产 品 技 术 规 格 书
SPECIFICATION

产品型号 PART NO：	LA31H2450-A35
客户料号 CUSTOMER PART NO：	
客户确认 CUSTOMER APPROVED BY：	
确认日期 APPROVED DATE：	

RoHS Compliant Parts

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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
V1.1	更改产品尺寸公差值	罗昌桅	卢冠宇	2017.05.24
V1.2	修正可靠性试验说明内容 8.1~8.4	潘枫	卢冠宇	2017.11.07
V1.3	修正可靠性项目 9.4 内容 更新回流焊温度曲线图表 新增 11.1 产品包装摆放方向示意图 修正 11.3 产品储存条件为 MSL:1	潘枫	卢冠宇	2018.07.31

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。

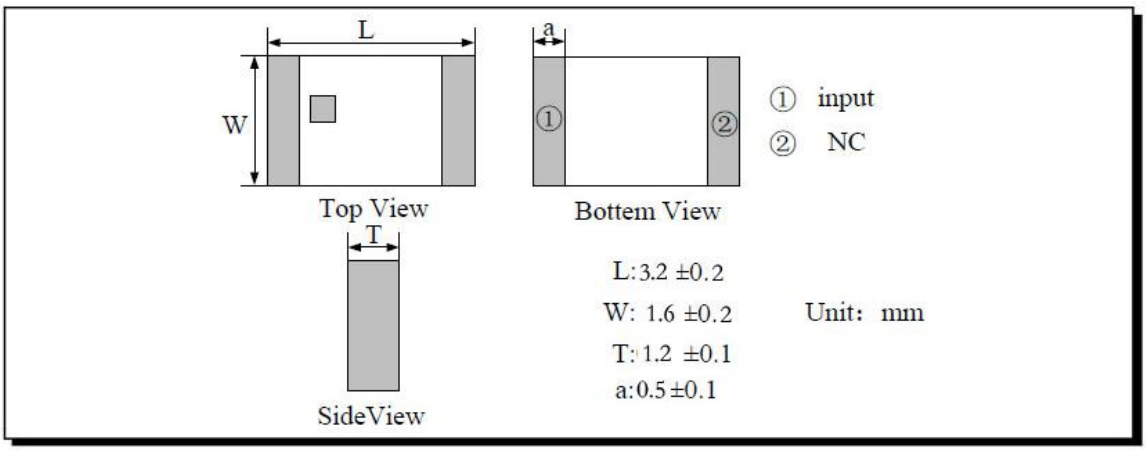
"GLEAD" Microwave Multi-Layer Ceramic Antenna LA series are designed to be used in WLAN、WiFi、Bluetooth、PHS、 Multiple-band Mobile phone antenna, FM, etc and compact size SMD chip design.

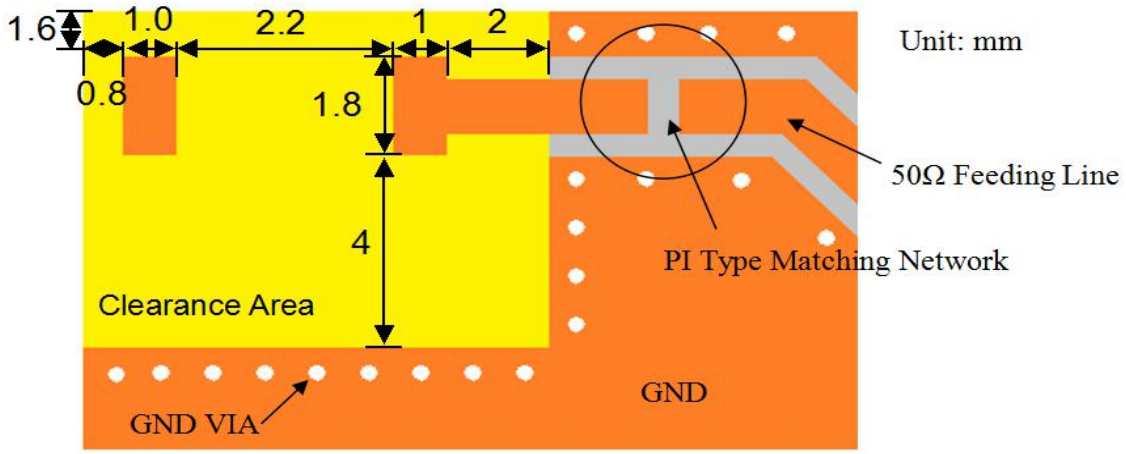
2. 型号　Part Number

LA 31 H 2450 - A35

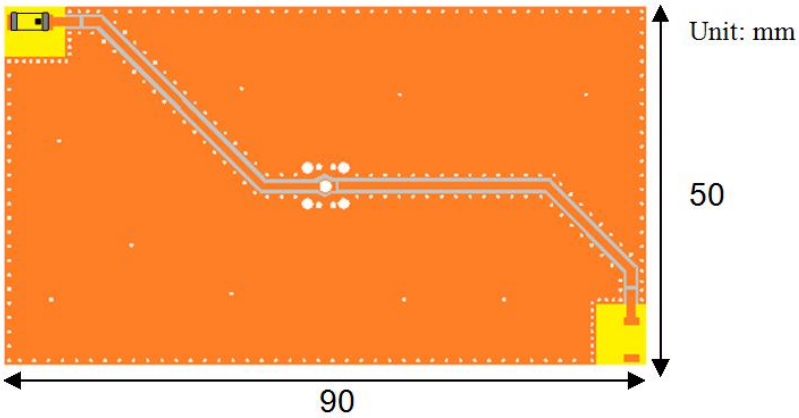
- A35：产品名称，编号 A35/Product Name: A35
- 2450：天线频率/ Antenna Frequency:　2450 MHz
- H：产品设计结构 H 型/Via Design Series
- 31：产品尺寸/Size：3.2×1.6×1.2
- LA：多层结构天线/Multi-layer Antenna

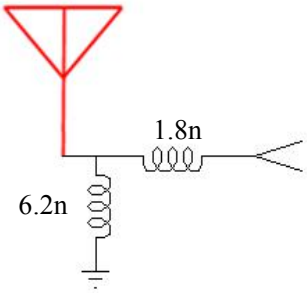
3. 外型尺寸　Dimensions（Unit：mm）





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

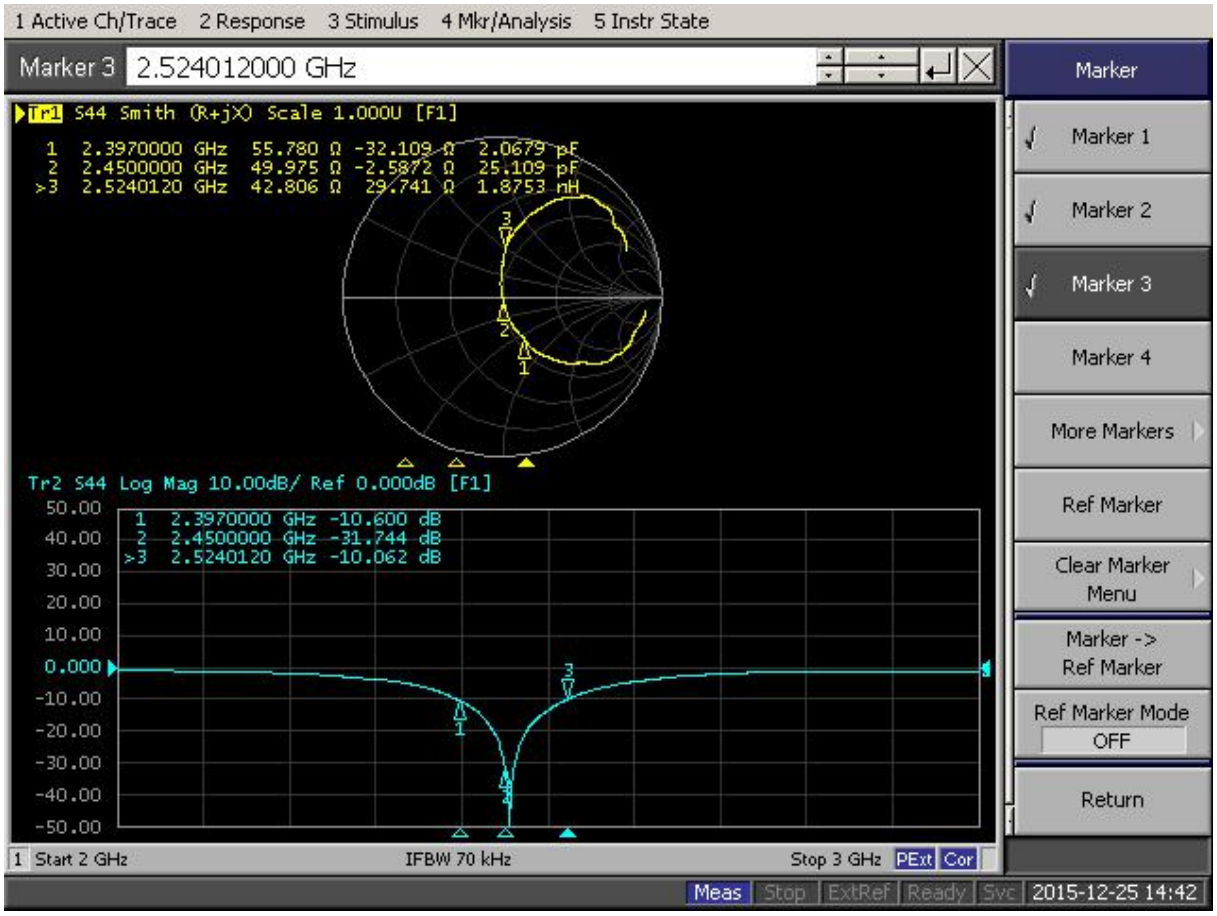




5. 电气性能 Electrical Characteristics

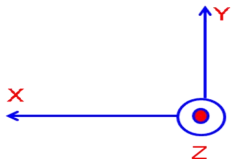
No.	Item （项目）	Specifications （特性）
5.1	Central Frequency 中心频率(No matching)	2412-2462MHz
	(带匹配电路测试)After Matching	2450 MHz
5.2	Band Width 通带宽度	100MHz typ.
5.3	Peak Gain 峰值增益	3.8dBi
5.4	V.S.W.R 驻波比	≤2.0
5.5	Polarization 极化方式	Linear 线性
5.6	Azimuth Beam width 方位角	Omni-directional 全向
5.7	Impedance 阻抗	50 Ω

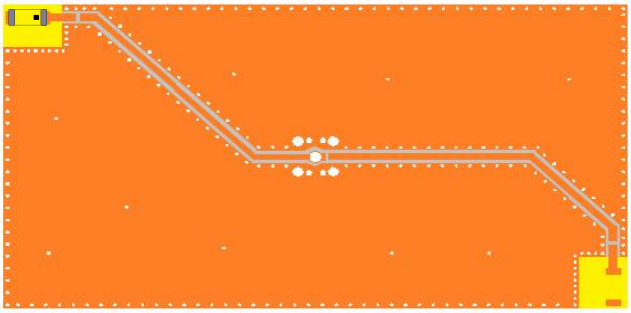
6. 特性曲线　Characteristic curve



7. 方向图　Radiation Pattern

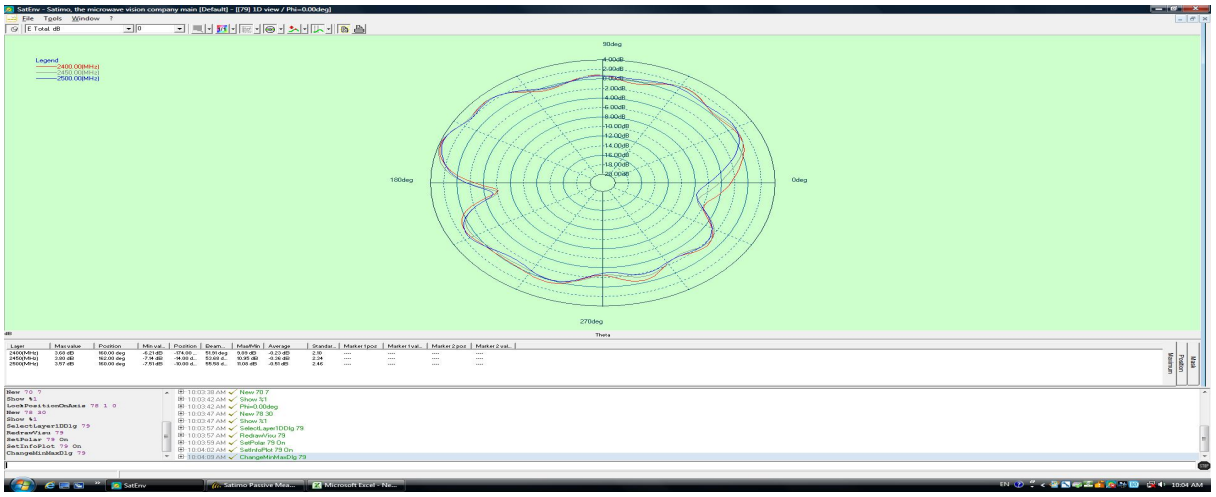
coordinates：



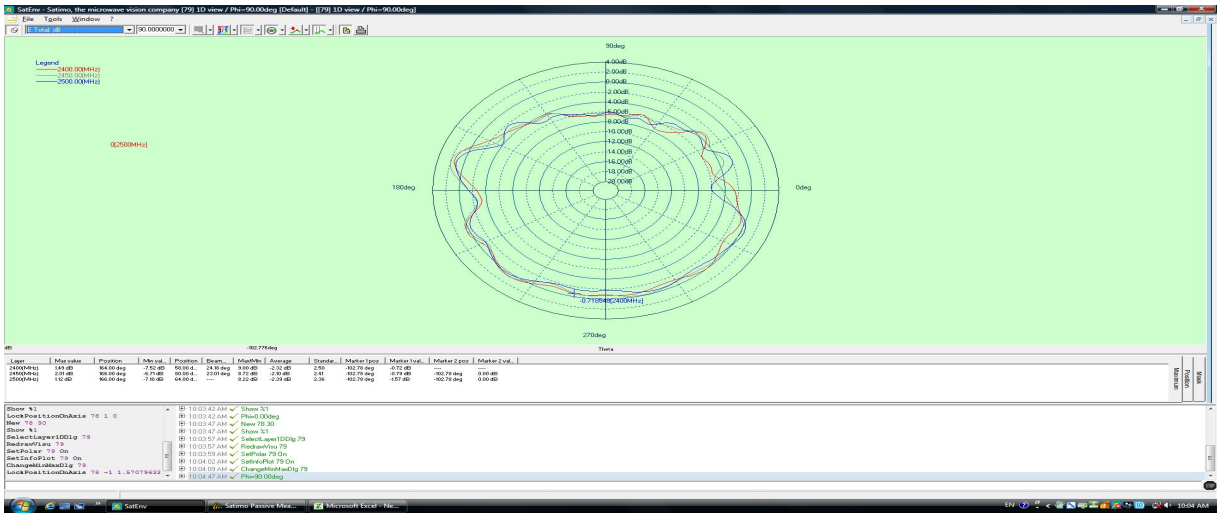


Specification

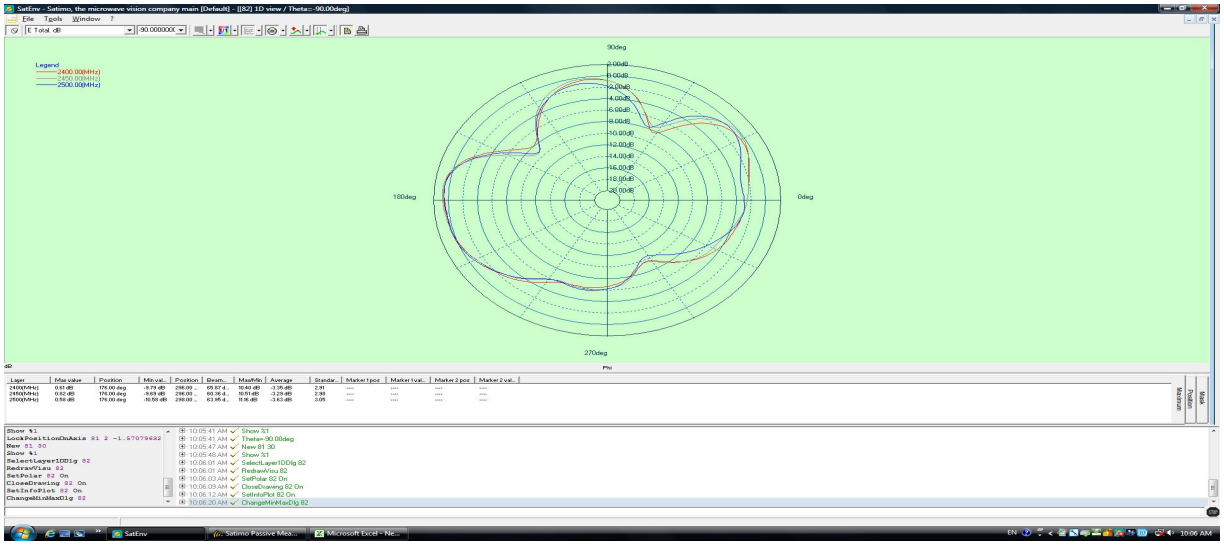
X-Z Plane



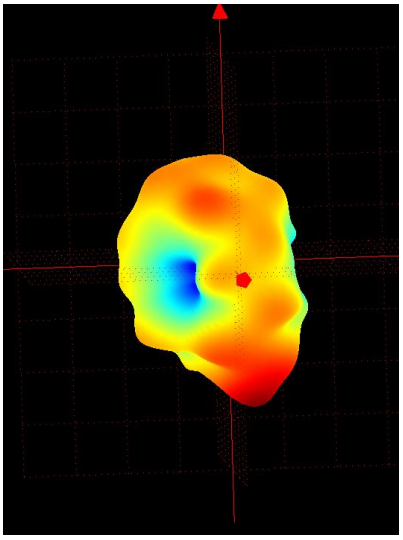
Y-Z Plane



X-Y Plane



3D Radiation Pattern



Frequency (MHz)	2400	2450	2500
Avg. Gain (dBi)	-0.23	-0.36	-0.51
Peck Gain (dBi)	3.68	3.8	3.57
Efficiency (%)	70	71.2	69

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℃~+125℃

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。

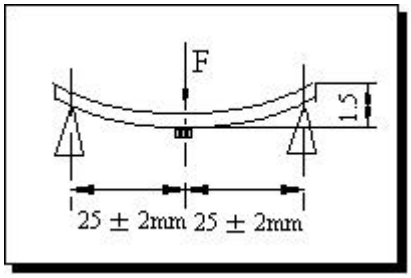
The device should be satisfied after preheating at 120℃~150℃ for 120 seconds and dipping in soldering Sn at 255℃+10℃ for 5±0.5 seconds，or electric iron 300℃-10℃ for 3±0.5 seconds，without damnify.

9.4 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.

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 125±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 125±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。

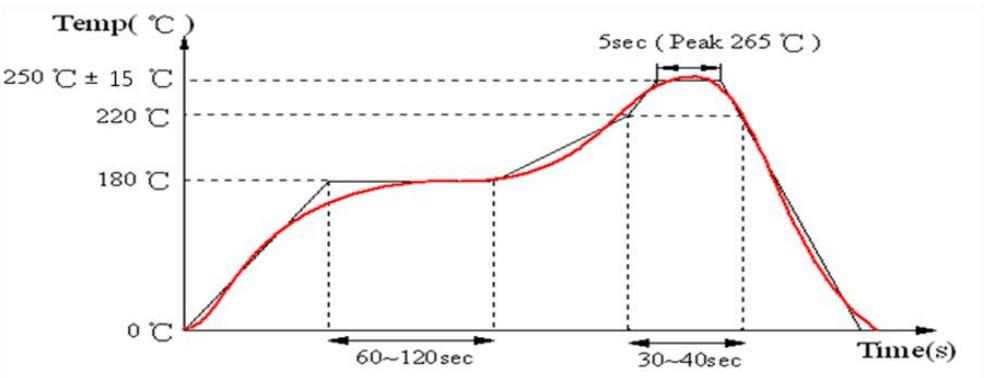
The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature -40℃±5℃ for 96±2 hours and to 2 hours recovery time under normal temperature.

9.9 温度循环 Temperature Cycle Test

在-40℃温度中保持 30 分钟，再在+125℃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。

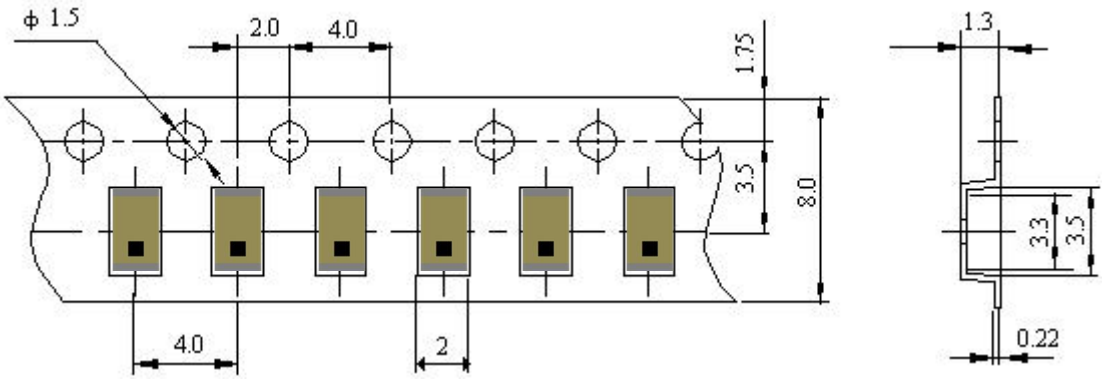
The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the low temperature -40℃ and high temperature +125℃ for 30±2 min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

10 回流焊温度 Reflow Soldering Standard Condition



11 包装尺寸(3216)　Packaging and Dimensions

11.1 Plastic Tape

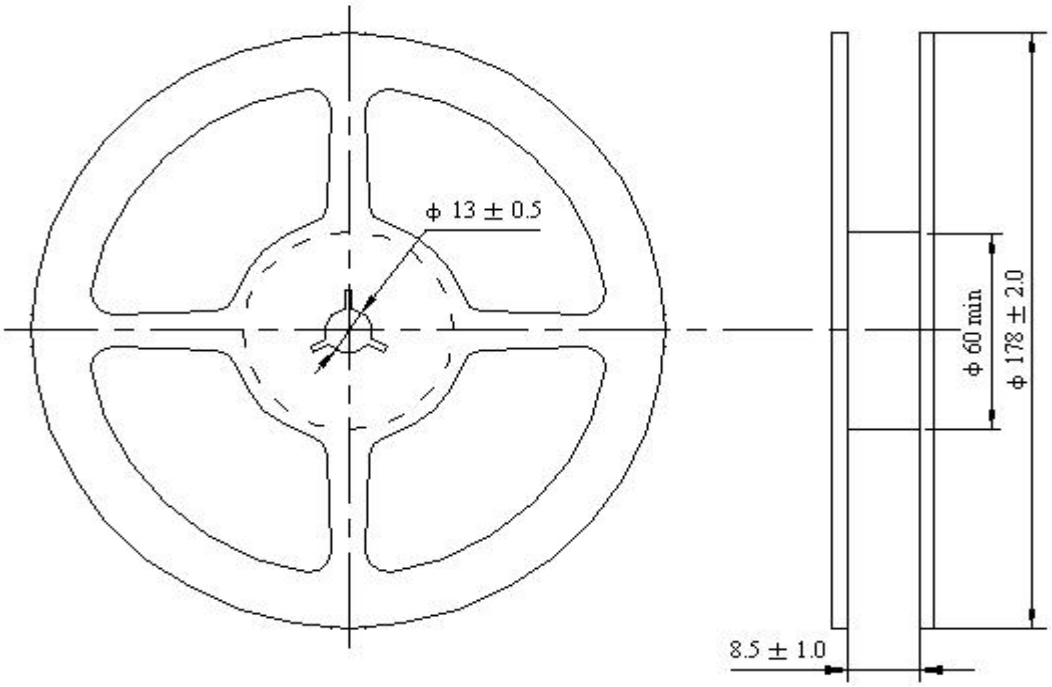


包装说明：　Remarks for Package

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

产品收到后半年内使用完毕.

Product should be used within six months of receipt.

湿敏等级 1 / 储存温度与湿度:

MSL 1 / Storage Temperature Range : <30 degree C, Humidity : <85%RH