

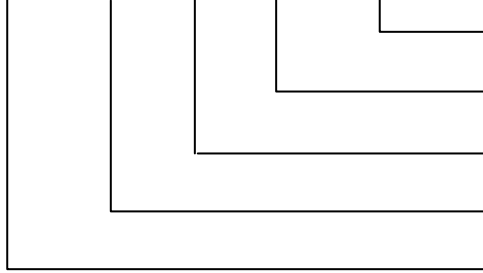
**1. 概述 INTRODUCTION**

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。

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 5220 P 5510 - A15



产品名称, 编号 A15/Product Name: A15

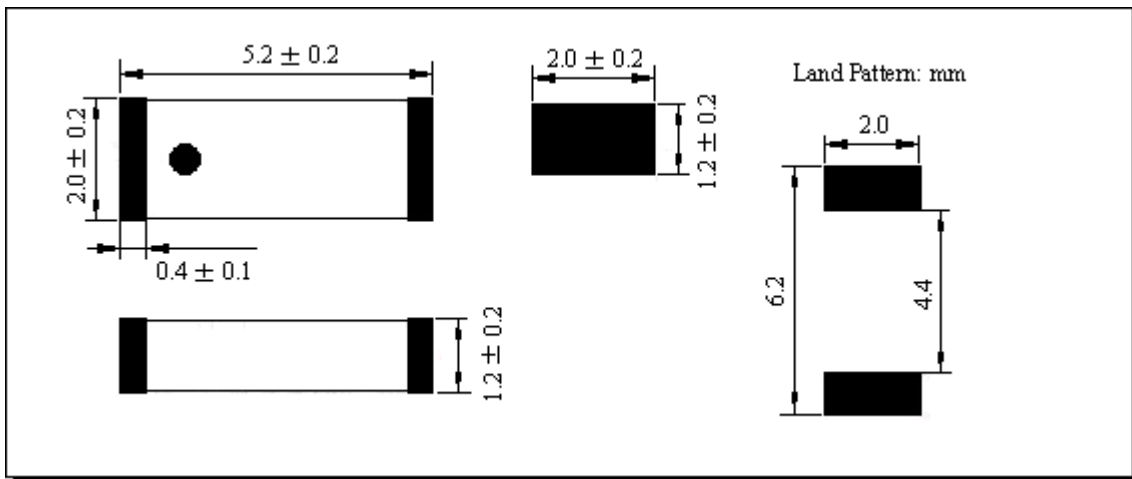
天线频率/ Antenna Frequency: 5510 MHz

产品设计结构 P 型/Planar Structure

产品尺寸/Size: 5.2×2.0×1.2

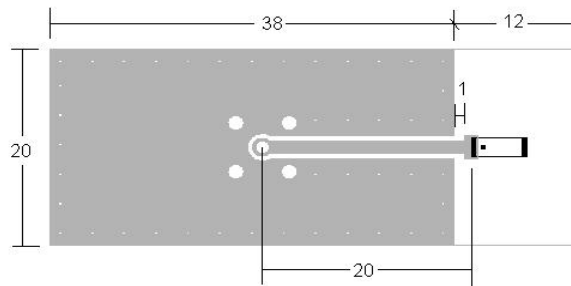
多层结构天线/Multi-layer Antenna

**3. 外型尺寸 Dimensions (Unit: mm)**



**4. 测试电路和匹配电路**

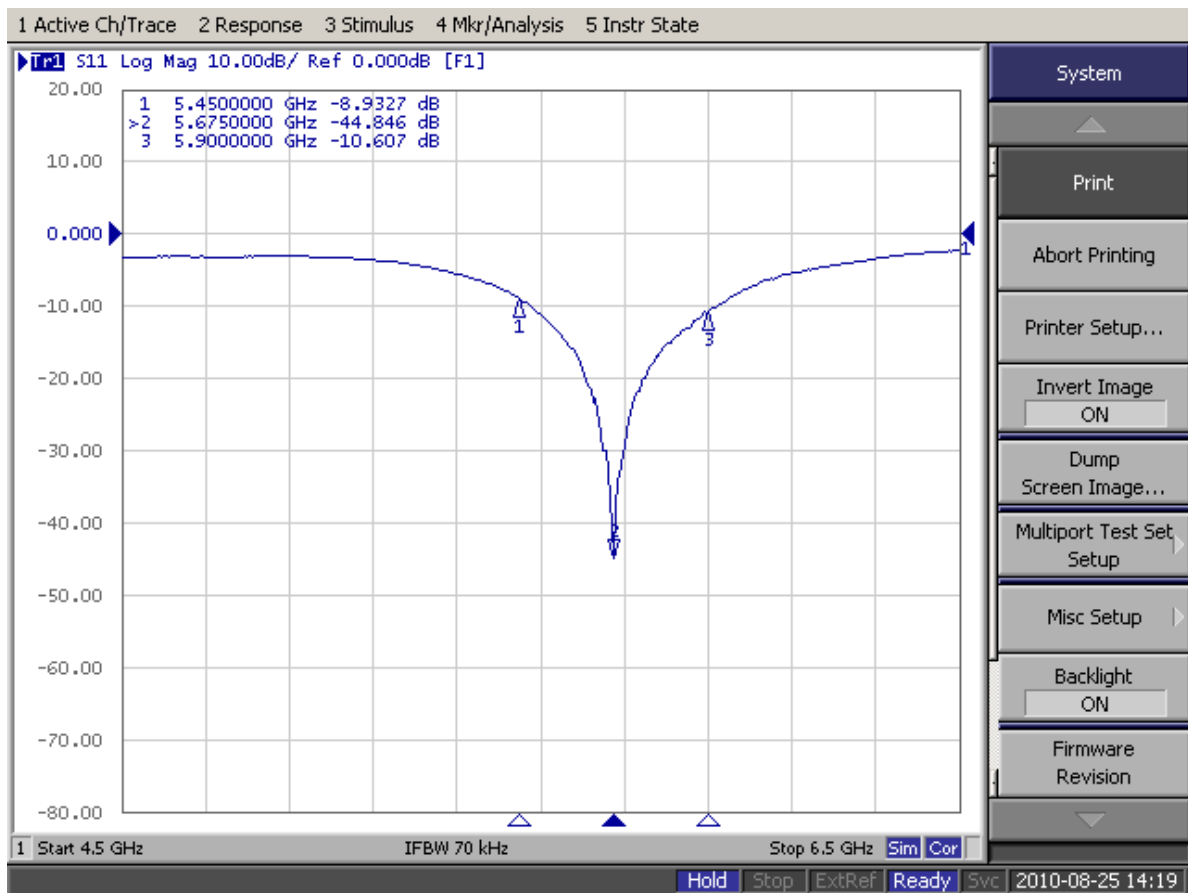
**Evaluation Board and Matching Circuits**



5. 电气性能 **Electrical Characteristics**

No.	Item (项目)	Specifications (特性)
5.1	Working Central Frequency 中心工作频率	5510MHz
5.2	Band Width 通带宽度	450 MHz ( 5450~5900MHz )
5.3	Gain 增益	0~2 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

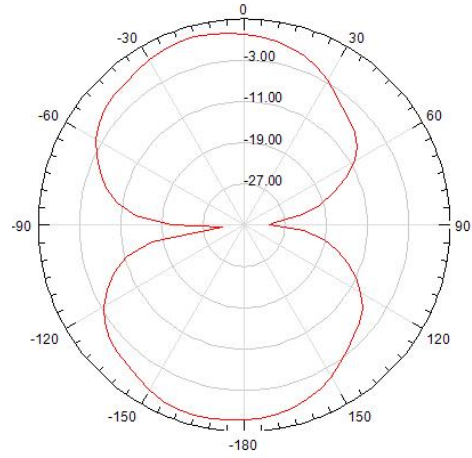
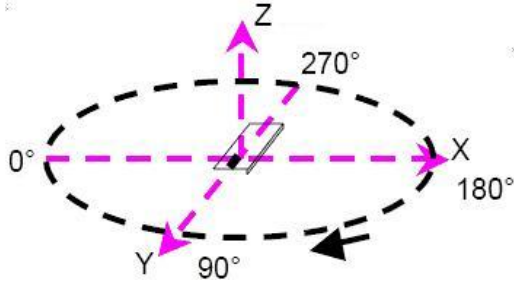
6. 特性曲线 **Characteristic curve**



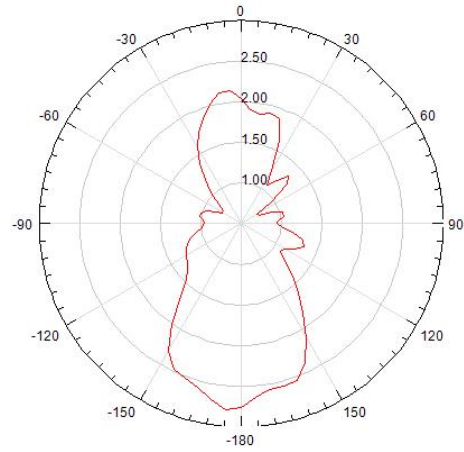
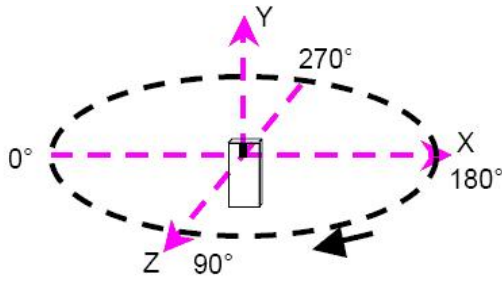
7 方向图 Radiation Pattern

7.1、5.45GHz 点方向图

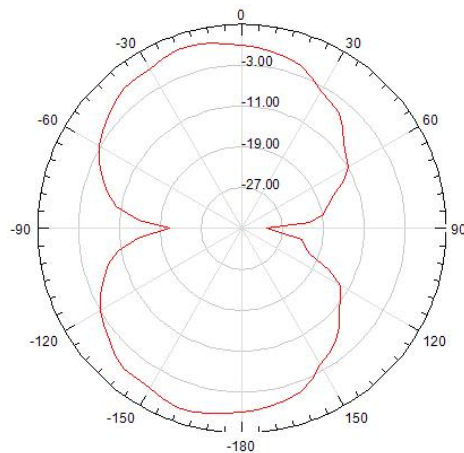
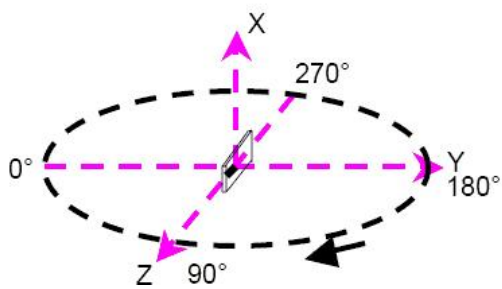
XY cut @5.45GHz



XZ cut @5.45GHz

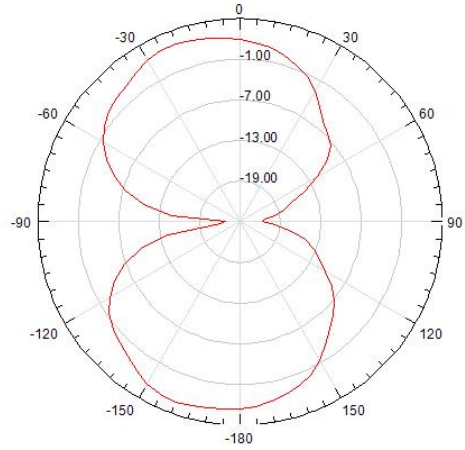
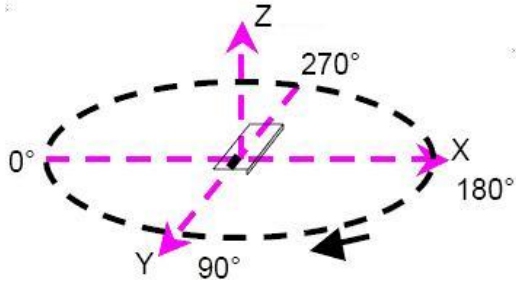


YZ cut @5.45GHz

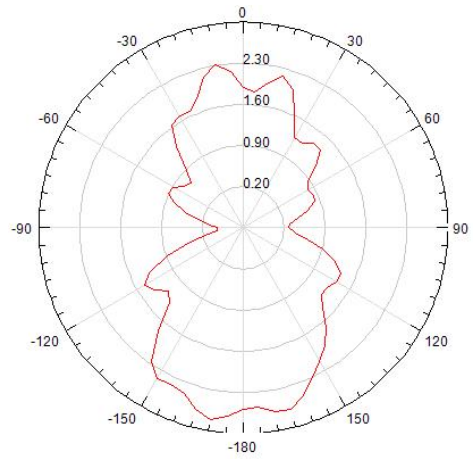
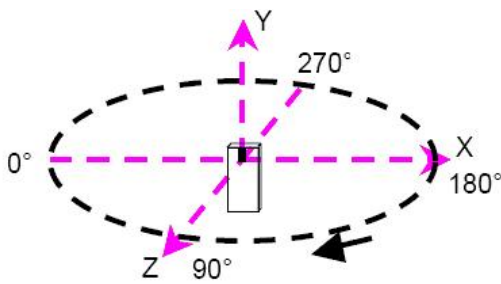


7.2、 5.675GHz 点方向图

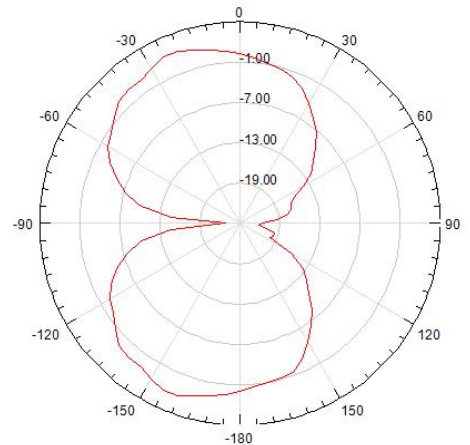
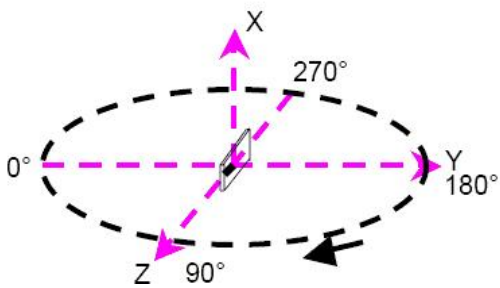
XY cut @5.675GHz



XZ cut @5.675GHz

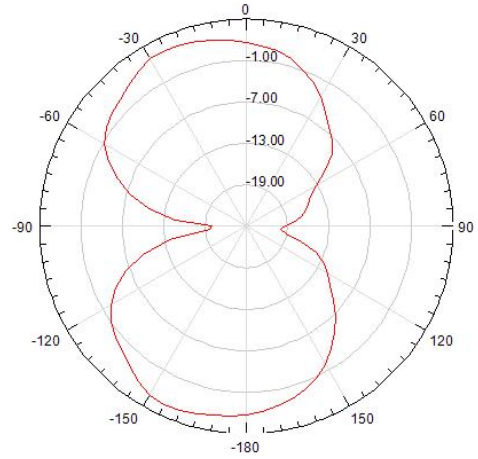
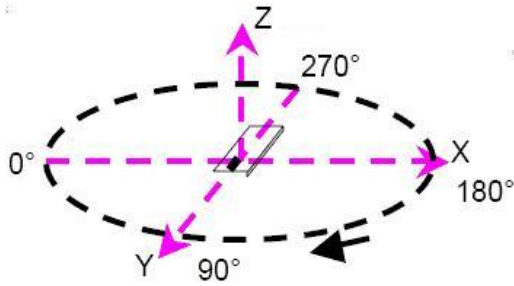


YZ cut @5.675GHz

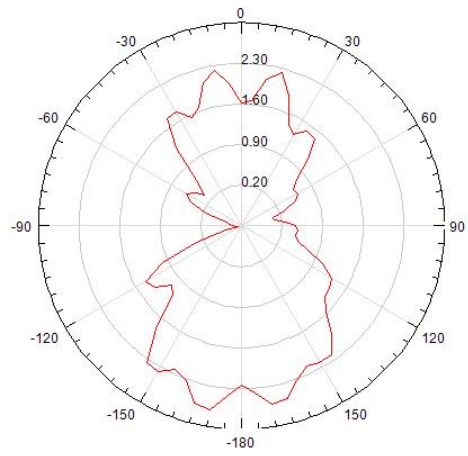
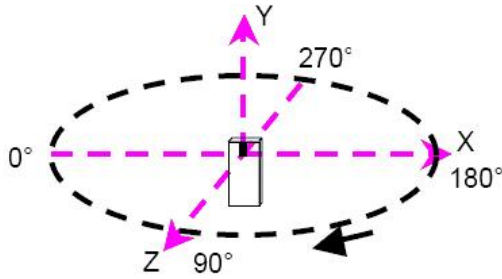


7.3、5.9GHz 点方向图

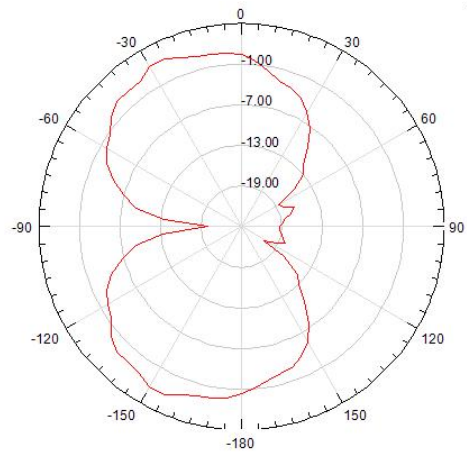
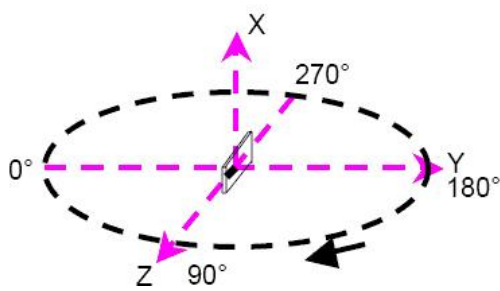
XY cut @5.9GHz



XZ cut @5.9GHz



YZ cut @5.9GHz



## 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	$\pm 25$ MHz
8.2	Band Width 通带宽度	$\pm 20$ MHz
8.3	Gain 增益	$\pm 0.2$ dBi
8.4	V.S.W.R (in BW) 驻波比	$\pm 0.5$

## 9 可靠性试验 Dependability Test

基准条件：温度范围	Temperature range	$25 \pm 5^\circ\text{C}$
相对湿度范围	Relative Humidity range	55~75%RH
工作温度	Operating Temperature range	$-40^\circ\text{C} \sim +85^\circ\text{C}$
贮藏温度	Storage Temperature range	$-40^\circ\text{C} \sim +85^\circ\text{C}$

### 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 8.1~8.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.6 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 8.1~8.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.6 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°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。

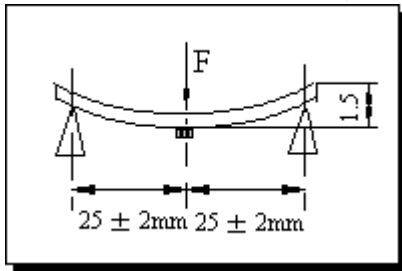
The device should be satisfied after preheating at 120°C~150°C for 120 seconds and dipping in soldering Sn at 255°C+10°C for 5±0.5 seconds, or electric iron 300°C-10°C for 3±0.5 seconds, without damage.

### 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  $1.6 \pm 0.2\text{mm}$  的 PCB 板中间，由箭头方向施力： $1\text{mm/S}$ ，弯曲距离： $1.5\text{mm}$ ，保持  $5 \pm 1\text{S}$ ，产品金属层无脱落。

Weld the product to the center part of the PCB with the thickness  $1.6 \pm 0.2\text{mm}$  as the illustration shows, and keep exerting force arrow-ward on it at speed of  $1\text{mm/S}$ , and hold for  $5 \pm 1\text{S}$  at the position of  $1.5\text{mm}$  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  $60 \pm 2^\circ\text{C}$  相对湿度  $90\sim 95\%$  的恒温湿箱中放置  $96$  小时，在常温中恢复  $1\sim 2$  小时后测试，符合表  $8.1\sim 8.6$  规定。

The device should satisfy the electrical characteristics specified in paragraph  $8.1\sim 8.6$  after exposed to the temperature  $60 \pm 2^\circ\text{C}$  and the relative humidity  $90\sim 95\%$  RH for  $96$  hours and  $1\sim 2$  hours recovery time under normal condition.

**9.7 高温特性 High Temperature Endurance**

在温度为  $85 \pm 5^\circ\text{C}$  的恒温箱中放置  $96 \pm 2$  小时，在常温中恢复  $1\sim 2$  小时后测试。符合表  $8.1\sim 8.6$  规定。

The device should satisfy the electrical characteristics specified in paragraph  $8.1\sim 8.6$  after exposed to temperature  $85 \pm 5^\circ\text{C}$  for  $96 \pm 2$  hours and  $1\sim 2$  hours recovery time under normal temperature.

**9.8 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  $96 \pm 2$  小时后恢复  $1\sim 2$  小时测试符合表  $8.1\sim 8.6$  规定。

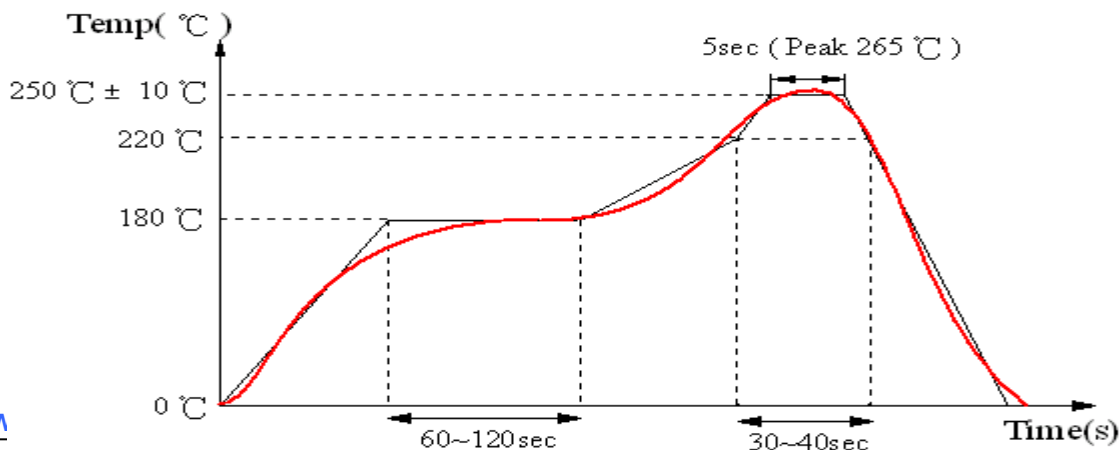
The device should also satisfy the electrical characteristics specified in paragraph  $8.1\sim 8.6$  after exposed to the temperature  $-40^\circ\text{C} \pm 5^\circ\text{C}$  for  $96 \pm 2$  hours and to  $2$  hours recovery time under normal temperature.

**9.9 温度循环 Temperature Cycle Test**

在  $-40^\circ\text{C}$  温度中保持  $30$  分钟，再在  $+85^\circ\text{C}$  温度中保持  $30$  分钟，共循环  $5$  次后在常温中恢复  $1\sim 2$  小时后测试符合表  $8.1\sim 8.6$  规定。

The device should also satisfy the electrical characteractics specified in paragraph  $8.1\sim 8.6$  after exposed to the low temperature  $-40^\circ\text{C}$  and high temperature  $+85^\circ\text{C}$  for  $30 \pm 2$  min each by  $5$  cycles and  $1$  to  $2$  hours recovery time under normal temperature.

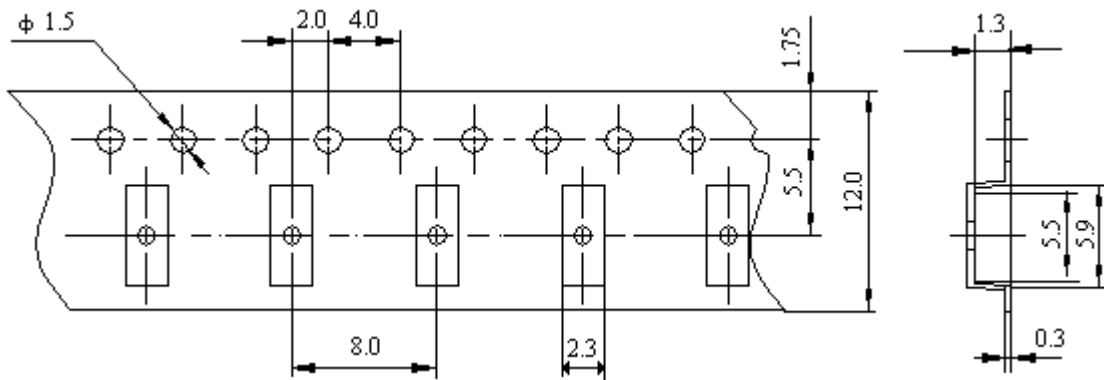
**10 回流焊温度 Reflow Soldering Standard Condition**





11 包装尺寸 (5220) Packaging and Dimensions

11.1 Plastic Tape

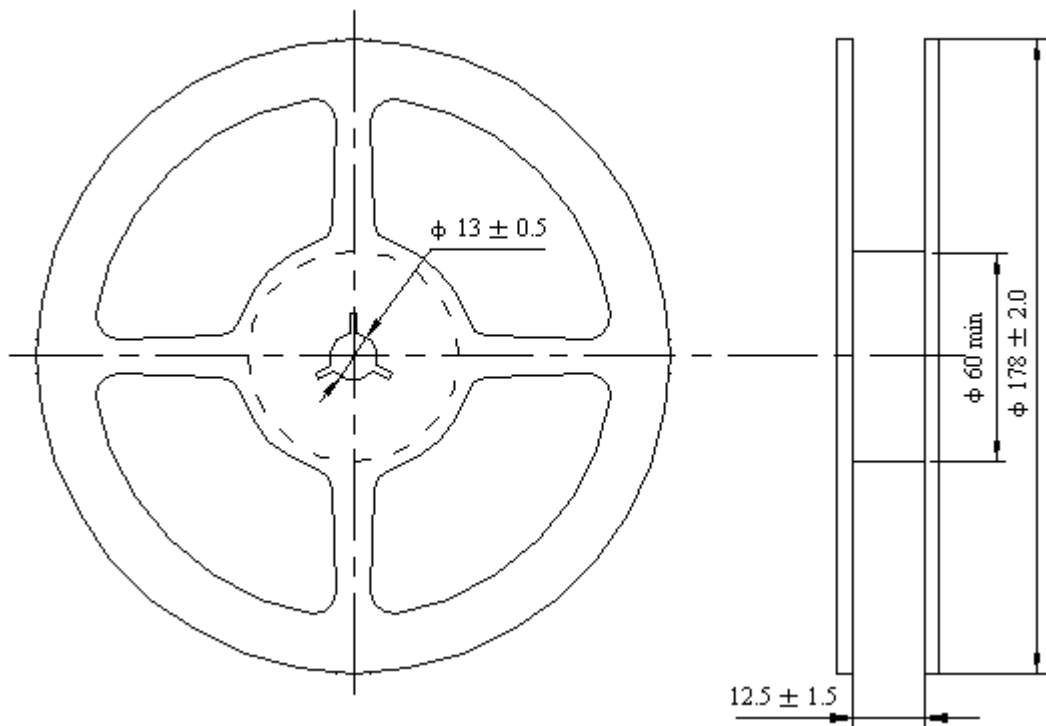


包装说明： Remarks for Package

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

真空包装 6 个月，拆封后 5 天内使用。

6 months in vacuum sealed bag and 5 days after opened.