

# 产 品 承 认 书

## Specification for Approval

**客 户** : \_\_\_\_\_  
**Customer** : \_\_\_\_\_  
**客户料号** : \_\_\_\_\_  
**Customer P/N** : \_\_\_\_\_  
**物料名称** : \_\_\_\_\_  
**Item Name** : \_\_\_\_\_  
**感通料号** : **GPSR-AP1050-3R3MS**  
**GanTong P/N** : \_\_\_\_\_  
**承认书编号** : **S19080701**  
**Spec No.** : \_\_\_\_\_  
**版本号** : **A**  
**Version No.** : \_\_\_\_\_

制 造 商 Manufacture	
拟 制 Prepared	黄荣英
审 核 Checked	蒋艳军
批 准 Approved	罗荣
日 期 Date	2019.08.07

客 户 承 认 Approved by Customer	
批 准 Approved	
日 期 Date	

**备 注:**  
Remark

- 在使用产品前，用户必须确认此产品是否适用于自身设计，感通仅保证产品符合此份承认书的规格。  
 Before use, customer should confirm whether this product is suitable for their design, JinLai only ensure products meet this specification.
- 本承认书的数据更改，必须经双方确认，任何一方单独修改无效。  
 This specification data change must be confirmed by both parties, any individual modification is invalid.
- 如客户未回签承认书即下订单，则视为承认此份承认书。  
 If customer placed orders without signing back this specification, it is regarded as recognition.

## 变更履历 Revision History

版本号 Revision	变更日期 Changed Date	申请者 Request By	变更内容 Change Content

1 料号定义

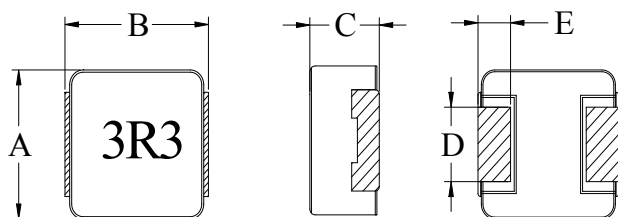
Part No. definition

GPSR   AP   1050   -   3R3   M   -   S  
①            ②                                  ③            ④                                  ⑤

- ① 产品代码 : 一体成型电感                                  ⑤ S : 喷码印字  
Product Code
- ② 产品尺寸 : 11.0×10.0×5.0mm  
Dimension
- ③ 电感值 : 例 1R0 = 1.0uH      100 = 10uH  
Inductance
- ④ 公差范围 : M = ±20%      N= ±30%  
Tolerance
- ※ 工作温度范围: -40°C ~ +155°C  
Operating temperature range : -40°C ~ +155°C (Including self-temperature rise)

2 外形尺寸(mm)

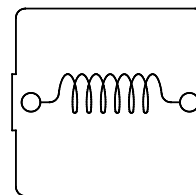
Appearance and dimensions



A	B	C	D	E
10.0±0.3	11.0±0.5	5.0Max	4.5±0.3	2.2±0.5

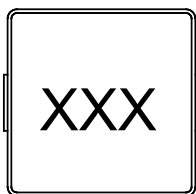
3 原理图

Schematic



4 印字标识

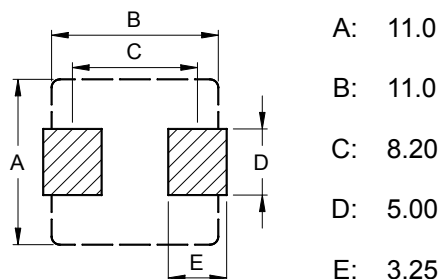
Marking



※ XXX : 感值

5 参考基板尺寸(mm)

Reference PCB pattern



- A: 11.0
- B: 11.0
- C: 8.20
- D: 5.00
- E: 3.25

6 电气特性

Electrical characteristics

料号 Part No.	电感值 Inductance ( $\mu$ H) ※1 $\pm 20\%$	直流电阻 DC Resistance ( $m\Omega$ )		温升电流 Heat Rating Current (A) ※2		饱和电流 Saturation Current (A) ※3	
		Typical	Max	Typical	Max	Typical	Max
GPSR-AP1050-3R3MS	3.3	8.5	12	11	10	19	17

※ 所有数据基于环境温度 25°C 条件下测试。

All data is tested on 25°C ambient temperature.

※1 电感值测试条件为 100kHz, 1.0V。

Inductance is tested at 100kHz, 1.0V.

※2 温升电流: 使产品温度上升到  $\Delta T40^\circ\text{C}$  时所加载的直流电流值( $T_a=25^\circ\text{C}$ )。

Heat rating current: The value of DC current when product temperature rise is  $\Delta T40^\circ\text{C}$  ( $T_a=25^\circ\text{C}$ ).

※3 饱和电流: 电感值下降到其初始值的 35% 时所加载的直流电流值。

Saturation current: The value of DC current when the inductance decreases 35% of its initial value.

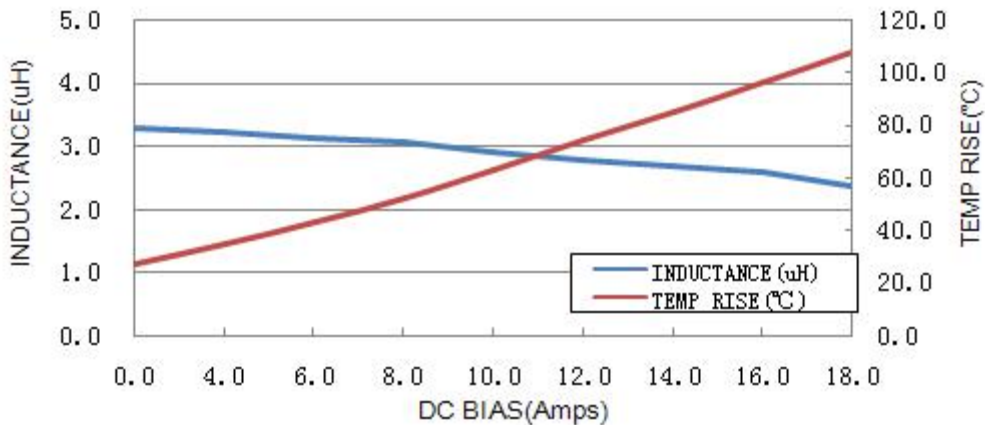
※4 特别提示: 线路设计, 组件布局, 使用频率, 散热系统等均会影响产品温度, 请务必验证产品实际发热状况。

Special remind: Circuit design, component placement, frequency, cooling system and etc.

all will affect the product temperature. Please verify the actual product temperature in the final application.

7 温升电流 VS 饱和电流曲线

Heat rating current VS saturation current curve



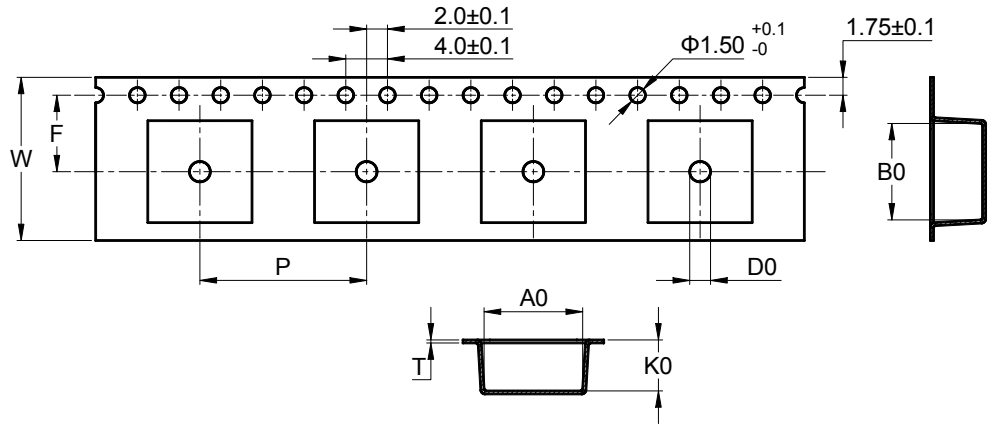
8 包装规格

Packaging specification

8.1 载带尺寸(mm)

Carrier tape dimensions

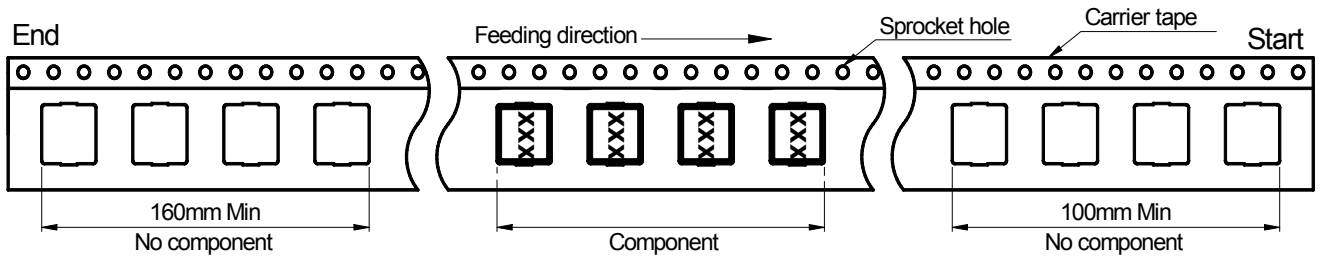
A0	10.35±0.1
B0	10.95±0.1
K0	5.3±0.1
W	24.0±0.3
P	16.0±0.1
F	11.5±0.1
T	0.35±0.05
D0	N/A



※ 包装参照国际标准 IEC 60286-3。  
Packaging is referred to the international standard IEC 60286-3.

8.2 包装方向

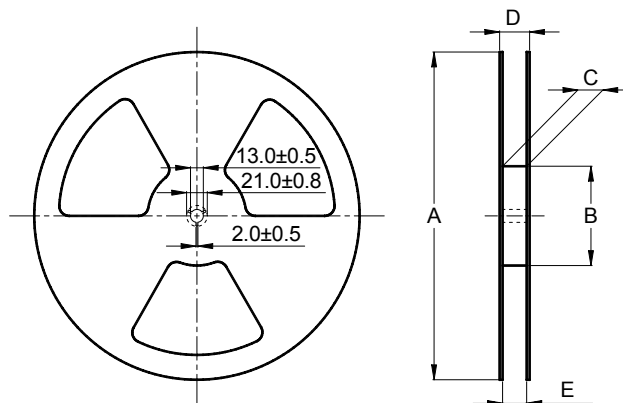
Packaging direction



8.3 卷盘尺寸(mm)

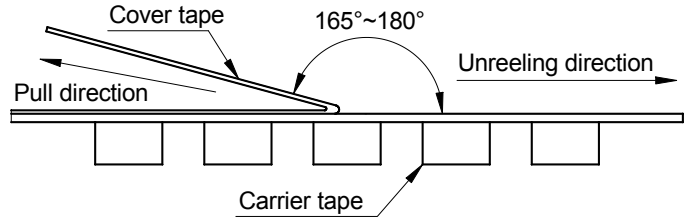
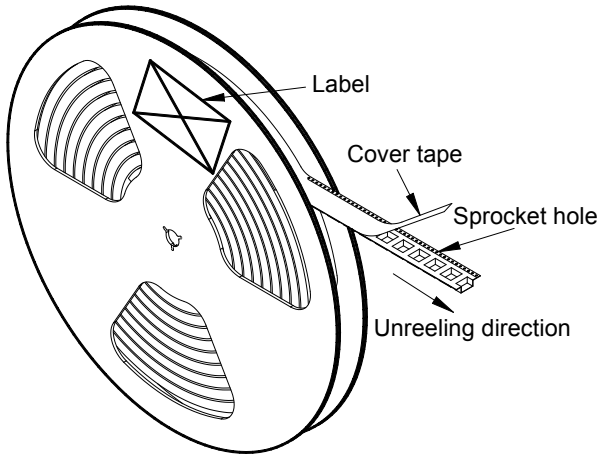
Reel dimensions

A	330 ± 2.0
B	100 Min
C	16.4 +2.0/-0
D	22.4 Max
E	23.9 Min



### 8.4 盖带剥离条件

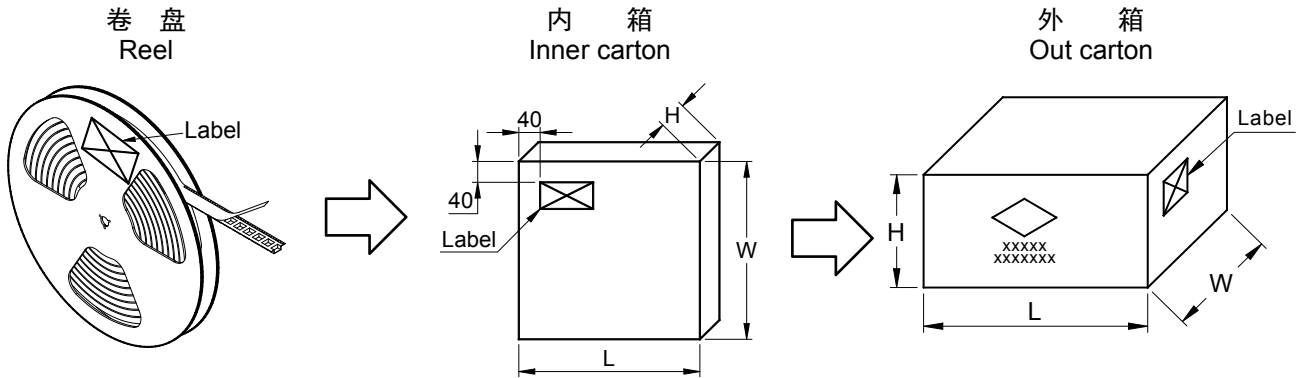
Cover tape peel-off condition



- ※ 盖带剥离力度为 0.2~1.3N。  
Cover tape peel-off force will be 0.2 to 1.3N.
- ※ 参考剥离速度 300±10mm/分钟。  
Reference peel-off speed 300±10mm/min.

### 8.5 包装箱尺寸和包装数量

Carton dimensions and packaging quantity



■ 内包装箱(L×W×H): 350×335×37mm  
Inner Carton

■ 外包装箱(L×W×H): 365×345×275mm  
Out Carton

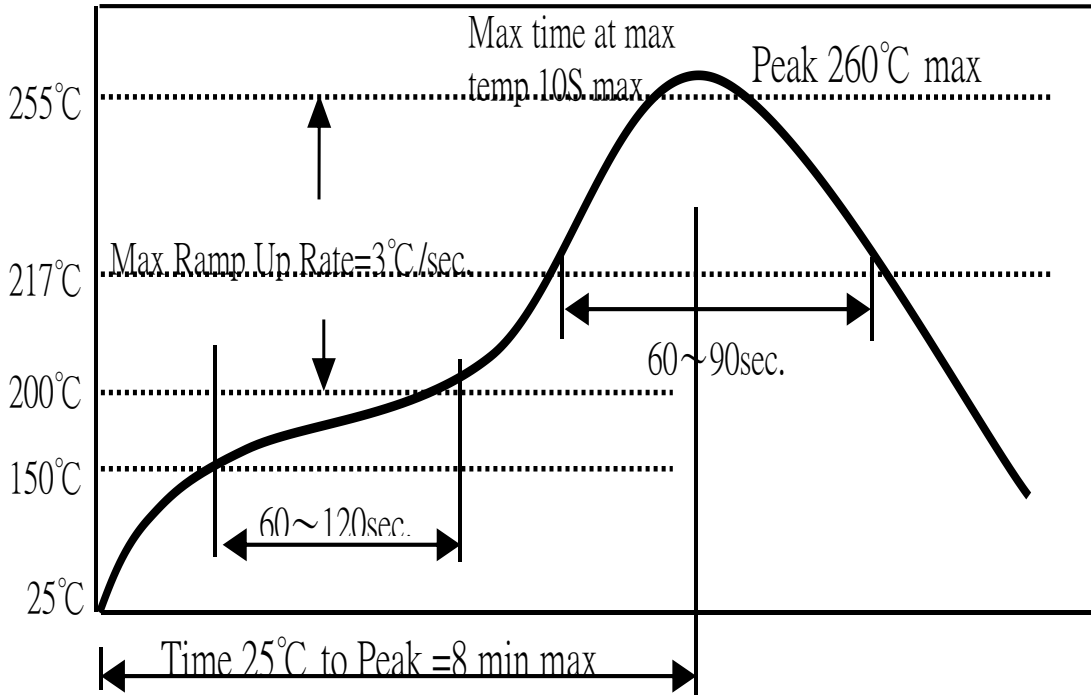
GPSR-AP1050	每盘 包装数量 Per Reel Quatity	内箱 包装数量 Inner Carton Quatity	外箱 包装数量 Out Carton Quatity
	800 pcs	(800×1) =1000 pcs	(800×6) = 4800pcs

9 回流焊焊接规范

Reflow soldering specification

9.1 SMT 回流焊温度曲线

Reflow profile for SMT components



9.2 封装体积与峰值温度(T<sub>P</sub>)关系分类

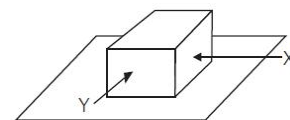
Classification of peak package body temperature (T<sub>P</sub>)

	封装厚度 Package Thickness	封装体积 Package Volume		
		<350 mm <sup>3</sup>	350~2000 mm <sup>3</sup>	>2000 mm <sup>3</sup>
无铅装配 PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6~2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

※回流焊参照标准 IPC/JEDEC J-STD-020D。  
Reflow is referred to standard IPC/JEDEC J-STD-020D.

## 10 可靠性试验

### Reliability test



#### 10.1 端子强度试验

##### Terminal Strength test

将样品焊接到基板上，在 X 和 Y 方向上各加 5.0N 的推力 10 秒钟，无电极剥离现象发生。

No electrode detachment should be found when the device is pushed in two directions of X and Y with the force of 5N for 10 second.

#### 10.2 可焊性试验

##### Solderability test

样品经过(160±10℃, 90 秒)预处理，再浸入到常温的助焊剂中 5 秒，

之后将样品电极浸没到锡炉(245±5℃, 3±1 秒)，拿出确认电极面上锡状态：电极面被新锡覆盖超过 90%。

After preheat(160±10℃, 90 sec), then the specimen shall be immersed in flux at room temperature, later be immersed in solder pot (245±5℃, 3±1sec), take out and confirm the soldering state.

Electrode has been covered by new solder more than 90%.

#### 10.3 冲击试验

##### Shock test

根据橡胶式落下冲击试验机，在互相垂直的 3 个不同方向，冲击加速度为 981m/s<sup>2</sup> (100G)，

落下后，对比电感值的变化率在初始值的±15%以内。

Inductance deviation within ±15% of initial value, after being dropped once with 981m/s<sup>2</sup> (100G) attitude upon a rubber block method shock testing machine, in three different orientations.

#### 10.4 耐湿试验

##### Humidity test

在温度 85±3℃和湿度 80~85%环境中保存 96±4 小时后，拿出来用干布擦去水滴，

在常温常湿下放置 1 小时后，对比电感值的变化率在初始值的±15%以内。

Inductance deviation within ±15% of initial value, after 96±4 hours in 80~85% relative humidity at 85±3℃ and 1 hour drying under normal condition.

#### 10.5 低温保存试验

##### Low temperature storage test

在温度-40±3℃环境中保存 96±4 小时后，在室温下放置 1-2 小时对比电感值的变化率在初始值的±15%以内。

The specimen shall be stored in a chamber of temperature -40±3℃ for 96±4 hours,

and then it shall be subjected to standard atmosphere conditions for 1-2 hours.

The inductance deviation within ±15% of initial value.

#### 10.6 高温保存试验

##### High temperature storage test

在温度 155±3℃环境中保存 96±4 小时后，放置室温下 1-2 小时，对比电感值的变化率在初始值的±15%以内。

The specimen shall be stored in a chamber of temperature 155±3℃ for 96±4 hours,

and then it shall be subjected to standard atmosphere conditions for 1-2 hours.

The inductance deviation within ±15% of initial value.

#### 10.7 冷热冲击试验

##### Temperature cycle test

在-40±3℃环境中放置 30 分钟，之后在转移到 125±3℃环境中放置 30 分钟(转移时间不超过 2 分钟)，

这为一个循环，在循环 100 次以后，对比电感值的变化率在初始值的±15%以内。

Being subjected to -40±3℃ for 30 minutes, then to 125±3℃ for 30 minutes (Transition time with 2 minutes).

This constitutes one cycle. The inductance deviation within ±15% of initial value.

## 11 注意事项



**Notes**

- 11.1 产品最佳安装保质期限：6个月(从制造日期开始计算)  
保存条件：密封包装，温度 $\leq 40^{\circ}\text{C}$ ，相对湿度 $\leq 70\%$ 。  
The best assembly quality guarantee period of product : 6 months (From manufacture date),  
Storage condition : seal in packaging, temperature $\leq 40^{\circ}\text{C}$ , RH $\leq 70\%$ .
- 11.2 如果取出使用，剩余产品请用胶袋密封，按照以上条件保存，避免电极氧化，影响焊接状态。  
If taking out for use, the remaining products should be sealed in plastic bags and preserved  
in accordance with the above conditions, to avoid oxidation of electrodes and affect soldering status.
- 11.3 请不要将产品保存于高温、高湿、有尘埃、腐蚀性气体的不适合环境中。  
Do not keep products in unsuitable storage conditions,  
such as areas susceptible to high temperature, high humidity, dust or corrosion.
- 11.4 请小心轻放，避免由于产品跌落或取出不当导致产品损坏。  
Always handle products with care to avoid damage.
- 11.5 手上的油脂会导致产品的可焊性降低，请避免直接用手接触产品的端子，以保证最佳的可焊性。  
Do not touch electrodes with bare hands directly, as oil secretions may inhibit soldering.  
Always ensure optimum conditions for soldering.
- 11.6 当本产品应用到相似或新的项目时，电性可能因使用条件的不同而与规格产生一定的出入。  
When product will be used on a similar or new project to the original one,  
sometimes it might be unable to satisfy the specification due to different condition of usage.
- 11.7 本产品无任何自我保护功能，请勿在过载、高温、高压等不正常条件下使用。  
This product itself does not have any protective function in abnormal conditions,  
such as overload, high temperature, high voltage and etc.
- 11.8 超规格的高电压绝缘测试会对本产品绝缘金属粉体造成损伤，从而缩短产品的使用寿命。  
Hi-Pot test with higher voltage than spec value will damage insulation material and shorten its life.
- 11.9 如果将本产品用于埋置复合组件，有可能会对本产品表面造成腐蚀，请咨询本公司。  
If using in potting compound, the product might be damaged, please consult with us.
- 11.10 请不要清洗本产品，如果需要清洗，请咨询本公司。  
Please do not clean this product. If necessary, please consult with us.

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