

深圳市金航标电子有限公司

产品技术规格书 SPECIFICATION

| |
|----------------------------|
| 产品型号 PART NO: KH5220-A56 |
| 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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|-----------------|---------------------------------|-----------------|
| 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

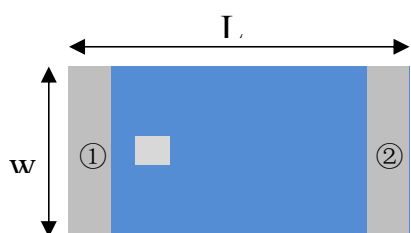
| 版本号 Version | 更改记录 Rejigger | 拟制 Prepared | 批准 Approve | 日期 Date |
|---|---------------|----------------|---------------|------------|
| V1.0 | 首次发行 | 姚富鑫 | 贺俊驹 | 2019.03.06 |
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| 备注： 1、更改产品电性能指标时，版本号需更换（V1.0 换为 V2.0、V3.0……）； 2、更改产品测试方法（包括可靠性测试条件），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

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。

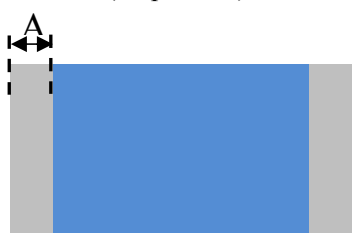
kinghelm Microwave Multi-Layer Ceramic Antenna LA series are designed to be used in WLAN、WiFi、Bluetooth、PHS、 Multiple-band Mobile phone antenna, FM, etc and compact size SMD chip design.

2. 外型尺寸 Dimensions (Unit: mm)



(Top View)

| Number | Terminal Name |
|--------|---------------|
| ① | INPUT |
| ② | NC |

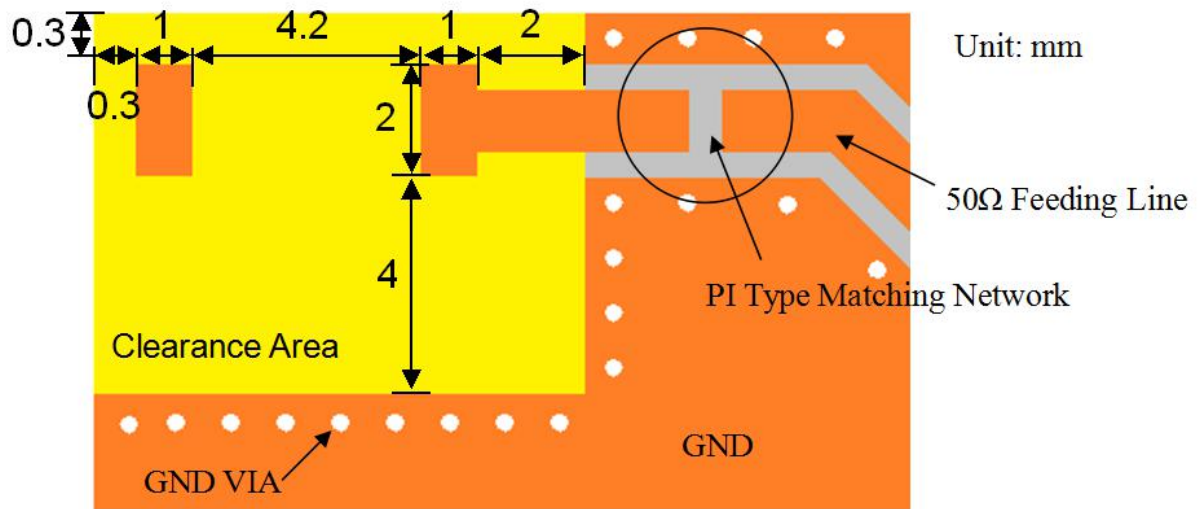


(Bottom View)

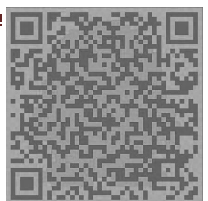
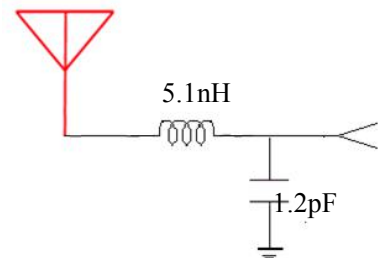
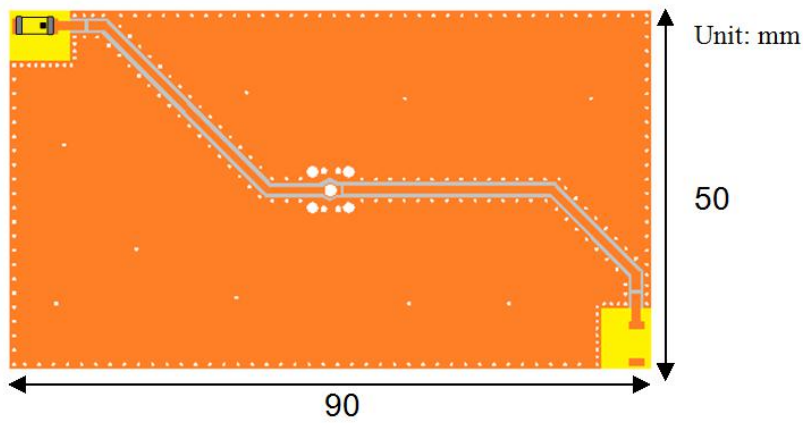


(Side View)

| Symbols | L | W | T | A |
|------------|-----------|-----------|-----------|-----------|
| Dimensions | 5.2+/-0.2 | 2.0+/-0.2 | 0.6+/-0.1 | 0.5+/-0.1 |



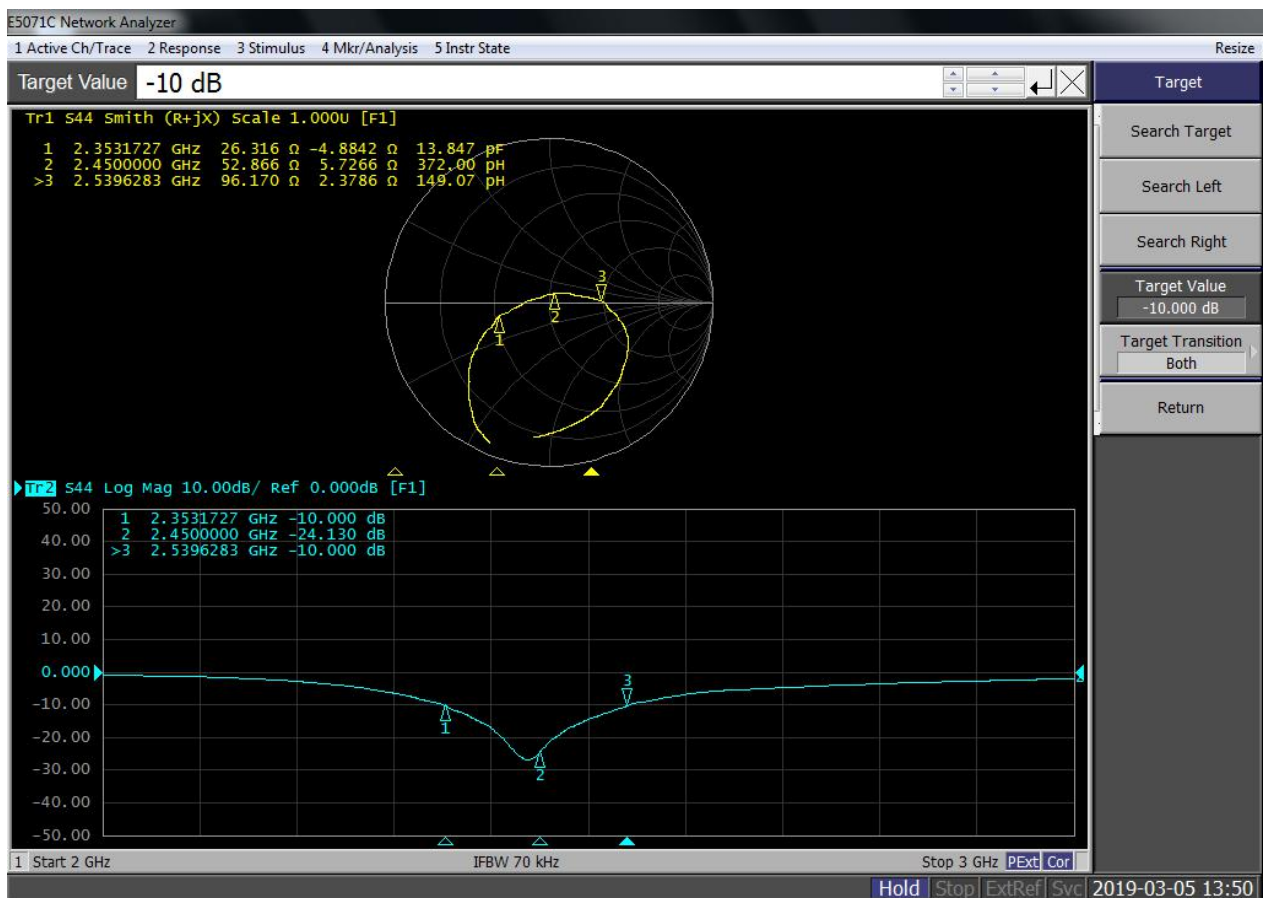
3. 测试电路和匹配电路 Evaluation Board and Matching Circuits



4. 电气性能 Electrical Characteristics

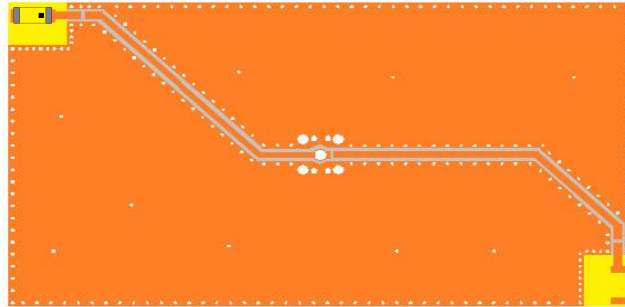
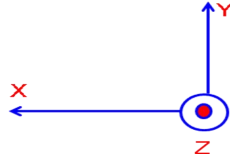
| No. | Item (项目) | Specifications (特性) |
|-----|-------------------------|---------------------|
| 4.1 | (带匹配电路测试)After Matching | 2450 MHz |
| 4.2 | Band Width 通带宽度 | 100MHz typ. |
| 4.3 | Peak Gain 峰值增益 | 4.91 dBi |
| 4.4 | V.S.W.R 驻波比 | ≤ 2.0 |
| 4.5 | Polarization 极化方式 | Linear 线性 |
| 4.6 | Azimuth Beam width 方位角 | Omni-directional 全向 |
| 4.7 | Impedance 阻抗 | 50 Ω |

5. 特性曲线 Characteristic curve

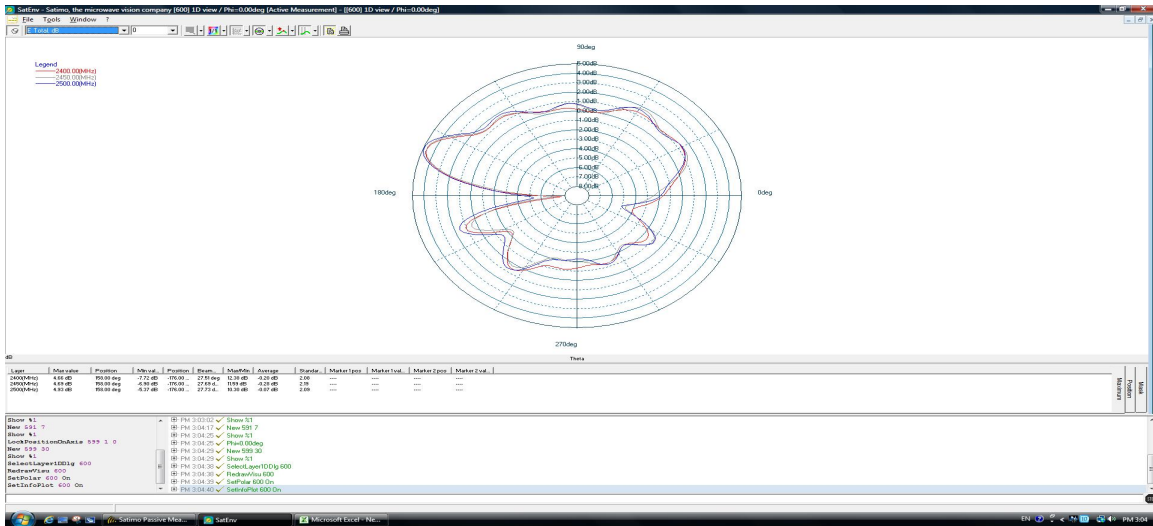


6. 方向图 Radiation Pattern

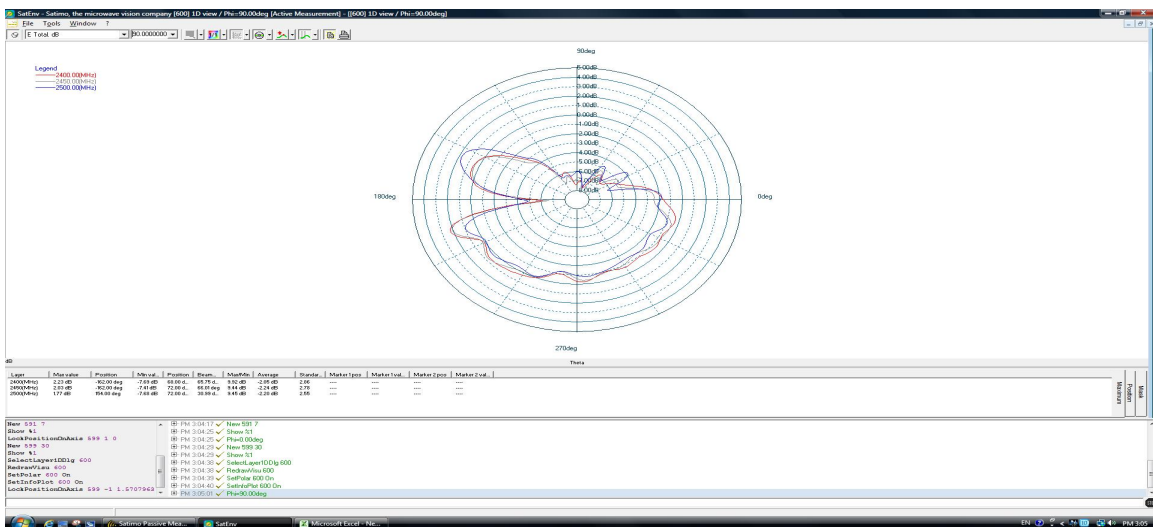
coordinates:



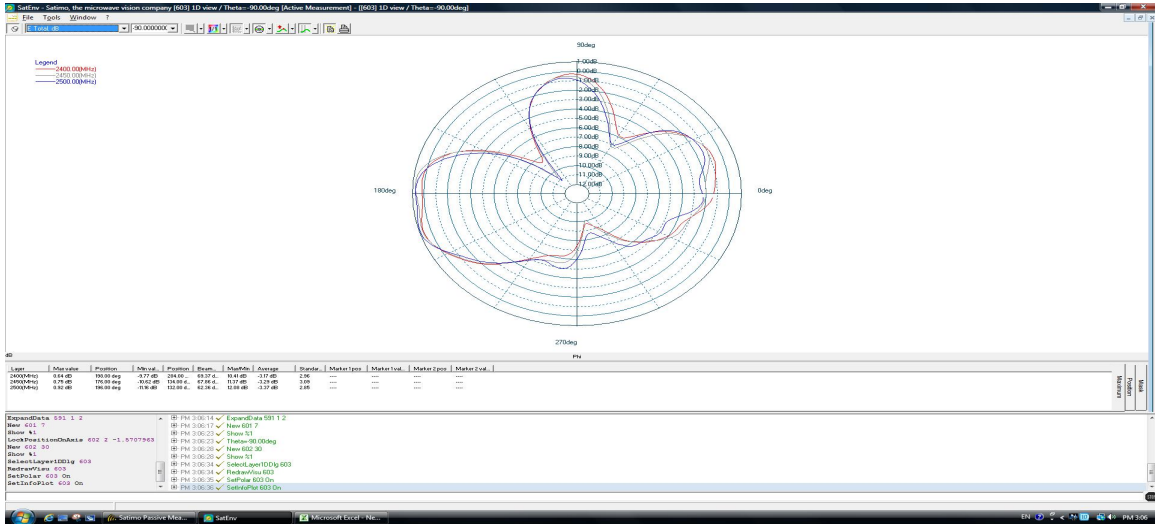
X-Z Plane



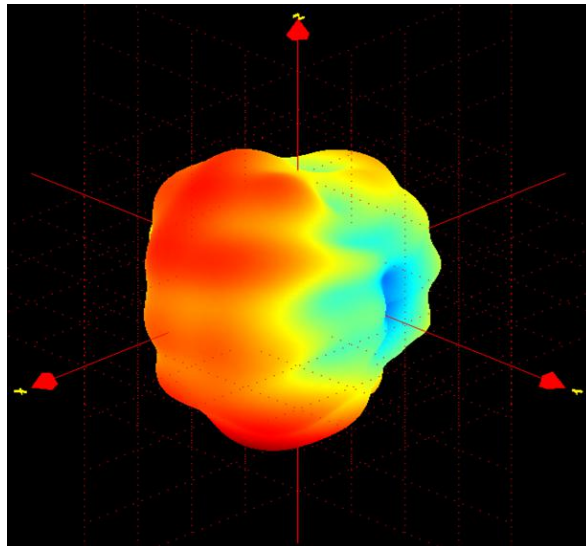
Y-Z Plane



X-Y Plane



3D Radiation Pattern



| | | | |
|--------------------|-------|-------|-------|
| Frequency (MHz) | 2400 | 2450 | 2500 |
| Avg. Gain (dBi) | -1.81 | -1.94 | -1.88 |
| Peak Gain (dBi) | 2.51 | 4.91 | 2.54 |
| Efficiency (%) | 71 | 72 | 72 |

7 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) |
|-----|------------------------|--|
| 7.1 | Central Frequency 中心频率 | ± 5 MHz |
| 7.2 | Band Width 通带宽度 | ± 5 MHz |
| 7.3 | Gain 增益 | ± 0.1 dBi |
| 7.4 | V.S.W.R (in BW) 驻波比 | ± 0.1 |

8. 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 $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

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。

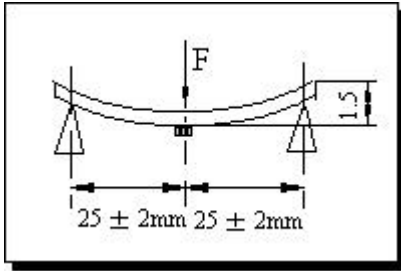
The device should be satisfied after preheating at 120°C ~150°C for 120 seconds and dipping in soldering Sn at 255°C +10°C for 5 ± 0.5 seconds, or electric iron 300°C -10°C for 3 ± 0.5 seconds, without damage.

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 $1.6 \pm 0.2\text{mm}$ 的 PCB 板中间，由箭头方向施力： 1mm/S ，弯曲距离： 1.5mm ，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 1mm/S , and hold for $5 \pm 1\text{S}$ 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 $90\sim 95\%$ 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 8.1~8.4 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 $90\sim 95\%$ RH for 96 hours and $1\sim 2$ hours recovery time under normal condition.

8.7 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 ± 2 小时，在常温中恢复 $1\sim 2$ 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 $85 \pm 5^\circ\text{C}$ for 96 ± 2 hours and $1\sim 2$ 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 $1\sim 2$ 小时测试符合表 8.1~8.4 规定。

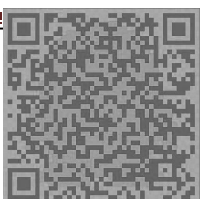
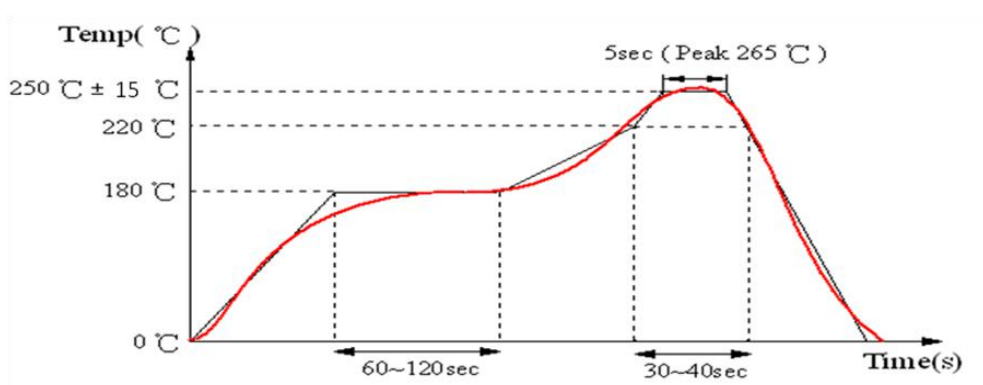
The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature $-40^\circ\text{C} \pm 5^\circ\text{C}$ for 96 ± 2 hours and to 2 hours recovery time under normal temperature.

8.9 温度循环 Temperature Cycle Test

在 -40°C 温度中保持 30 分钟，再在 $+85^\circ\text{C}$ 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 8.1~8.4 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 $+85^\circ\text{C}$ 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



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