

## SPECIFICATION FOR APPROVAL

## 承 认 书

## Features 特征：

- ❖ Outline 外观尺寸：3.2mm×2.7mm×1.1mm
- ❖ Wide receiving angle.
- ❖ Linear response vs. irradiance.
- ❖ Fast switching time.
- ❖ lens color: Water clear
- ❖ The product itself will remain within RoHS compliant version
- ❖ MSL Level 符合湿敏度等级：Level 3

- ❖ This is a preliminary product design appearance, for reference only, subject to the real object. 这是一份初步产品设计外观仅供参考，以实物为准。
- ❖ Please pay attention to the moisture absorbed, and refer to the operating instructions for the details. 请注意吸湿剂使用，详情参考使用说明书。

|                              |                          |                               |
|------------------------------|--------------------------|-------------------------------|
| Part No.<br>产品品号             | H3227AP18F0C01           |                               |
| Sample No.<br>样品编号           |                          |                               |
| Customer Name/No.<br>客户名称/品号 |                          |                               |
| Check By<br>客户确认             | Authorized By<br>客户核准并签章 | Application Range<br>客户产品要求范围 |
|                              |                          |                               |

- ❖ Please return a document after admitted. After the order, it is regarded as the default if the customer has not signed back and not any feedback within 1 month.

承认盖章后请回传承认书一份。自客户下单1个月以内未签回且无任何反馈，视为默认承认。

Approved By :  
批准



Checked By :  
复核

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## Specification version update resume

### 产品变更记录

[illegible]



## ◆Product Code Method 产品命名代码

H-3227-A-P18F-0-C-01

1 2 3 4 5 6 7

|                                          |                               |                       |                      |
|------------------------------------------|-------------------------------|-----------------------|----------------------|
| 1、The Company Initials<br>Hongbright 首字母 | 2、Lead Frame<br>结构代码          | 3、Light Code<br>发光面   | 4、Chip Grade<br>晶片特性 |
| H : Hongbright                           | 3227 ( L×W ) :<br>3.2mm×2.7mm | A : Top light<br>顶部发光 | P18F : PT<br>接收      |

|                                                               |                           |                             |
|---------------------------------------------------------------|---------------------------|-----------------------------|
| 5、Lap Polarity<br>产品极性                                        | 6、Zener Code<br>齐纳代码      | 7、Material Flow Code<br>流水码 |
| 0 : Non-common cathode and non-common<br>anode<br>非公共阴极和非公共阳极 | C : Without Zener<br>不加齐纳 | Material Flow Code<br>流水码   |

## ◆Absolute Maximum Rating 绝对最大额定值 (Ta=25°C)

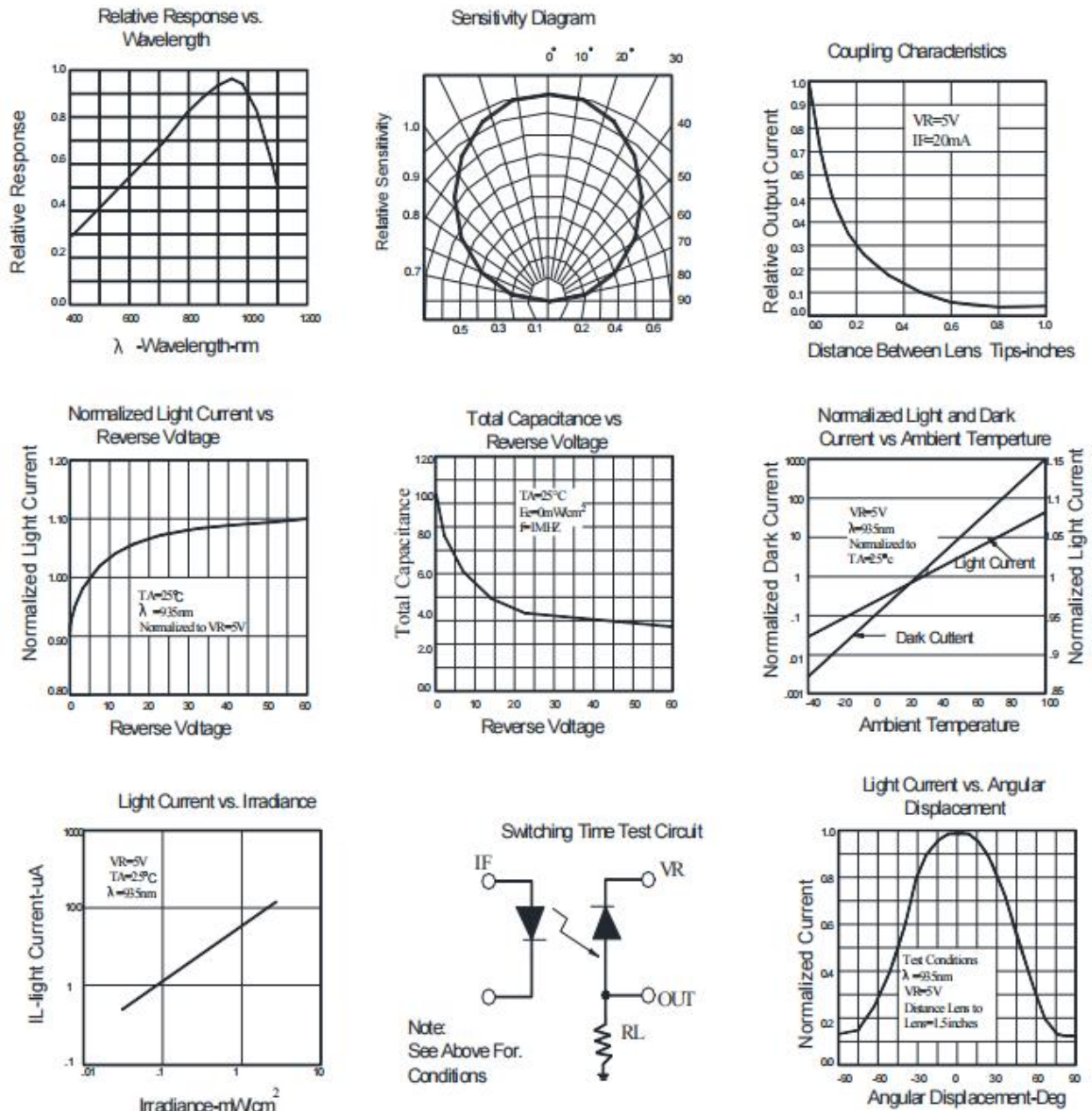
| Characteristics<br>特性            | Symbol<br>符号 | Rating<br>额定值 | Unit<br>单位 |
|----------------------------------|--------------|---------------|------------|
| Power Dissipation 功耗             | Pd           | 100           | mw         |
| Reverse Breakdown Voltage 反向击穿电压 | VR           | 60            | V          |
| Operating temperature 工作温度       | Topr         | -40~ +85      | °C         |
| Storage temperature 储存温度         | Tstg         | -45~ +100     | °C         |
| Soldering temperature 焊接温度       | Tsd          | 260           | °C         |

## ◆Typical Product Characteristics 产品特性 (Ta=25°C)

| Parameter<br>参数                  | Symbol<br>符号     | Min.<br>最小 | Typ.<br>典型 | Max.<br>最大 | Unit<br>单位 | Remarks<br>备注                              |
|----------------------------------|------------------|------------|------------|------------|------------|--------------------------------------------|
| Rang Of Spectral Bandwidth 光谱带宽  | $\lambda_{0.1}$  | 400        |            | 1100       | nm         | -                                          |
| Wavelength Of Peak Sensitiv 峰值波长 | $\lambda_P$      | -          | 940        | -          | -          | -                                          |
| Reverse light Current 逆光电流       | IL               | -          | 6.8        | -          | $\mu A$    | VR=5V.<br>Ee=1mW/cm2                       |
| Reverse Dark Current 反向暗电流       | ID               | -          | -          | 100        | nA         | VR=10V. Ee=0<br>mW/cm2                     |
| Reverse break down Voltage 反向低电压 | V(BR)            | 35         | -          | -          |            | IR=100 $\mu A$                             |
| Forward Voltage 正向电压             | VF               | -          | -          | 1.3        | V          | IF=1mA                                     |
| Total Capacitance 总电容            | CT               | -          | 9          | -          | PF         | VR=5V .EE=0,<br>f=1.0MHZ                   |
| Rise Time/Fall Time 上升时间/下降时间    | tr/tf            | -          | 50         | -          | ns         | VR=20V. $\lambda$<br>=940nm.RL=50 $\Omega$ |
| Angle of half sensitivity 角度     | 2 $\theta_{1/2}$ | -          | 135        | -          | deg        | -                                          |



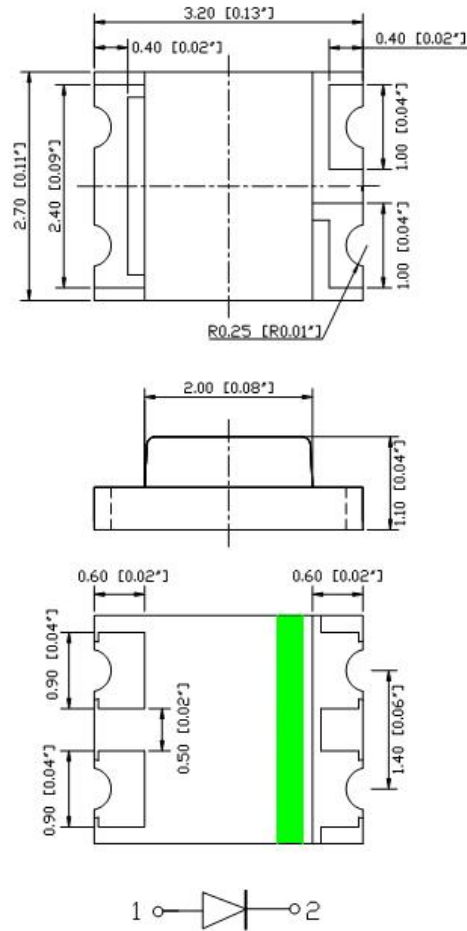
## ◆ Typical Optical-Electrical Characteristic Curves 典型的光电特性曲线

◆ Collector Current Bin Limits 集电极电流箱限制 (VR=5V, EA=1mW/cm<sup>2</sup>)

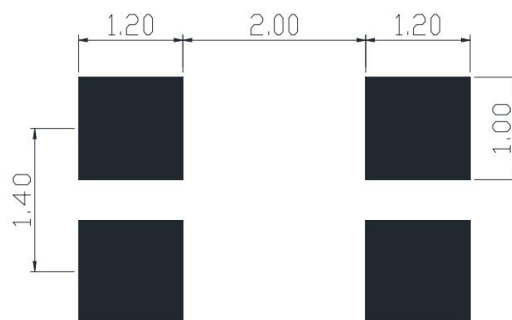
| BIN CODE | Min.( uA) | Max.(uA) |
|----------|-----------|----------|
| 3        | 5.2       | 6.0      |
| 4        | 6.0       | 7.0      |
| 5        | 7.0       | 8.0      |



## ◆Dimensions 尺寸



## RECOMMEND PADLAYOUT推荐焊盘布局



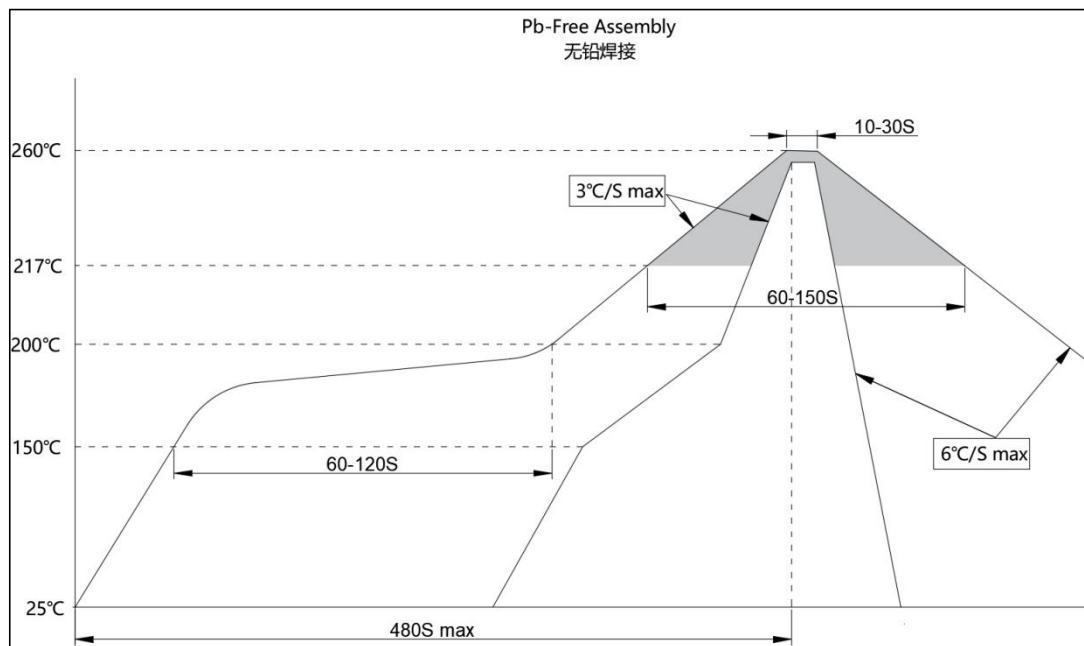
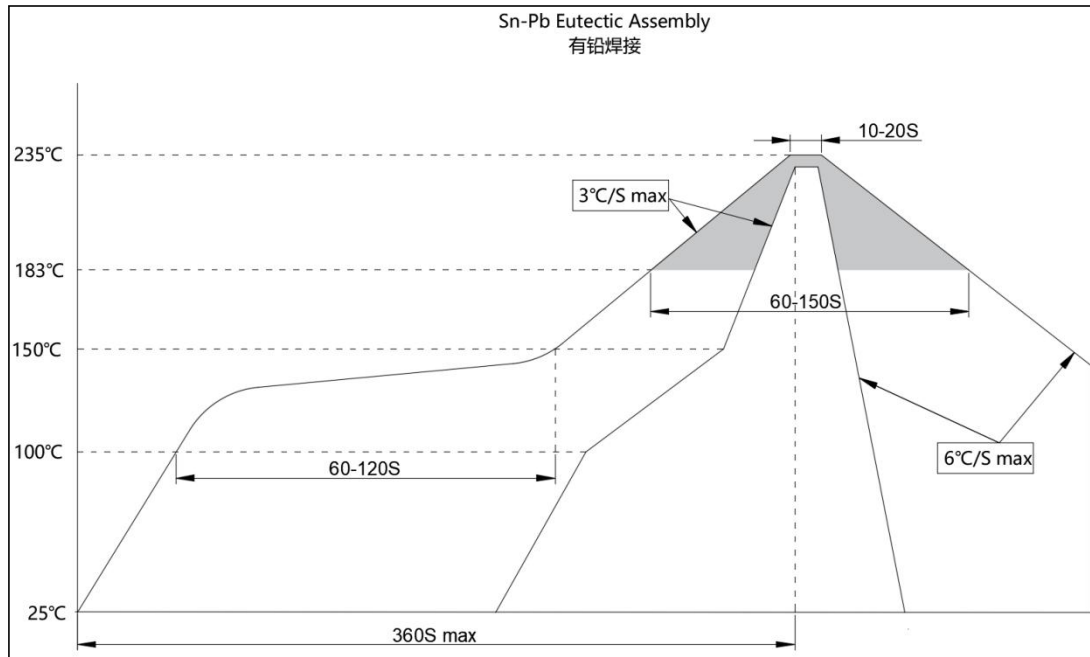
## Note (注释):

- ❖ 1.The appearance of encapsulation tolerance is  $\pm 0.1$  mm.

外观封装公差为 $\pm 0.1$  mm。



## ◆ Reflow Profile 回流温度曲线



## Note ( 注释 ) :

❖1. Reflow soldering is recommended not to be done more than two times , no more than 3 times. The interval should be controlled within 12 hours between the 1<sup>st</sup> and 2<sup>nd</sup> reflow process.

推荐不要进行超过2次回流焊, 最多不超过3次。两次回流焊焊接的时间间隔应控制在12小时以内。

❖2. Repairs should not be done after the LEDs have been soldered. When repair is unavoidable, suitable tools must be used.

不应该在发光二极管焊接后进行修理。如果修理的情况不可避免, 必须使用适当的工具进行修理。

❖3. When soldering, do not put stress on the LEDs during heating.

当焊接时, 不要在发光二极管加热的过程中挤压。

❖4. After soldered, do not warp the circuit board.

焊接之后, 不要弯曲电路板。



## ◆ Handling Precautions 操作注意事项

## • Handling precautions 处理的预防措施

## 1. Over-current-proof 过电流保护

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

消费者必须使用电阻器进行保护，否则电压稍有偏移，电流的变化会很大（烧坏的情况将会发生）。

## 2. Storage 储存

## 2.1 It is recommended to store the products in the following conditions:

建议在以下条件下储存产品：

## a. Humidity: 60% R.H. Max.

最大湿度 60%

## b. Temperature: 5°C~30°C(41°F~86°F)

温度控制在 5°C~30°C(41°F~86°F)

## 2.2 Shelf life in sealed bag: 12month at 5°C~30°C and ≤60% R.H. .

密封袋保质期：温度 5°C~30°C和湿度≤60%下可保持 12 个月。

## 2.3 The products more than 6 months are recommended to be baked before used. The Conditions of baking as follows:

当产品储存时间超过 6 个月以上，建议再次进行烘烤后再使用，烘烤条件如下：

## a. 70±3°C x(24hrs) and &lt; 5%RH, taped reel type

卷盘类型：70±3°C x(24 小时) 和 < 5%湿度

## b. 150±3°Cx(3hrs), bulk type

散装类型：150±3°Cx ( 3 小时 )

## 2.4 It is recommended that the unfinished products should be stored in sealed antistatic bags after baked.

建议将未加工的产品进行烘烤后放入防静电袋中密封存储。

## 3. Use environment 使用环境

Please refer to the IPC/JEDEC J-STD-033 rules of moisture sensitivity levels.

请参考 IPC/JEDEC J-STD-033 湿敏等级规范

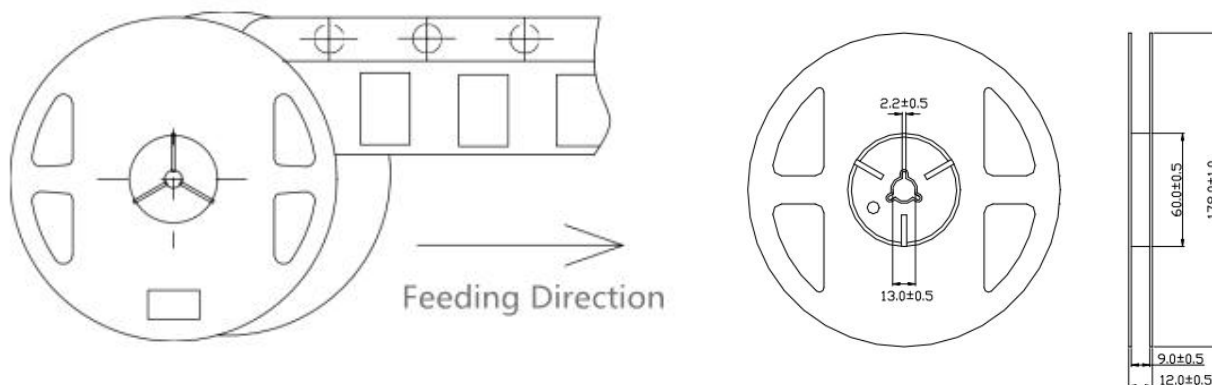
| Moisture proof level 防潮等级 | exposure life after open the packaging<br>在车间里拆开后产品的使用寿命 |              |
|---------------------------|----------------------------------------------------------|--------------|
|                           | Time 时间                                                  | Condition 条件 |
| LEVEL1                    | Unlimited                                                | ≤30°C /85%RH |
| LEVEL2                    | 1 year                                                   | ≤30°C /60%RH |
| LEVEL 2a                  | 4 weeks                                                  | ≤30°C /60%RH |
| LEVEL 3                   | 168 hours                                                | ≤30°C /60%RH |
| LEVEL 4                   | 72 hours                                                 | ≤30°C /60%RH |
| LEVEL 5                   | 48 hours                                                 | ≤30°C /60%RH |
| LEVEL 5a                  | 24 hours                                                 | ≤30°C /60%RH |
| LEVEL 6                   | Out of the box                                           | ≤30°C /60%RH |



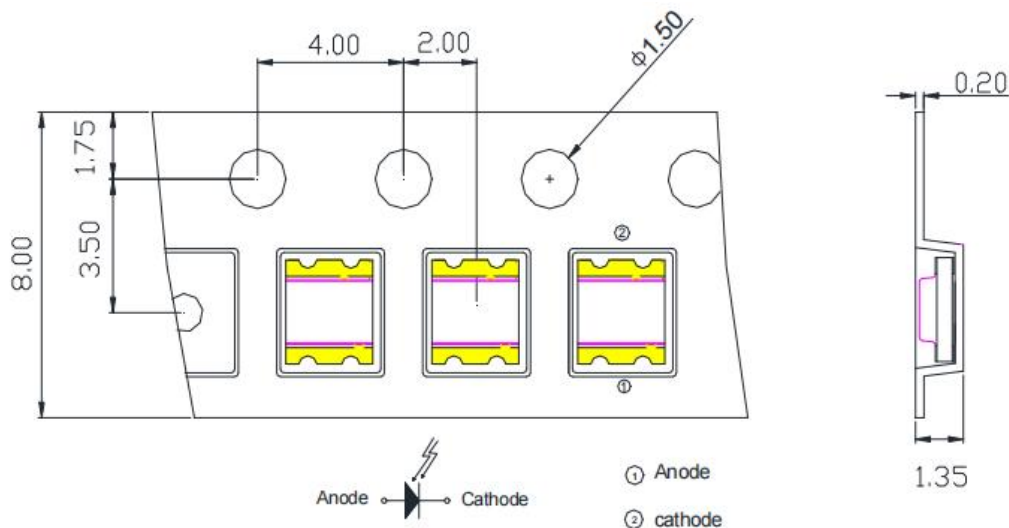
## ◆Packing 包装

• Feeding Direction 送料方向 (Unit: mm)

• Dimensions of Reel 卷盘尺寸 (Unit: mm)



• Dimensions of Tape 编带尺寸 (Unit: mm)



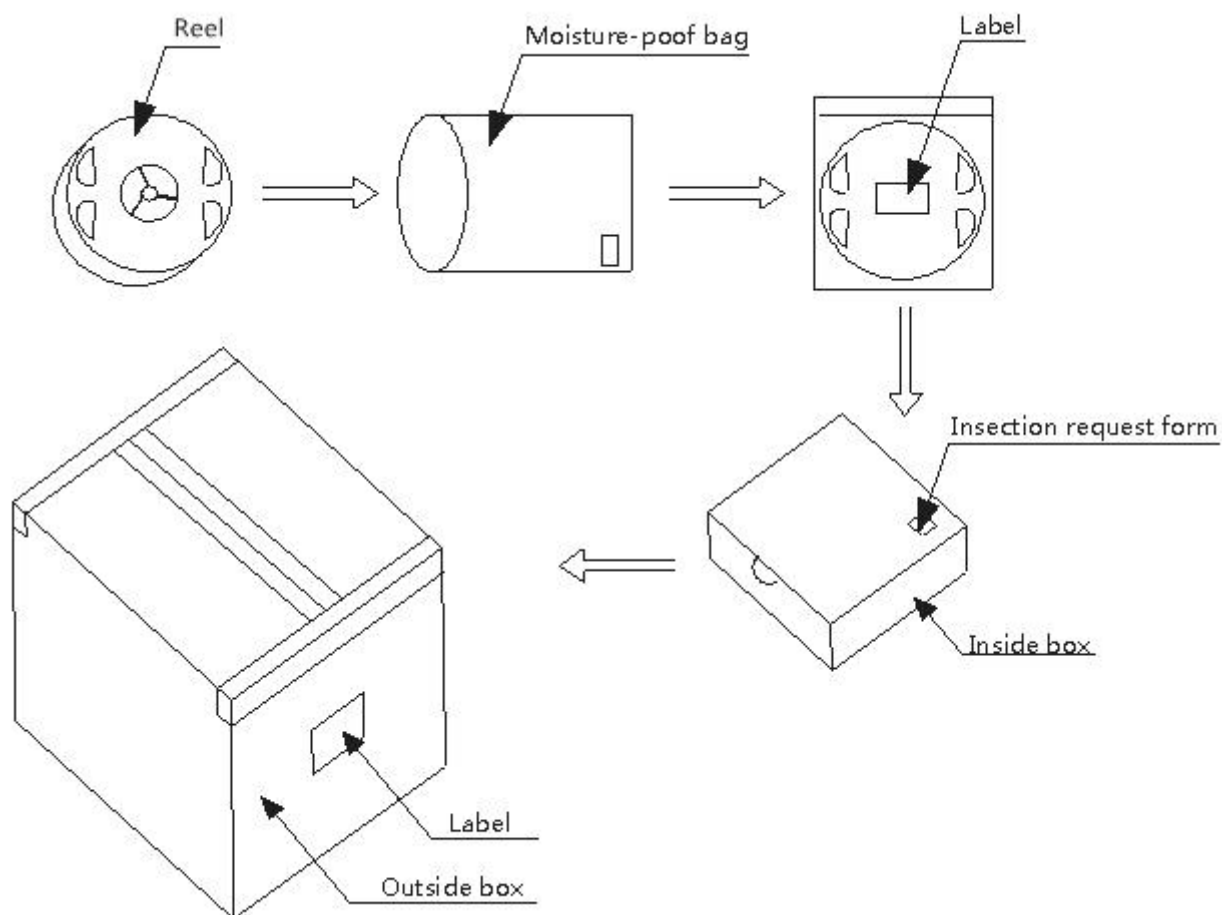
## Note ( 注释 ) :

- ❖ Empty reel are sealed with top cover tape. 空的载带要用封顶胶带密封
- ❖ The max loss number of SMD is 2pcs. SMD的最大损耗是2pcs.
- ❖ The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.  
符合ANSI/EIA RS-481规范是要负极面朝编带轮孔。
- ❖ 3,000pcs per reel. 每卷盘3000pcs



## ◆Packing 包装

## •Packaging Specifications 包装规范

**Notes (注释) :**

Reeled product (max.3,000) is packed in a sealed moisture-proof bag. Sixteen bags are packed in an inner box (size: about 270 X 230 X 260 mm) and tow inner boxes are in an outer box (size: about 562 X 248 X 280mm). On the label of moisture-proof bag, there should be the information of Part No., Lot No. and quantity number; also the total quantity number should be on inspection request form on outer box.

卷盘产品 (最大3000pcs) 是需要装在密封防潮袋里。一个内包装箱里可以装16袋 (尺寸: 大约270x230x260mm), 两个内包装箱可以装在一个外包装箱里 (尺寸: 大约562x248x280mm)。在防潮袋标签上, 应该写有产品品号信息, 生产批号信息和数量; 而且总数量应该在外包装箱上的检验申请单上注明。

**◆Use matters needing attention 使用注意事项****1. Over-current-proof 过电流保护**

Customer must apply resistors r protection , otherwise slight voltage shift will cause or protection , otherwise slight voltage shift will cause big current change ( Burn out will happen )客户必须采用电阻器的 r 保护，否则轻微电压偏移将会引起或保护， 否则，轻微的电压变化会导致大电流变化（烧毁）

**2. Storage 存储**

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 30°C or less and 90%RH or less.

2.3 The LEDs should be used within a year.

2.4 After opening the package, the LEDs should be kept at 30°C or less and 70%RH or less.

2.5 The LEDs should be used within 168 hours (7 days) after opening the package

2.6 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment : 60±5°C for 24 hours.

2.1 在产品准备使用前，不要打开防潮袋。

2.2 在打开前 封装时，led 应保持在 30°C或更低，90%RH 或更低。

2.3 led 应该是 在一年内使用。

2.4 打开包装后，led 应保持在 30°C或以下 RH 值为 70%或更低。

2.5 led 应在 168 小时（7 天）内使用

2.6 如果吸湿材料（硅胶）已褪色或 led 已超过存储空间/时间