

# 承 認 書

## SPECIFICATION FOR APPROVAL

● 客戶名称

● Customer

● 客戶品號

● Customer Part No.

● 产品品號

HC-1206TY1C-AL-1

● Brightek Part No.

● 产品規格描述

1206透镜黄绿光

● Specification

● 製錶人

王清

● Prepared By

● 審 核

李东平

● Checkedy

● 客 戶 回 簽

● Customer

● 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:

光宇集团

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

光宇集团国际(香港)有限公司

GTU Group International (HK) Co., Limited

广东光宇半导体科技有限公司

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东莞市弘呈光电有限公司

DongGuan Hong cheng Optoelectronics Co., Ltd.

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ISO 14001  
环境管理  
体系认证



ISO 9001  
环境管理  
体系认证



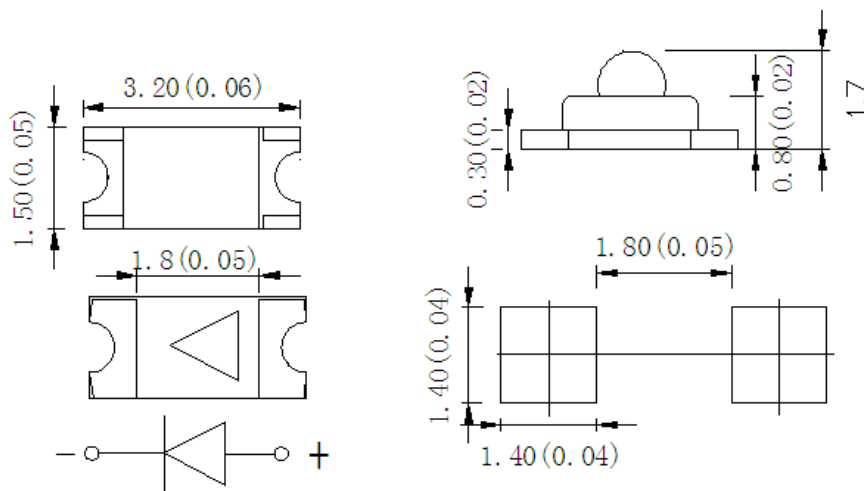
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## 1. overview

- \* 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

#### 4. parameter

##### 4.1 The limit parameter ( room temperature 25℃ )

| parameter                                                     | The numerical      | Unit |
|---------------------------------------------------------------|--------------------|------|
| Dissipation power                                             | 50                 | mW   |
| Pulse current ( 1/10 work loops 0.1 millisecond pulse width ) | 100                | mA   |
| Working current ( IF )                                        | 20                 | mA   |
| Reverse voltage ( VR                                          | 5                  | V    |
| Working temperature range                                     | -40℃ ~ +80℃        |      |
| Storage temperature range                                     | -40℃ ~ +80℃        |      |
| Soldering temperature                                         | 245℃ for 5 Seconds |      |

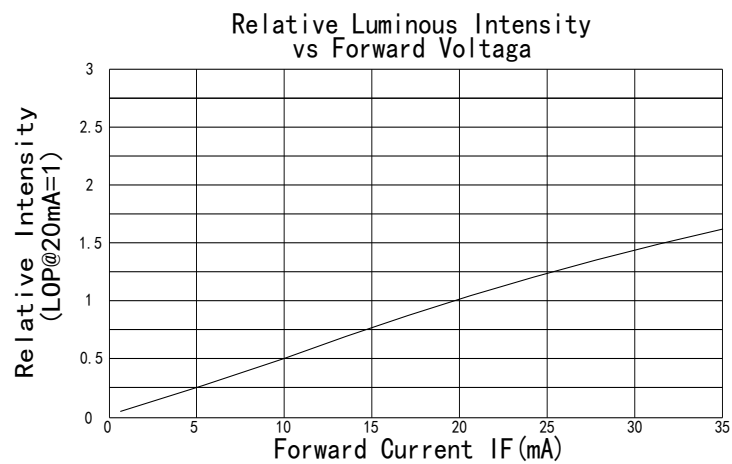
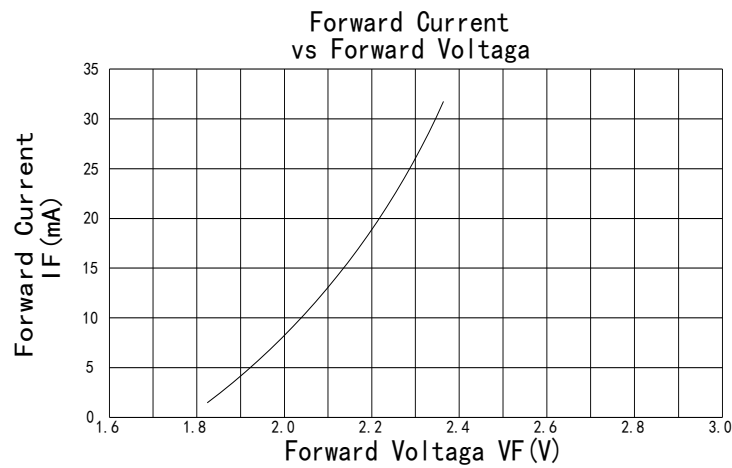
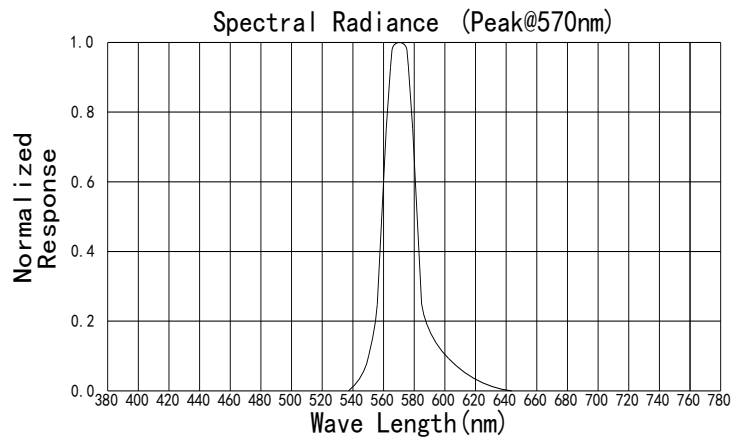
##### Photoelectric parameters At room temperature 25℃

| Parameter            | minimum value | median | maximum | Unit | Test Condition |
|----------------------|---------------|--------|---------|------|----------------|
| Luminous intensity   | 200           | -----  | 500     | mcd  | If=20mA        |
| Light Angle(2 θ 1/2) | -----         | -----  | -----   | deg  | If=20mA        |
| The wavelength( λ )  | 565           | 570    | 575     | nm   | If=20mA        |
| electric voltage     | 1. 8          | -----  | 2. 4    | V    | If=20mA        |
| Reverse current      |               | ----   | 5       | μA   | Vr=5V          |

##### Selection Guide:

| Colloid color | Chip      |                       |         |
|---------------|-----------|-----------------------|---------|
| Water clear   | Material  | Emitting light colors | λp(nm ) |
|               | GaASP/GaP | Green                 | 570     |

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



## 6. Not dry glue label

P/N: Product number

VF: Forward voltage

BIN: points light

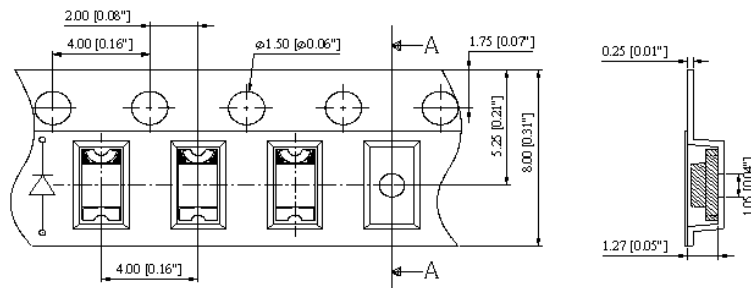
IV: Luminous intensity

WL: Color/wavelength

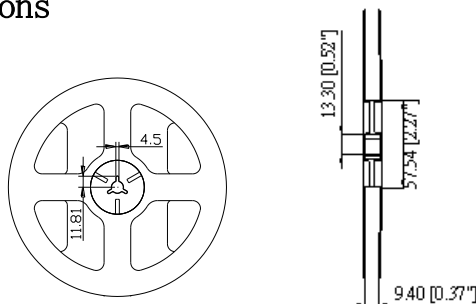
QTY: number

QC: Production order

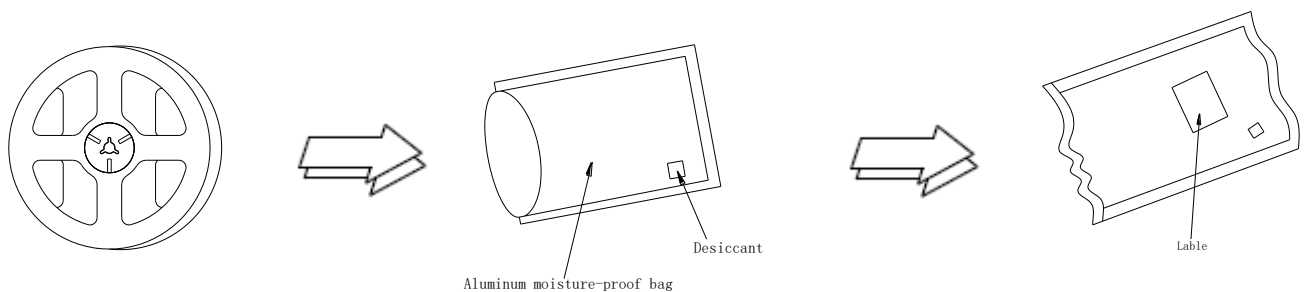
## 7. Tape size (unit:mm)



### 7.1 Reel Dimensions



### 7.2 Moisture Resistant Packaging



Note: unless mentioned, tolerance of  $\pm 0.1 \text{ mm}$ .

## 8. SMD products take precautions

### 8.1 Graph one : Hands material taking

- Hand have sweat , Sweat exist on the surface of a silicon rubber optical pollution , Affect luminescence .
- Fill the glue for silicon rubber , Silica gel is relatively soft , Hand yank may lead to break 、Crushed wafer caused death lamp .



### 8.2 Graph second : tweezers Surface take material

- Product packaging glue for silicon rubber ,Silica gel is relatively soft ,Squash with the tweezers will lead to disconnection, crushed chip causing death lamp products .
- Tweezers will scratch the product surface , Affect the light Angle .



### 8.3Figure 3 : SMDmaterial taking

When the suction nozzle diameter is less than the product will lead to press the silicon rubber suction nozzle to cause gold thread breakage and chip extrusion, caused death light etc .



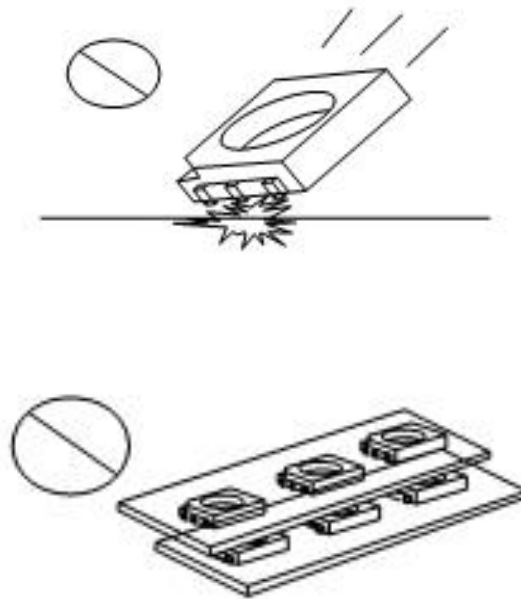
### 8.4Figure 4: blanking

Products fall to the ground, can lead to foot deformation, cause the weld position is different .

## 8.5 Figure 5: welding plate after placement

a. After welding plate, the welded directly to the board after the overlap, will damage the surface of product, can affect the light Angle scratch the surface °

b. After welding plate, welding plate and overlapping products have extrusion, extrusion will cause the chip and the damage and fracture of gold wire °



## 9. SMD Dehumidification and baking products

### 9.1 The experiment shows that

After test, found SMD series conforms to the IPC/JEDECJ - STD - 020 - c plastic integrated circuits (IC) SMD damp reflux sensitivity classification standards °

### 9.2 Reflow soldering SMD before use

If after open the sealed container bags, but before soldering SMD exposed to damp environment, is in high temperature during the welding process of SMD damage may occur, such as death lamp °

### 9.3 Storage instructions

Stored in a temperature below 30 °C, relative humidity is less than 30% in the environment of SMD don't need to bake desiccant before reflow soldering °

### 9.4 Baking needed to meet the conditions

There is no need to bake all SMD dehumidification, only not listed in the following store good SMD baking desiccant must be conducted °

- a. Already from the original vacuum packaging of SMD ◦
- b. Has not been reflow soldering SMD (after reflow soldering is no need to bake dehumidification) ◦

### 9.5 Baking method are as follows

- a. From open vacuum packaging or SMD SMD reel ◦
- b. SMD can be baked on the original reel ◦
- c. Will the reel or SMD SMD under 60-70 °C baking 12 hours ◦
- d. Please note that don't above 60 °C temperature baking SMD reel ◦



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### 10. Storage and cleaning products

- 1 ) Without open the original package, it is recommended that the environment for the storage, temperature: 5 °C to 30 °C, humidity: less than 85% ◦
- 2 ) After open the original packing, recommended storage condition is: temperature: 5 °C to 30 °C, humidity: less than 60% ◦

3) SMD is moisture sensitive device, to avoid the original moisture absorption, suggested after open the packing, store it in a dry agent an airtight container, or stored in nitrogen moistureproof enclosure °

4) After open the packing, the original should be used up within 12 hours °

5) If the dry agent failure or components exposed in the air more than 12 hours, dehumidifying treatment should be done.

Condition: 60-70 °C, 12 hours °

6) Please note that :

a. In order to prevent damage to the SMD, please do not use chemical liquid cleaning SMD without detailed description °

b. Do not use organic solvents such as acetone, water, etc.) that day clean or brush try SMD colloid, because it may damage the SMD °

c. Don't rinse the SMD, water less volatile and easily make the bracket pin to oxidize. If water cleaning SMD, must be baked desiccant before reflow soldering °

## 11.ESD protective

SMD is a semiconductor device, the static sensitive, especially for white, green, blue, purple, SMD to make efforts to prevent electrostatic generation and eliminate static electricity °

### 11.1 The generation of static electricity

a. Friction: in daily life, any two objects of different material contact after the separation, can produce static, and the one of the most common method of generation of static electricity, is the electrification. The insulation material, the better, the easier the electrification. In addition, any two objects of different material contact again after separation, also can produce static electricity °

b. Induction: in view of the conductive material, because electrons can flow freely in its surface, such as to be put in the electric field, due to the same, opposites attract, the positive and negative ions will move, can produce electric charge on the surface °

c. Conduction: in view of the conductive material, because electrons can flow freely in surface, such as contact with a charged object, the charge transfer will occur °

## 11.2 The harm of SMD :

- a. For the moment's electric field or electric current produced by the heat, make the SMD local injury °
- b. Because of destruction of the electric field or current SMD insulation layer, the device will not work (destroyed) characterized by death lamp °

## 11.3 Electrostatic protection and measures to eliminate

For the entire process (production, testing, packaging, etc.) all the employees to direct contact with SMD measures to prevent and eliminate static electricity, mainly include:

- a. Laying anti-static workshop floor and well grounded °
- b. Workbench for esd workstation, production machines grounding is good °
- c. Operators wear anti-static clothing, anti-static hand ring ring, gloves, or foot °
- d. Application of ion fan, the welding electric grounding measures °
- e. Packing with antistatic materials °

## CAUTIONS– Super Bright LED

### (1) Lead Forming

- a. At least 3mm from the base of the epoxy bulb should be keep when forming leads.
- b. Do not use the base of the leadframe as a fulcrum during lead forming. Lead forming should be done before soldering.
- c. Because the stress to the base may damage the characteristics or it may break the LEDs, do not apply any bending stress to the base of the lead
- d. When mounting the LEDs onto a PCB, the holes on the circuit board should be exactly aligned with the leads of the LEDs. Stress at the leads should be avoid when the LEDs are mounted on the PCB, because it causes damage to the epoxy resin and this will degrade the LEDs.
- e.

## (2) Storage

- a. The LEDs should be stored at stored at 30 C or less and 70%RH or less after being shipped and the storage life limits are 3 months.
- b. If the LEDs are stored more then 3 months, they can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- c. Please avoid rapid transitions in ambient temperature, especially, in high humidity environments where condensation can occur.

## (3) Static Electricity

- a. Static electricity or surge voltage damages the LEDs.
- b. It is recommended that a wristband or an anti-electrostatic glove be used when handling the LEDs.
- c. All devices, equipment and machinery must be properly grounded.
- d. It is recommended that measures be taken against surge voltage to the equipment that mounts the LEDs.
- e. Damaged LEDs will show some unusual characteristics such as the leak current remarkably increases, the forward voltage becomes lower, or the LEDs do not light at the low current.

Criteria: (VF>2.0V at IF=0.5mA)

## (4) Heat Generation

- a. Thermal design of the end product was most importance. Please consider the heat generation of the LED when making the system design.
- b. The thermal resistance of the circuit board and density of LED placement on the board, as well as other components was the important factor affecting the coefficient of temperature increase per input electric power. It must be avoid intense heat generation and operate within the maximum ratings given in the specification.
- c. The operating current should be decided after considering the ambient maximum temperature of LEDs.

## (5) Cleaning

- a. It is recommended that isopropyl alcohol be used as a solvent for cleaning the LEDs. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve

the resin or not. Freon solvents should not be used to clean the LEDs because of worldwide regulations.

b. Do not clean the LEDs by the ultrasonic. When it is absolutely necessary, the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. Before cleaning, a pre-test should be done to confirm whether any damage to the LEDs would occur.

## (6) Safety Guideline for Human Eyes

- a. In 1993, the International Electric Committee (IEC) issued a standard concerning laser product safety (IEC 825-1). Since then, this standard has been applied for diffused light sources (LEDs) as well as lasers. In 1998 IEC 60825-1 Edition 1.1 evaluated the magnitude of the light source.
- b. In 2001 IEC 60825-1 Amendment 2 converted the laser class into 7 classes for end products.
- c. Components are excluded from this system. Products which contain visible LEDs are now classified as class 1. Products containing UV LEDs can be classified as class 2 in cases where viewing angles are narrow, optical manipulation intensifies the light, and/or the energy emitted is high. For these systems it is recommended to avoid long term exposure. It is also recommended to follow the IEC regulations regarding safety and labeling of products.

## (7) Soldering Condition for LED Lamps

- a. Careful attention should be paid during soldering.
- b. Solder the LED no closer than 3mm from the base of the epoxy bulb. Soldering beyond the base of the tie bar is recommended.
- c. Recommended soldering conditions

| Dip Soldering    |                                                     | Soldering      |                                                      |
|------------------|-----------------------------------------------------|----------------|------------------------------------------------------|
| Pre-Heat         | 120° C Max                                          | Temperature    | 350° C Max                                           |
| Pre-Heat Time    | 60 seconds Max                                      | Soldering Time | 3 seconds Max                                        |
| Solder Bath      | 260° C Max                                          | Position       | No closer than 3 mm from the base of the epoxy bulb. |
| Temperature      | 10 seconds Max                                      |                |                                                      |
| Dipping Time     | No lower than 3 mm from the base of the epoxy bulb. |                |                                                      |
| Dipping Position |                                                     |                |                                                      |

b. For manual soldering, it is recommended a fixture be used to prevent damage to the inner structure of the LED. The lead pitch of the LED must match the pitch of the mounting holes on the PCB during component placement. Stress applied on the lead, particularly when heated, may cause damage to the conducting elements inside the LED.

e. For auto-soldering, ensure the PCB is of proper orientation as otherwise the lead may be bent slightly after soldered, which also apply stress on the LED. Use specific fixture whenever necessary.

f. NO stress should be applied on the LED during soldering or other heating processes, the LED should NOT be repositioned after soldering.

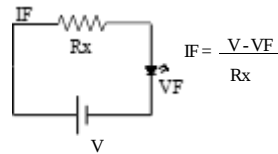
Avoid any mechanical stress or shock to the epoxy lens until the LED is cooled down to the room temperature. Minimize the mechanical stress applied onto the LED.

Cut the LED leadframes at room temperature. Cutting the leadframes at high temperatures may cause failure of the LEDs.

## (8) Others

- Care must be taken to ensure that the reverse voltage will not exceed the absolute maximum rating when using the LEDs with matrix drive. Keeping the Normal Forward to 20 mA.
- The LEDs described in this manual are intended to be used for ordinary electronic equipments

(such as office equipment, communications equipment, measurement instruments and household appliances). Consult Wah Wang' s sales staff in advance for information on the applications in which exceptional quality and reliability are required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health (such as for airplanes, aerospace, submersible repeaters, nuclear reactor control systems, automobiles, traffic control equipment, life support systems and safety devices).



- c. User shall not reverse engineer by disassembling or analysis of the LEDs without having prior written consent from Wah Wang. When defective LEDs are found, the User shall inform Wah Wang directly before disassembling or analysis.
- d. The formal specifications must be exchanged and signed by both parties before large volume purchase begins.
- e. The appearance and specifications of the product may be modified for improvement without notice.