

**WCN-7070HO-120-CE-V8****SPECIFICATION**

| WCN                 |                        |                                                                                     | CUSTOMER<br>Confirmed |
|---------------------|------------------------|-------------------------------------------------------------------------------------|-----------------------|
| Prepared by         | Checked by             | Approved by                                                                         |                       |
| LiuGuo<br>2018-11-9 | ZhangChun<br>2018-11-9 |  |                       |



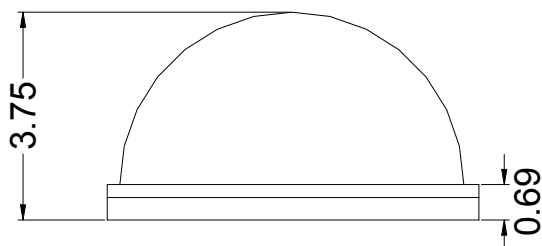
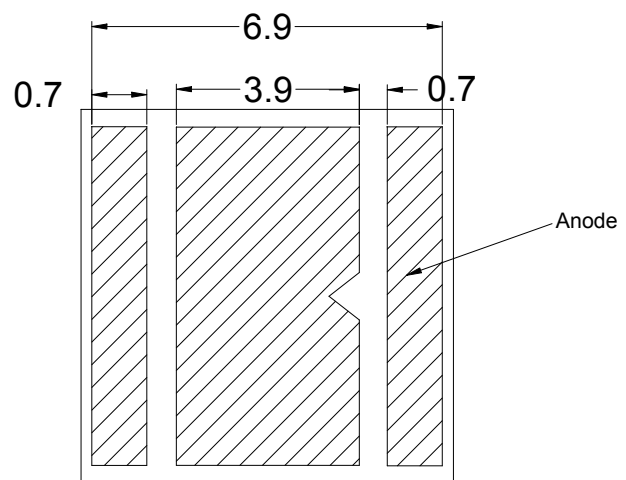
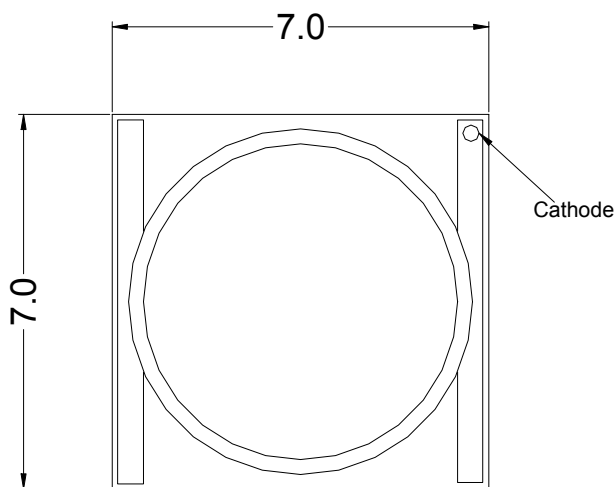
ATTENTION  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
SENSITIVE DEVICES



## Description

- ◆ Viewing angle: 140 deg
- ◆ The materials of the LED dice is AlGaInP
- ◆ 7.0mm×7.0mm×3.75mm
- ◆ RoHS compliant lead-free soldering compatible

## Package Outline



## NOTES:

1. All dimensions units are millimeters ;
2. All dimensions tolerances are  $\pm 0.2\text{mm}$  unless otherwise noted.

## Absolute Maximum Ratings at Ta=25℃

| Parameter               | Symbol | Rating    | Units |
|-------------------------|--------|-----------|-------|
| Power Dissipation       | Pd     | 5600      | mW    |
| Forward current         | IF     | 700       | mA    |
| Peak Forward Current    | IFP    | 1000      | mA    |
| Electrostatic Discharge | ESD    | 1000      | V     |
| Operating temperature   | Topr   | -30~+85   | ℃     |
| Storage temperature     | Tstg   | -40 ~+100 | ℃     |
| junction temperature    | Tj     | 95        | ℃     |

## Electrical/Optical characteristics at Ta=25℃

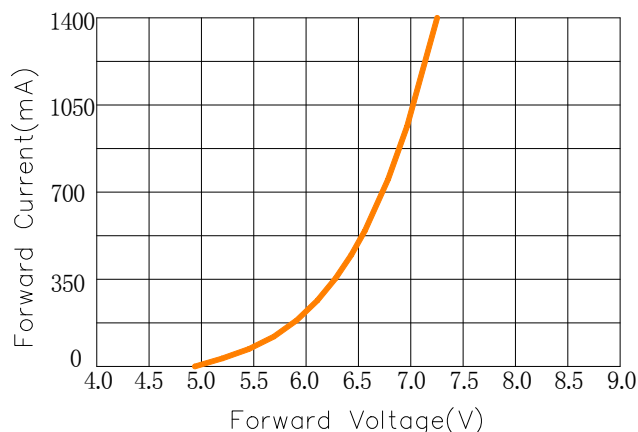
| Item                    | test condition | Symbol   | Value |      |      | Unit |
|-------------------------|----------------|----------|-------|------|------|------|
|                         |                |          | Min.  | Typ. | Max. |      |
| Forward voltage         | If=700mA       | Vf       | 6.5   | --   | 7    | V    |
|                         |                |          | 7     | --   | 7.5  | V    |
|                         |                |          | 7.5   | --   | 8    | V    |
| Luminous intensity      | If=700mA       | Iv       | 300   | --   | 350  | LM   |
|                         |                |          | 350   | --   | 400  | LM   |
|                         |                |          | 400   | --   | 450  | LM   |
| Dominant wavelength     | If=700mA       | λd       | 600   | --   | 605  | nm   |
|                         |                |          | 605   | --   | 610  | nm   |
| Viewing angle at 50% Iv | If=700mA       | 2 θ1/2   | --    | 140  | --   | Deg  |
| Thermal resistance      | If=700mA       | Rth(j-s) | --    | --   | 450  | ℃/W  |

### NOTE:

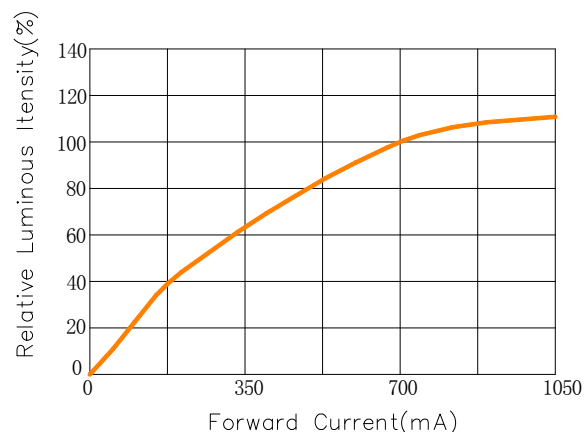
- 1.1/10 Duty cycle, 0.1ms pulse width.
2. The above forward voltage measurement allowance tolerance is 0.1V.
3. the above luminous intensity measurement allowance tolerance ±10%.

## Optical characteristics curves

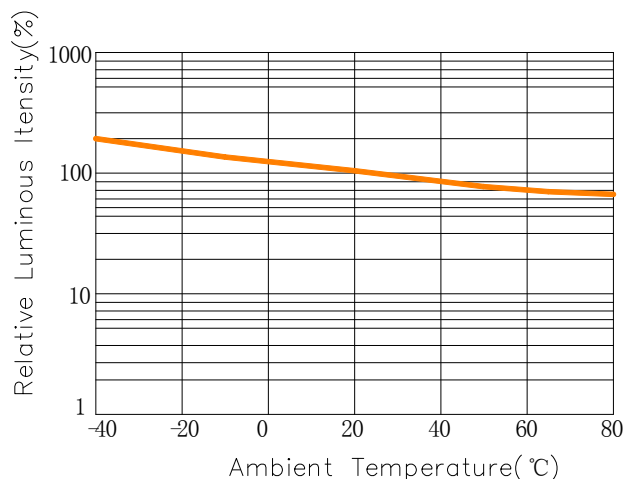
### Forward Current VS Forward Voltage



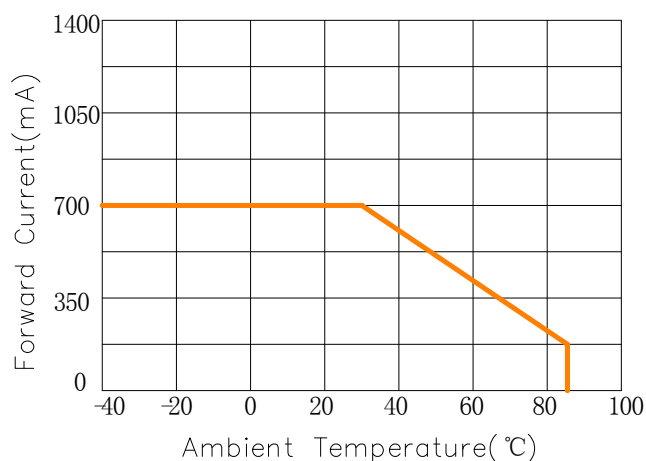
### Relative Flux VS Forward Current



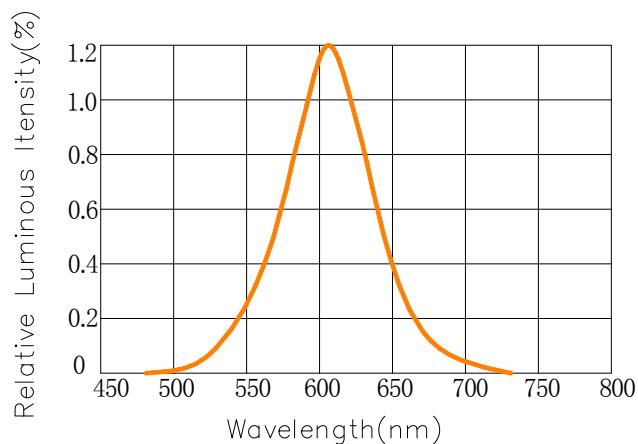
### Relative Flux VS Ambient Temperature



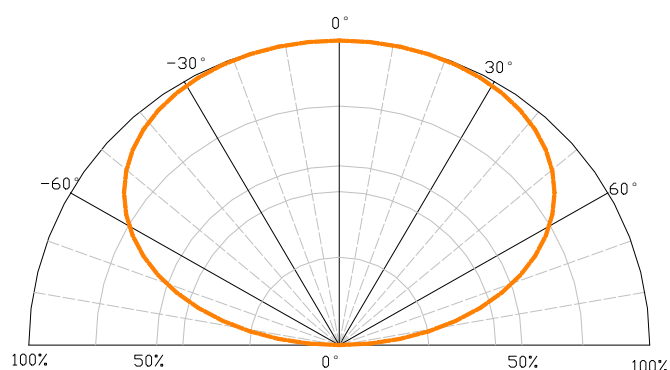
### Forward Current VS Ambient Temperature



### Relative Spectral Distribution



### Typical Spectral Distribution

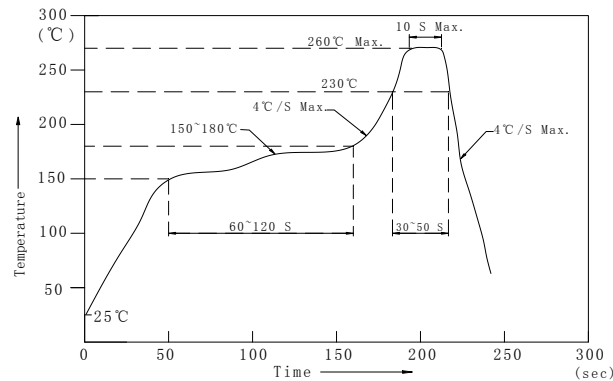


## Test items and results of reliability

| Type                   | Test Item                    | Test Conditions                | Note      | Number of Damaged |
|------------------------|------------------------------|--------------------------------|-----------|-------------------|
| Environmental Sequence | Reflow                       | Ta=260℃max<br>T=10s            | 2 times   | 0/22              |
|                        | Temperature Cycle            | -40℃ 30min<br>↑↓<br>100℃ 30min | 100 cycle | 0/22              |
|                        | Thermal Shock                | -40℃ 15min<br>↑↓<br>100℃ 15min | 100 cycle | 0/22              |
|                        | High Humidity Heat Cycle     | 30℃↔65℃<br>90%RH 24hrs/1cycle  | 10 cycle  | 0/22              |
|                        | High Temperature Storage     | Ta=100℃                        | 1000 hrs  | 0/22              |
|                        | Low Temperature Storage      | Ta=-40℃                        | 1000 hrs  | 0/22              |
|                        | Humidity Heat Storage        | Ta=60℃<br>RH=90%               | 1000 hrs  | 0/22              |
|                        | Low Temperature Storage      | Ta=-30℃                        | 1000 hrs  | 0/22              |
| Operation Sequence     | Life Test                    | Ta=25℃<br>IF=20mA              | 1000 hrs  | 0/22              |
|                        | High Humidity Heat Life Test | 60℃ RH=90%<br>IF=10mA          | 500 hrs   | 0/22              |
|                        | Low Temperature Life Test    | Ta=-20℃<br>IF=20mA             | 1000 hrs  | 0/22              |

## Reflow Profile

### ■ Reflow Temp/Time



### Notes:

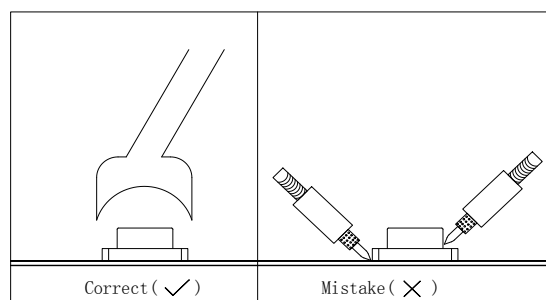
1. We recommend the reflow temperature 245°C(±5°C). the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■ Soldering iron

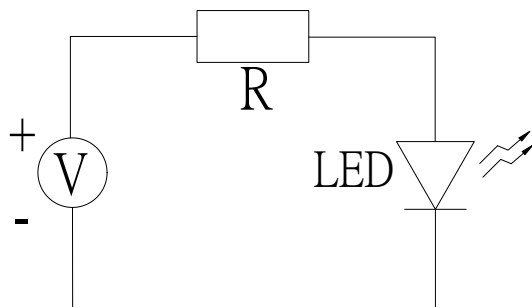
Basic spec is  $\leq 5\text{sec}$  when 260°C. If temperature is higher, time should be shorter (+10°C → -1sec). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C.

### ■ Rework

1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



■ Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow solder etc.

**Test circuit and handling precautions****■ Test circuit****■ Handling precautions****1. Over-current-proof**

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

**2. Storage**

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

Humidity: 60% R.H. Max.

Temperature : 5°C~30°C (41°F~86°F)

2.2 Shelf life in sealed bag: 12 month at <5°C~30°C and <30% R.H. After the package is

Opened, the products should be used within a week or they should be keeping to stored at  $\leq 20$  R.H. with zip-lock sealed.

**3. Baking**

It is recommended to baking before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1 70 $\pm$ 3°C x(12~24hrs) and <5%RH, taped reel type

3.2 100 $\pm$ 3°C x(45min~1hr), bulk type

3.3 130 $\pm$ 3°C x(15~30min), bulk type