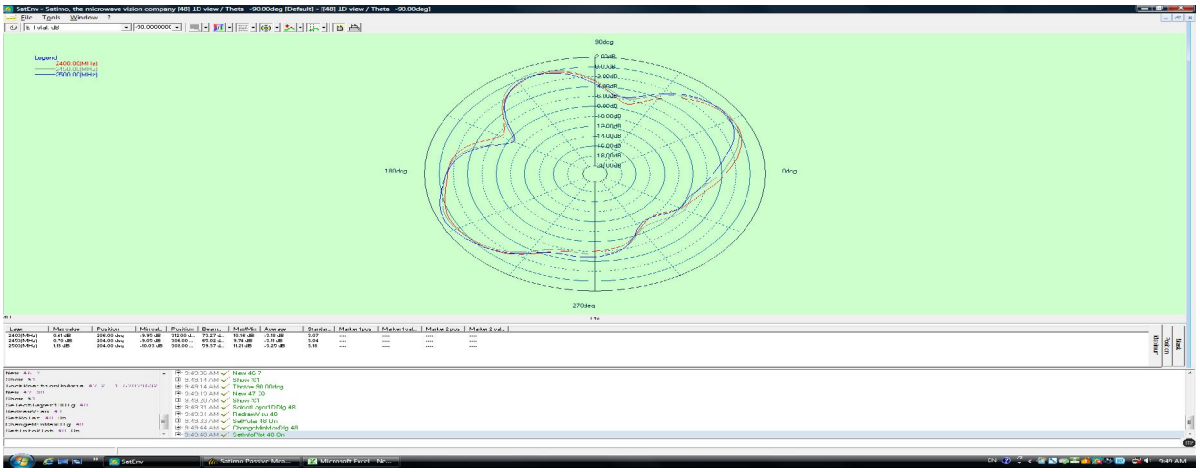
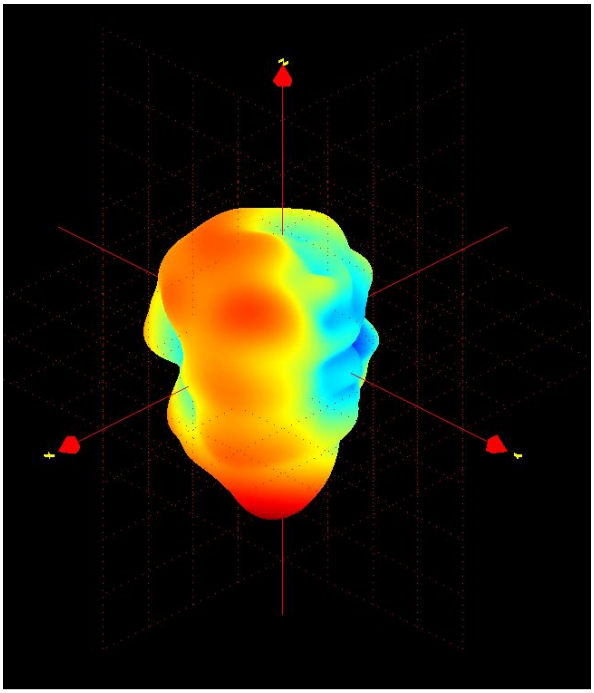
Specification

X-Y Plane



3D Radiation Pattern



Frequency (MHz)	2400	2450	2500
Avg. Gain (dBi)	-0.75	-0.79	-0.88
Peck Gain (dBi)	3.32	3.77	3.65
Efficiency (%)	70.2	71.1	71.2

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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 9.1~9.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 9.1~9.4 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 9.1~9.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 9.1~9.4 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.

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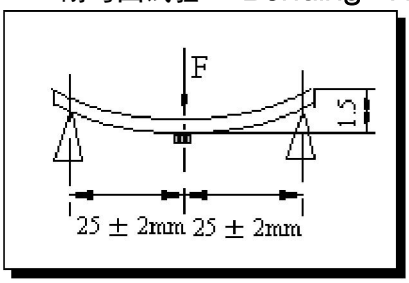
9.5 耐弯曲试验 Bending Resist Test



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 9.1~9.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 9.1~9.4 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 condlition.

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 9.1~9.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 9.1~9.4 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 9.1~9.4 规定。

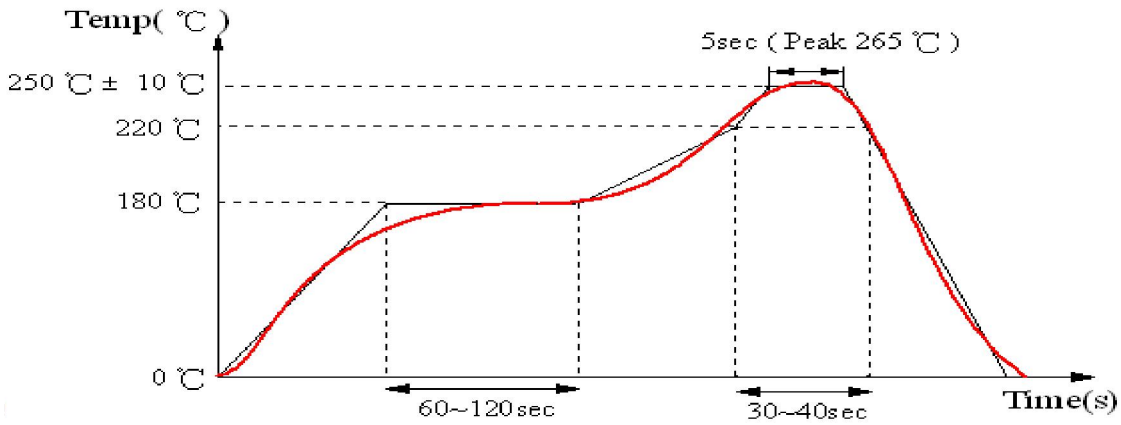
The device should also satisfy the electrical characteristics specified in paragraph 9.1~9.4 after exposed to the temperature -40℃±5℃ for 96±2 hours and to 2 hours recovery time under normal temperature.

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 9.1~9.4 规定。

The device should also satisfy the electrical characteractics specified in paragraph 9.1~9.4 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



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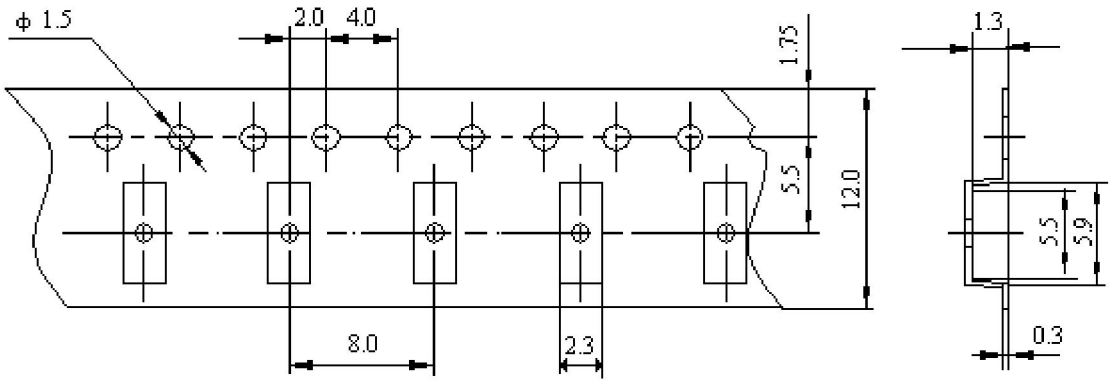
11 包装尺寸(5220)　Packaging and Dimensions

11.1 Plastic Tape

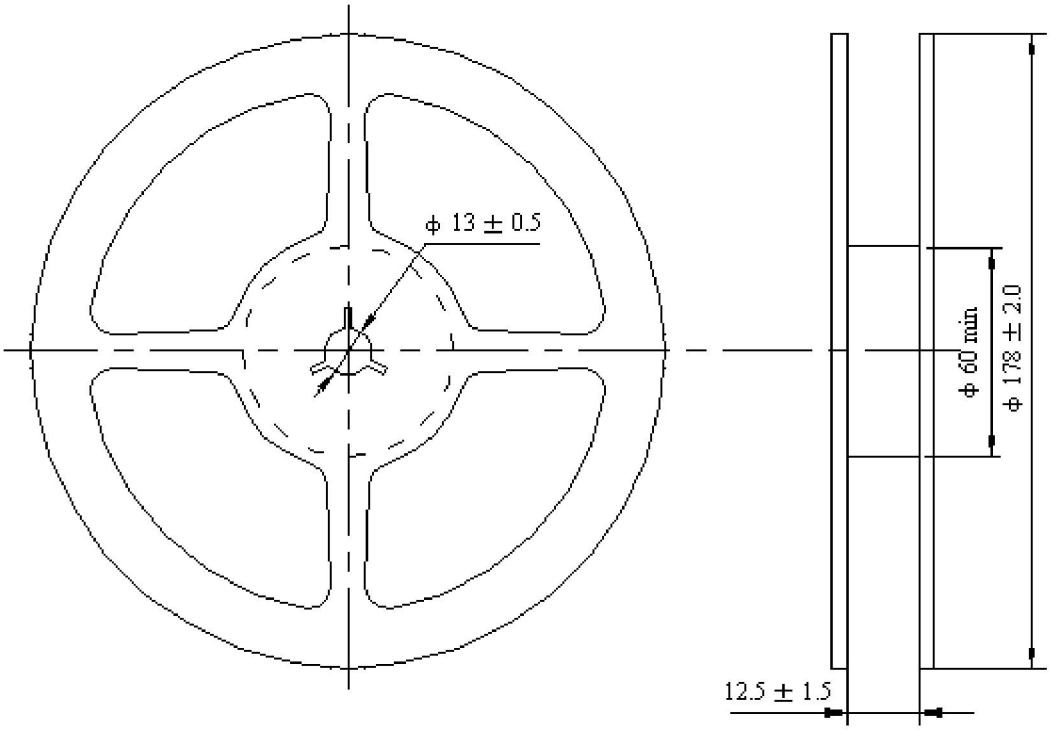


包装说明：　Remarks for Package

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（1000 pcs/Reel）



11.3 储存条件　Storage Period

易氧化产品，产品拆封后请于 48 小时内用完或重新密封包装！

Oxidizable. material,please repack within 48 hours by re-seal the package treatment after use them!

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