

SPECIFICATION FOR APPROVAL

CUSTOMER :

CUSTOMER PART NO:

SUPPLIER: JIAXING GLEAD ELECTRONICS CO.,LTD.

SUPPLIER PART NO: GSM_PA1_900-1800A



DESCRIPTION:

REMARKS:

| | |
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| Customer Signature : | Customer Seal: |
|-----------------------------|-----------------------|

| | |
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| Supplier Signature: | Supplier Seal : |
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NOTE: Please return this copy as a certification of your approval !

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| VERSION | DATE | REVISION DESCRIPTION | PREPARED | CHECKED | APPROVED |
|---------|------------|-------------------------------|----------|---------|----------|
| V1.0 | 2013/11/12 | NEW ISSUED | | | |
| V1.1 | 2014/9/2 | Optimized Matching Circuit | | | |
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CUSTOMER APPROVED

| Quality Dept. | Production Dept | Technology Dept |
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| Name: | Name: | Name: |
| Tel: | Tel: | Tel: |
| E-mail: | E-mail: | E-mail: |

GLEAD APPROVED

| Quality Dept | Production Dept | Technology Dept |
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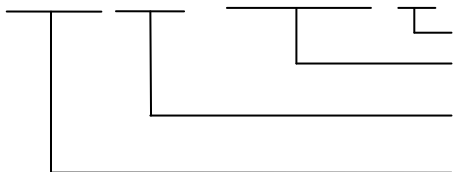
1. 概述 Introduction

本产品属于表面贴装 GSM 天线，具有低反射损耗、体积小等优点。它主要应用于个人移动通讯。

"GLEAD" microwave GSM antenna elements and its series have been to design to meet the applications in mobile phone for GSM . The surface-mount ceramic antenna has the advantage of a low profile and low return loss, etc.

2. 型号 Part Number

GSM_PA1_900-1800A



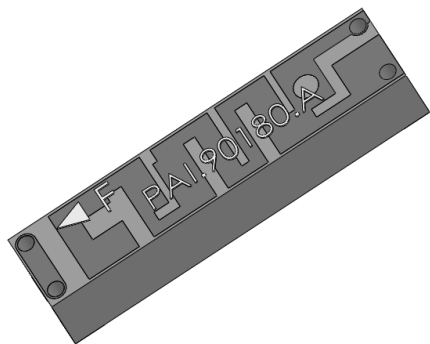
第一类产品 NO.1 Product

工作频率: Working Frequency 900MHz~1800MHz

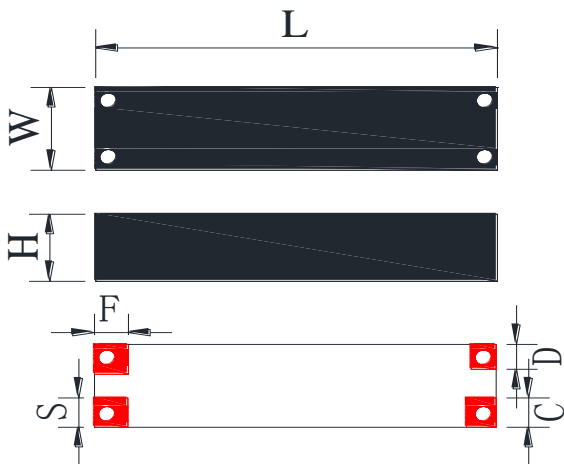
产品系列: FR-4&贴片 Product Series: FR4&SMD

GSM 天线: GSM Antenna

3. 外观及尺寸 Appearance and Dimensions (Unit: mm)



| | 尺寸 Dimension |
|---|--------------|
| L | 24.0±0.4 |
| W | 5.5±0.4 |
| H | 4.4±0.4 |
| S | 2.0±0.3 |
| F | 2.0±0.3 |
| C | 2.0±0.3 |
| D | 1.6±0.3 |



| | |
|---|-------------------------|
| F | 馈电点 Feeding Termination |
| S | 短路点 Short Termination |
| C | 焊接点 Solder Termination |
| D | 焊接点 Solder Termination |

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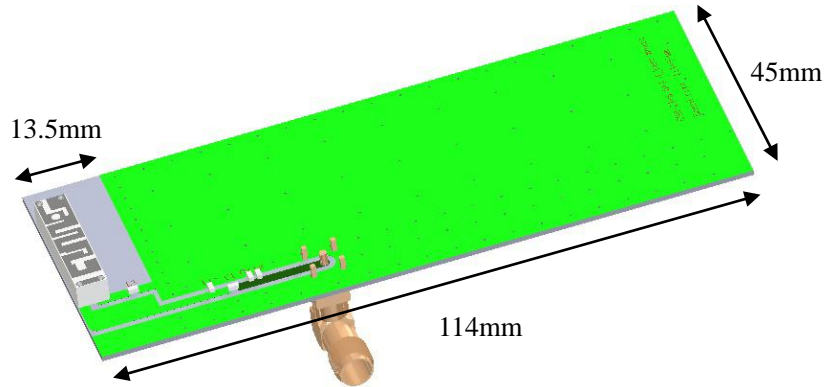
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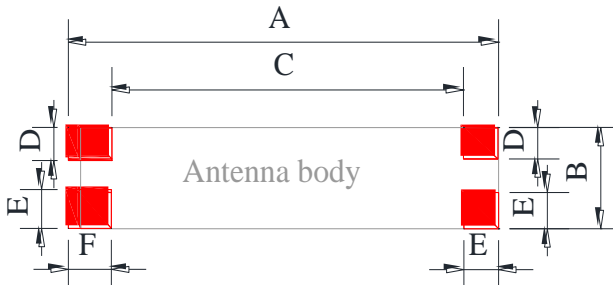
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4. 测试板及焊盘 Measurement

4.1. 测试板外观及尺寸 Outlook and dimension of test board

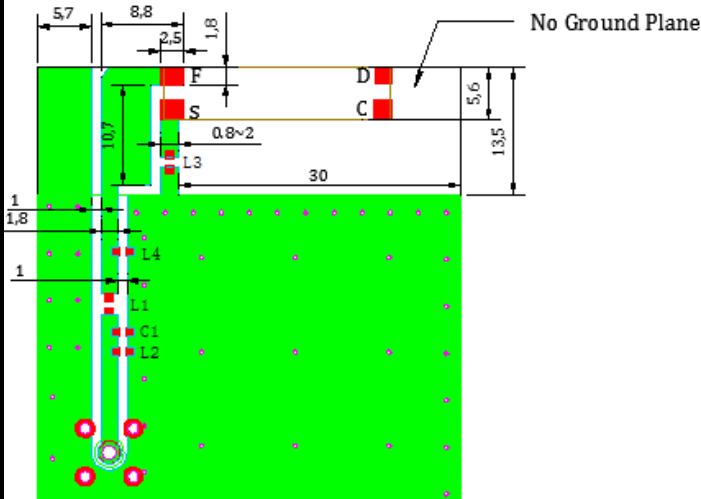


4.2. 焊盘区尺寸 Soldering area Size (Unit: mm)



| | 尺寸 Dimension |
|---|--------------|
| A | 24.8 |
| B | 5.5 |
| C | 20.2 |
| D | 1.7 |
| E | 2.1 |
| F | 2.5 |

4.3. 馈电区尺寸 Feed area Size (Unit: mm)



| | 匹配元件 Matching Circuit |
|-------------|-----------------------|
| L1 (Series) | 3.3nH |
| L2 (Shunt) | 15nH |
| L3 (Series) | 15nH |
| L4 (Shunt) | -- |
| C1 (Shunt) | 0.68pF |

FR-4 PCB thickness = 0.9 mm

The width of transmission line = 1.8mm
(depends on PCB thickness)

| | | | | | |
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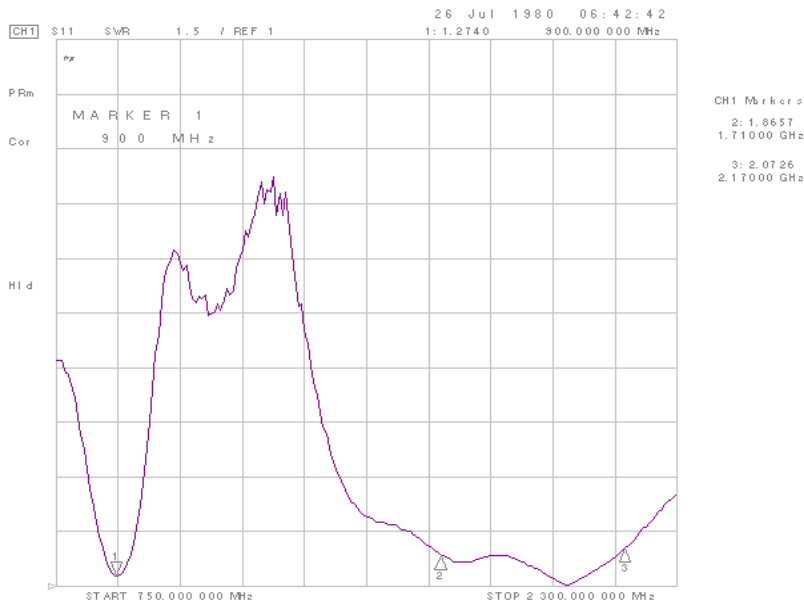
5. 电气性能 Electrical Characteristics

Table 4

| DESCRIPTION | VALUE |
|----------------------------|---|
| 工作频率 Working Frequency | 880-960MHz 1710-2170MHz |
| 带宽 Bandwidth* | 80 MHz@GSM900 450 MHz @UMTS |
| 驻波比 VSWR* | 3.5 max |
| 增益 Gain* | 1.5dBi max@ GSM 900 3.0dBi max@ UMTS |
| 偏振方式 Polarization | Linear |
| 特性阻抗 Impedance | 50Ω |
| 工作温度 Operating Temperature | -40°C~+85°C |
| 辐射方向 Azimuth Beam Pattern | 全向 Omni-directional |

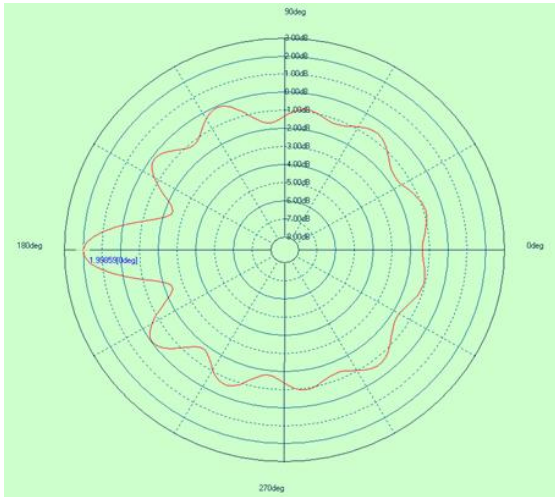
* Measured on the Glead test board of 114*45mm

6. 特性曲线 Characteristic curve

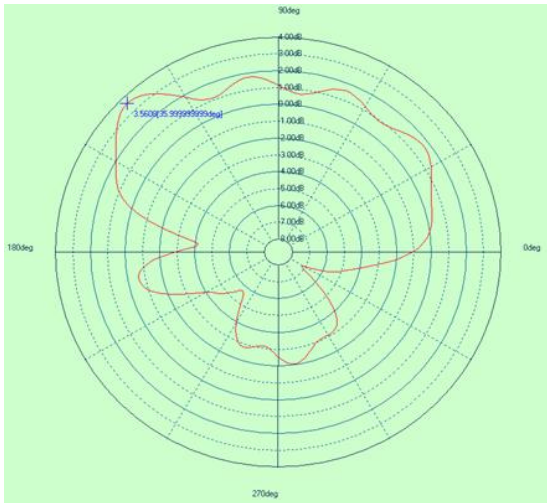


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7. 方向图 Radiation Patten



Frequency=900 MHz
Max gain = 1.78 dBi
MEG (mean effective gain)= -1.72dBi
Efficiency = 50.3%



Frequency= 1800 MHz
Max gain = 3.56 dBi
MEG (mean effective gain)= -1.32dBi
Efficiency = 60.1%

8. 包装 Package

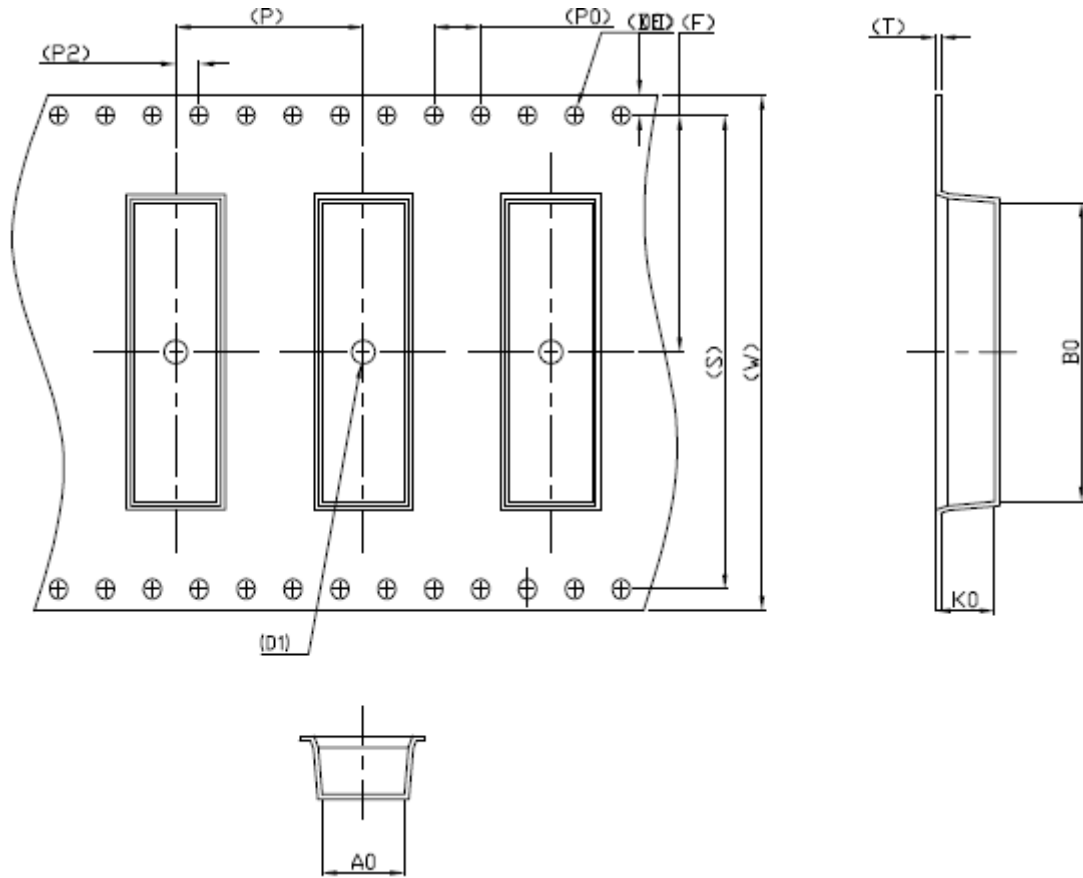
8.1. 数量 quantity

| 包装名称 Package Name | 包装数量 Quantity |
|-------------------|-----------------|
| 载盘 tape | (800)pcs/reel |
| 内装盒 Inner Box | (800)pcs/b |
| 外包装箱 Outer Box | (2400)pcs/box |

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8.2. 载带尺寸 tape dimension

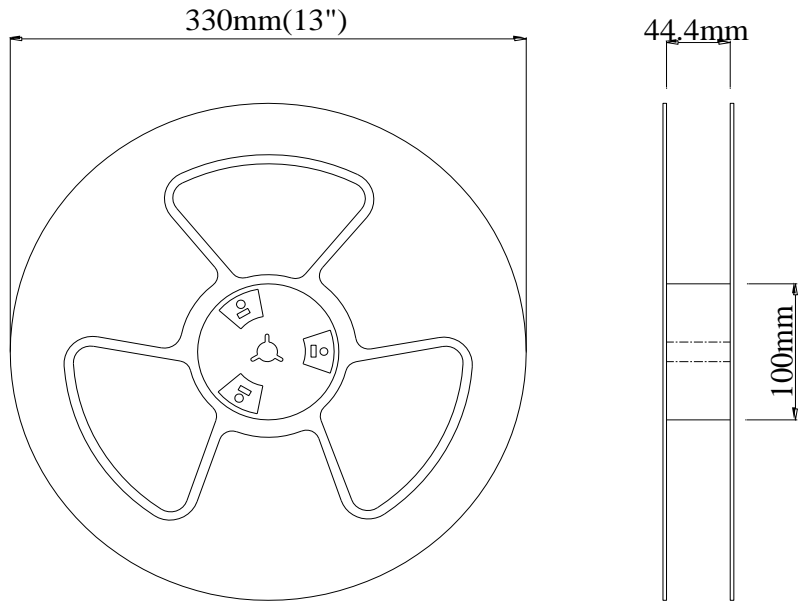


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|---|------------|----|-------------------------------------|----|-----------|----|--------------|
| W | 44.00±0.30 | P | 16.00±0.10 | A0 | 6.00±0.10 | B0 | 24.60±0.10 |
| S | 40.40±0.10 | P0 | 4.00±0.10 | A1 | | B1 | |
| E | 1.75±0.10 | P2 | 2.00±0.15 | A2 | | B2 | |
| F | 20.20±0.15 | D0 | ∅1.50 ^{+0.10} ₀ | K0 | 5.00±0.10 | | |
| T | 0.40±0.05 | D1 | ∅2.00 MIN | K1 | | | COLOR : PS/B |

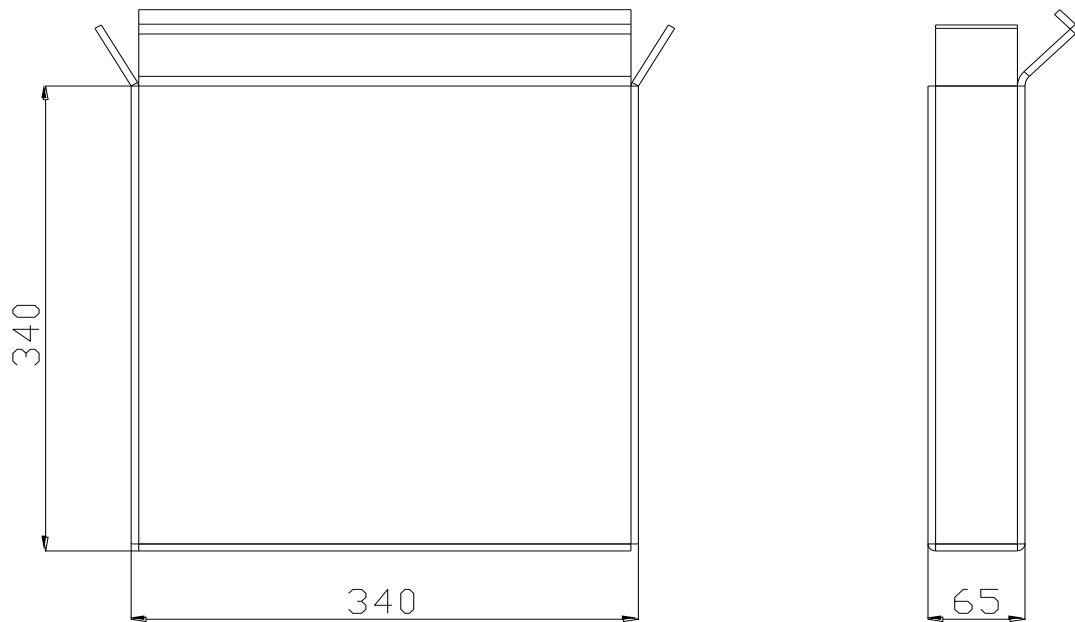
Note: all dimensions was in mm ;
Material : PS/Black;
Surface resistance : $10^{11} \Omega$ max .

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8.3. 载盘尺寸 reel dimension

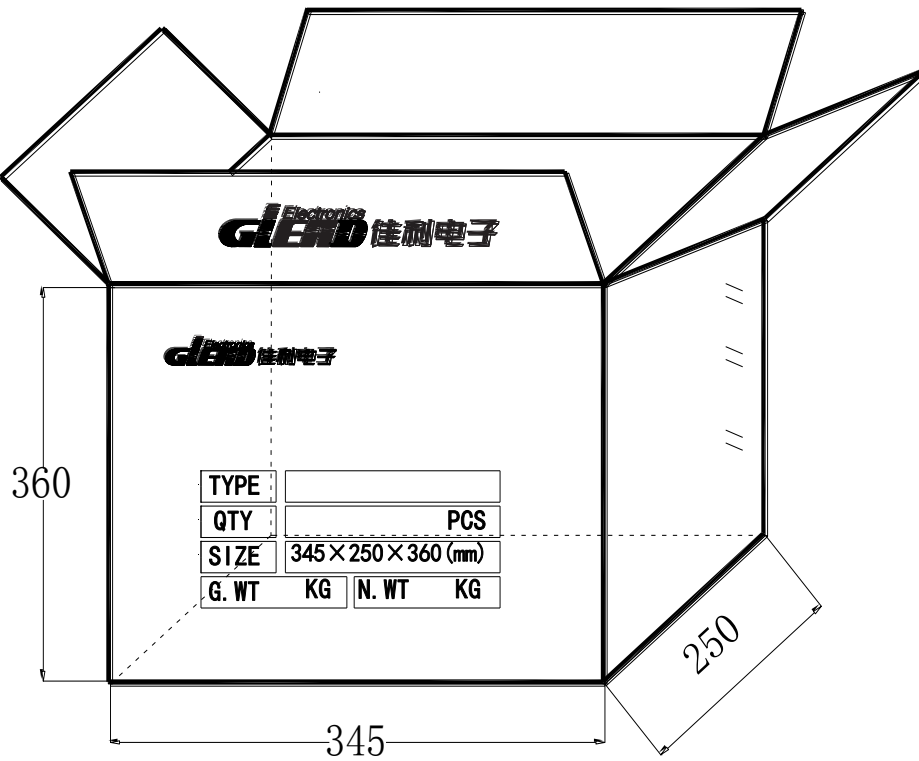


8.4. 内箱尺寸 Inner Box dimension

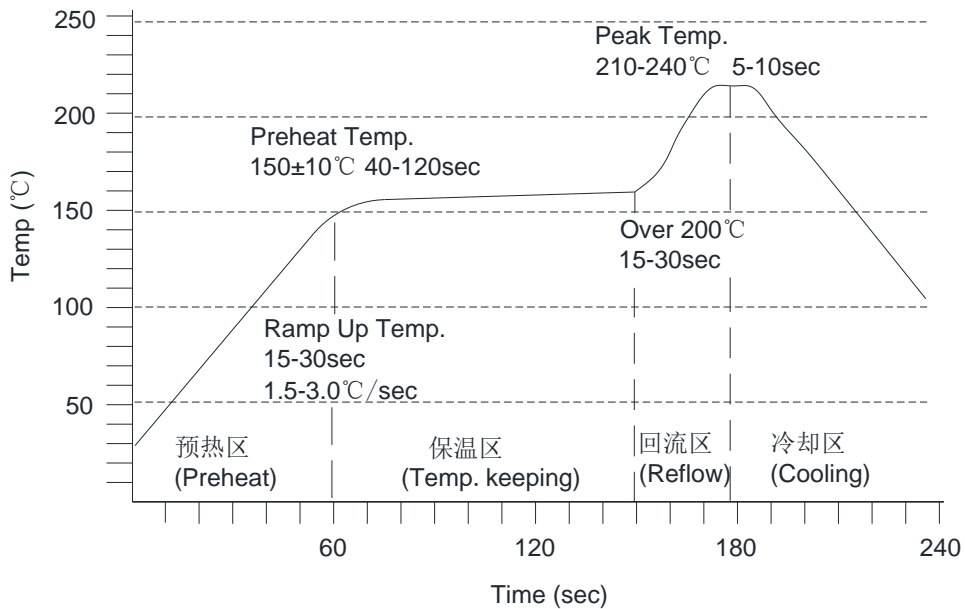


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| GSM_PA1_900-1800A | PAGE REV. P9 | | | | | |

8.5. 外箱尺寸 Outer Box dimension



9. 焊接温度 SMT Temp. Set



| | | | | |
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10. 环境试验 Environmental specifications

10.1 耐湿热特性 Moisture Proof

在温度为 $40 \pm 2^\circ\text{C}$ ，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 4 规定。

The device should satisfy the electrical characteristics specified in paragraph table 4 after exposed to the temperature $40 \pm 2^\circ\text{C}$ and the relative humidity 90~95% RH for 96 hours and 1~2 hours recovery time under normal condition.

10.2 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 4 规定。

The device should satisfy the electrical characteristics specified in paragraph table 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.

10.3 耐跌落冲击 Drop Shock

在 30cm 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 4 规定。
The device should satisfy the electrical characteristics specified in paragraph table 4 after dropping onto the hard wooden board from the height of 30cm for 3 times each facet of the 3 dimensions of the device.

10.4 高温特性 High Temperature Endurance

在温度为 $80 \pm 5^\circ\text{C}$ 的恒温箱中放置 24 ± 2 小时，在常温中恢复 1~2 小时后测试。符合表 4 规定。

The device should satisfy the electrical characteristics specified in paragraph table 4 after exposed to temperature $80 \pm 5^\circ\text{C}$ for 24 ± 2 hours and 1~2 hours recovery time under normal temperature.

10.5 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 24 ± 2 小时后恢复 1~2 小时测试符合表 4 规定。

The device should also satisfy the electrical characteristics specified in paragraph table 4 after exposed to the temperature $-40^\circ\text{C} \pm 5^\circ\text{C}$ for 24 ± 2 hours and to 2 hours recovery time under normal temperature.

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10.6 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 4 规定。

The device should also satisfy the electrical characteristics specified in paragraph table 4 after exposed to the low temperature -25℃ and high temperature +85℃ for 30±2 min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

11. 注意事项 Note

1. 本承认书保证我司产品作为一个单体时的质量情况。当我司产品被安装到贵公司产品上时，请保证贵司的产品已根据贵司的规范进行了有效评价和确认。

This product specification guarantees the quality of our product as a single unit. Please make sure that your product is evaluated and confirmed against your specifications when our product is mounted to your product.

2. 如果贵司对我司产品的使用已超过了本测试规范所界定的产品功能，那么对于由此引发的失效，我司将不予保证。 We cannot warrant against failure caused by any use of our product that deviates from the intended use as described in this product specification.

3. 对于正常使用过程中造成的失效，在出厂之日起三个月内给予免费维修；超过这个时限的维修我们将收取一定的材料成本和维修费用。 The product will get free warranty for three months since the date of purchase users operate in the correct way; users will have to pay cost of the materials and maintaining fee out of the condition.

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