

# 承認書

## SPECIFICATION FOR APPROVAL

|                         |                  |
|-------------------------|------------------|
| ● 客戶名称                  |                  |
| ● Customer              |                  |
| ● 客戶品號                  |                  |
| ● Customer Part No.     |                  |
| ● 產品品號                  | HC-0603TB6C-BL-1 |
| ● Brightek Part No.     |                  |
| ● 產品規格描述                | 0603 贴片灯高波长水蓝光   |
| ● Specification         |                  |
| ● 製錶人                   | 王清               |
| ● Prepared By           |                  |
| ● 審核                    | 李东平              |
| ● Checkedy              |                  |
| ● 客戶回簽                  |                  |
| ● Customer Comfirmation |                  |
| ● 送样日期:                 |                  |
| ● Deliver date:         |                  |

說明: 一、謹致執事者: 茲提供敝公司產品之有關詳細規格及圖面資料, 敬請給予辦理測試認定手續。  
同時敬請 送返一份附有貴公司簽認之測試認定後之樣品認定書。

We are sending you our specification and drawings for your approval. Please return to us one copy "For Approval" with your approved signatures.

二、客戶意見欄 Customer' S Proposal

☐ Approve 承認 (請於認可欄中簽名)

☐ Disagree 不同意

Reason 原因:

光宇集團

中高端光电元件定制企业, 20 多年封装经验, 品质稳定, 值得信赖, 体现光的价值。

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GTU Group International (HK) Co., Limited

广东光宇半导体科技有限公司

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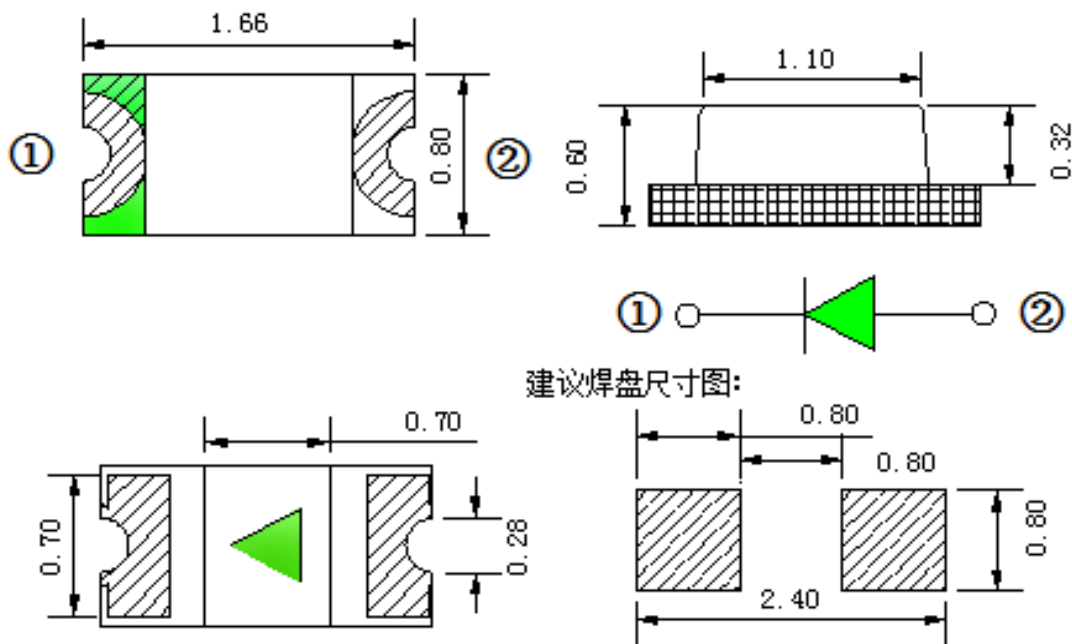
| 版本/版次 | 修改日期 | 修改内容 |
|-------|------|------|
|       |      |      |
|       |      |      |
|       |      |      |

## 1. overview

- \* Low power consumption
- \* Low power
- \* General equipment on the PCB board or panel
- \* with IC Supporting the use/Low current requirement

## 2. Product appearance size figure

(unit: mm)



### Note:

- 1: All dimensions are in millimeters (inches).
- 2: All dimension tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted.
- 3: Specifications are subject to change without notices.
- 4: This specification is for reference only for one year

### 3 parameter

The limit parameter (room temperature 25°C)

| parameter                                                    | The numerical       | Unit |
|--------------------------------------------------------------|---------------------|------|
| Dissipation power                                            | 96                  | mW   |
| Pulse current (1/10 work loops 0.1 millisecond pulse width ) | 100                 | mA   |
| Working current (IF)                                         | 5                   | mA   |
| Reverse voltage (VR)                                         | 5                   | V    |
| Experiment temperature range                                 | -20°C ~ +80°C       |      |
| Storage temperature range                                    | -20°C ~ +80°C       |      |
| Soldering temperature                                        | 245°C for 5 Seconds |      |

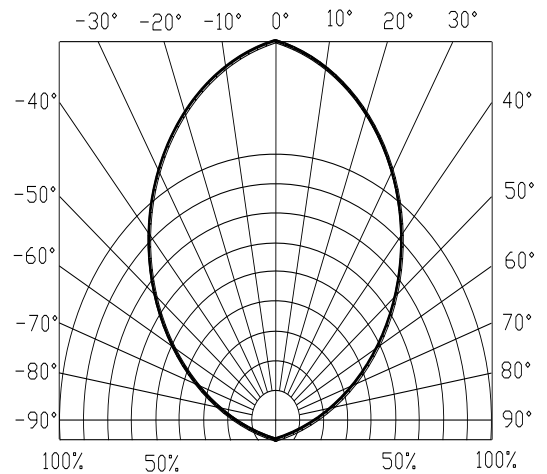
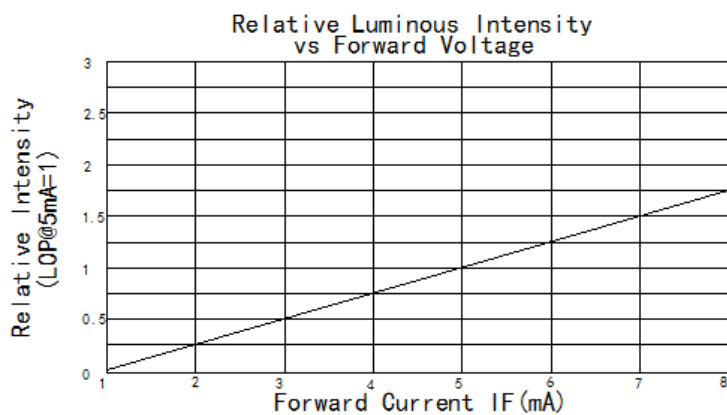
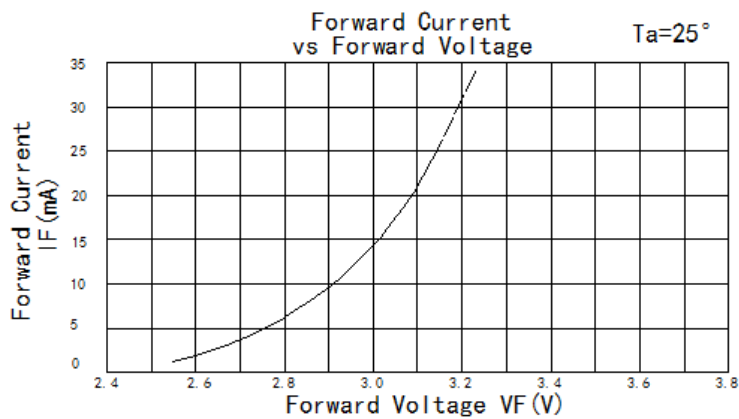
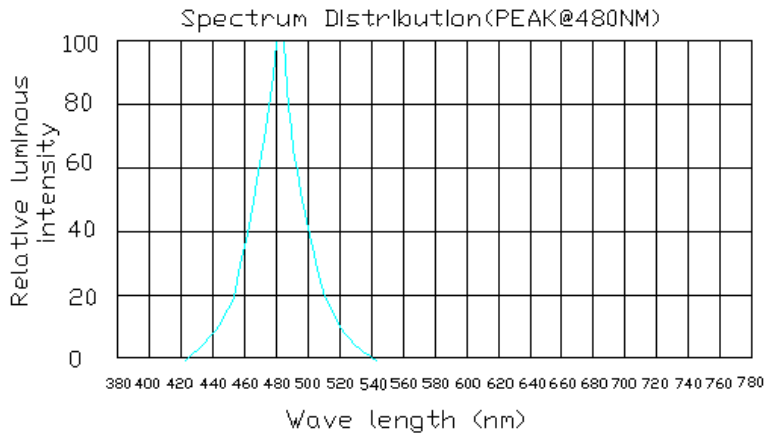
Photoelectric parameters At room temperature 25°C

| Parameter            | minimum value | median | maximum | Unit | Test Condition |
|----------------------|---------------|--------|---------|------|----------------|
| Luminous intensity   | 50            | ----   | 200     | med  | If=5mA         |
| Light Angle(2 θ 1/2) | ----          | 120    | ----    | deg  | If=5mA         |
| The wavelength( λ )  | 470           | 480    | 490     | nm   | If=5mA         |
| electric voltage     | 2.5           | ----   | 3.0     | V    | If=5mA         |
| Reverse current      |               | ----   | 1       | μA   | Vr=5V          |

Selection Guide:

| Colloid color | Chip      |                       |         |
|---------------|-----------|-----------------------|---------|
| Water clear   | Material  | Emitting light colors | λp(nm ) |
|               | InGaN/GaN | Blue                  | 480     |

4、Under the condition of 25 °C electrical diagram:



**Note: this specification does not recommend using ac, such as improper operation, cause accidental death lamp or other adverse phenomenon, this company is not responsible for! Advising clients to set the current to use this product, please let us know if they set the voltage to use the product.**

5. Not dry glue label

P/N: Product number

VF: Forward voltage

BIN: points light

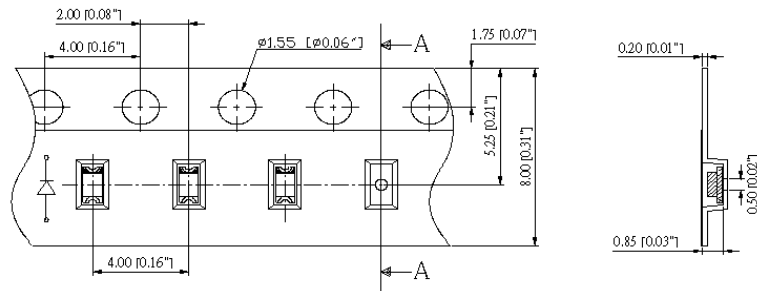
IV: Luminous intensity

WL: Color/wavelength

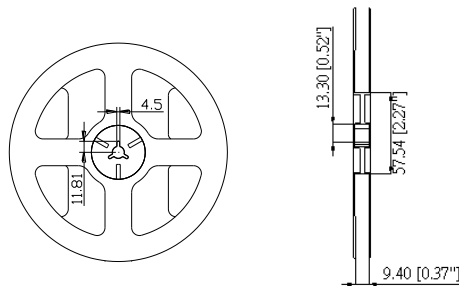
QTY: 5000PCS

QC: Production order

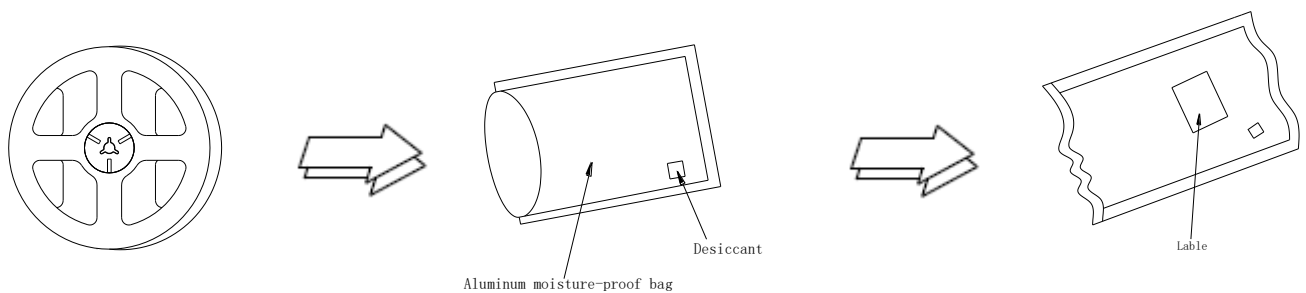
## 6. Tape size (unit:mm)



## 6.1 Reel Dimensions



## 6.2 Moisture Resistant Packaging



Note: unless mentioned, tolerance of + / - 0.1 mm.

**Note: this specification does not recommend using ac, such as improper operation, cause accidental death lamp or other adverse phenomenon, this company is not responsible for ! Advising clients to set the current to use this product, please let us know if they set the voltage to use the product.**

## 7. Reliability of the experimental project and conditions

| Test Item<br>测试项目                       | Ref. Standard<br>参考标准 | Test Conditions<br>测试条件                               | Note<br>备注 | Conclusion<br>结论 |
|-----------------------------------------|-----------------------|-------------------------------------------------------|------------|------------------|
| Life Test<br>老化测试                       | JESD22-A108           | Ta=25°C<br>IF=5mA                                     | 1000 hrs   | 0/100            |
| Temperature Cycle<br>温度循环               | JESD22-A104           | -20°C 30min<br>↑↓15min<br>80°C 30min                  | 200 cycle  | 0/100            |
| Thermal Shock<br>冷热冲击                   | JESD22-A106           | -20°C 15min<br>↑↓15sec<br>80°C 15min                  | 200 cycle  | 0/100            |
| High Temperature Storage<br>高温存储        | JESD22-A103           | Ta=100°C                                              | 1000 hrs   | 0/100            |
| Low Temperature Storage<br>低温存储         | JESD22-A119           | Ta=-20°C                                              | 1000 hrs   | 0/100            |
| Power Temperature<br>Cycling<br>点亮高低温循环 | JESD22-A105           | On5min-20°C>15min<br>↑↓ ↑↓<15min<br>Off5min80°C>15min | 200 cycle  | 0/100            |
| High Humidity Heat Life<br>Test<br>高温高湿 | JESD22-A101           | 60°C RH=90%<br>IF=5mA                                 | 1000 hrs   | 0/100            |
| Reflow soldering<br>回流焊                 | JESD22-B106           | 260°C for 3 sec                                       | 3 times    | 0/22             |

Reliability experiment unqualified judgement standard

IV: Attenuation less than 30%

VF: Change is more than 20%

note: 1) Same project the results of the test must be completed within 2 hours.

2) Testing must be completed in each experiment. Material return to normal conditions.

**Note: this specification does not recommend using ac, such as improper operation, cause accidental death lamp or other adverse phenomenon, this company is not responsible for! Advising clients to set the current to use this product, please let us know if they set the voltage to use the product.**

## 8. SMD Preservation and use:

8.1 Before opening the package, the LED should be stored at 30°C/60%RH or less. After opening the package, the LED should be placed in an environment of 20–30°C/30%RH or less.

8.2 To avoid the impact of the environment, it is recommended to dehumidify after unpacking at 60°C /24H. All the leds are needed to be vacuumed to avoid failure

8.3 If the desiccant faded or expired use, dry baking:  $60\pm 5^{\circ}\text{C}$ /24 hours.

8.4 LED Glue surface easy to dust, need to do the relevant dust prevention measures.

## 9. pick and place

Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or Handle the silicone lens surface, it may damage the internal circuitry.

## 10. Heat treatment

When driven by excessive current, the  $T_J$  (node temperature) of LED will exceed the period limit value, which leads to a serious shortening of LED life. Thermal treatment measures should effectively reduce the thermal resistance of application products. Common practice: install LED packages on metal matrix PCB boards. 1W LED products require the surface heat dissipation area of the metal substrate to be at least 30cm squared (over 80cm squared is recommended for 3W products), and its thermal conductivity is higher than 2.0w /MK. LED and gold substrate are combined by thermal conductive adhesive with good thermal conductivity. The thermal conductivity coefficient is required to be higher than 1.0w /MK and the thickness is less than 100um.

## 11. Clean

If you need to clean, use a clean, soft cloth dipped in alcohol to gently remove foreign matter. Do not use a cleaner such as acetone to avoid possible corrosion damage.

## 12. Electrical precautions

12.1 Led Reverse drive is not allowed

12.2 Current limiting measures are necessary, otherwise slight voltage changes will lead to large current changes, which may lead to LED failure.

12.3 Under the premise that the luminous quantity meets the requirements, it is recommended to use the drive current lower than the rated current, which is conducive to improving the reliability of the product.

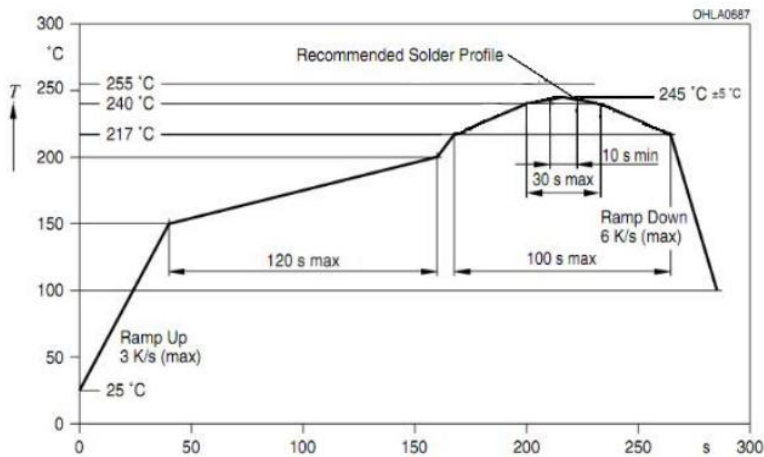
## 13. anti-static precautions

LED is electrostatic sensitive devices, in the process of preservation, use to take anti-static measures. Static electricity and surge can lead to changes in product characteristics, such as forward voltage reduction, which can be serious and even damage the product. So for the whole process (production, testing, packaging, etc.) and LED direct contact staff should do a good job to prevent and eliminate electrostatic measures. All related equipment and machinery should be properly grounded. The grounding ac resistance is less than 1.0 ohm, the table mat with surface resistance of  $10^6$ - $10^9$  ohm is needed on the work table. Ion fans must also be installed in electrostatic environments and equipment. During the operation, the operator should use anti-static bracelet, anti-static mat, anti-static overalls, working shoes, gloves, anti-static capacity.

#### 14. An electric soldering iron

It is recommended to use anti-static electric soldering iron, the temperature at the tip does not exceed 350°C, less than 3 seconds for each soldering. The power of the soldering iron should be less than 60W. Weld two electrode pins more than 2 seconds after each welding. Do not force the lens during welding. Problems with led usually begin when they are soldered. So you must work carefully as required.

#### 15. SMT Reflow instructions:



matters need attention:

1. Reflow soldering is only allowed once.
2. Do not apply pressure to the lamp body during reflow.
3. Repair should not be done after the LED have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed in advance whether the characteristics of LED will or will not be damaged by repairing.
4. After reflow welding is completed, do not press the heat dissipation plate, do not press to the colloidal part.