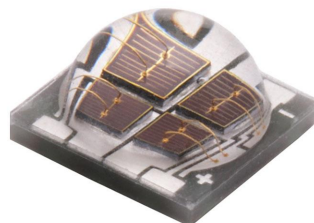


# PRODUCT SPECIFICATION



**Part No.: WL-5P5050EP120IR-820**  
**SMD High Power LED**

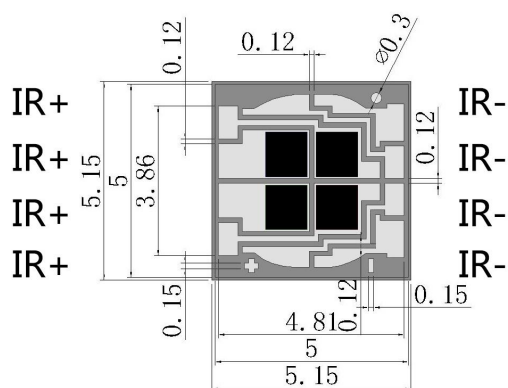
## Catalog

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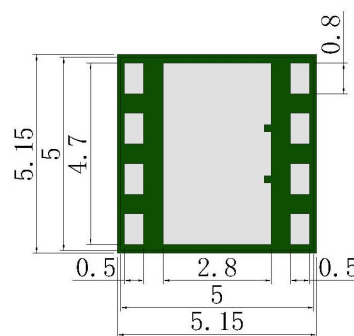
## 1.Product Features

- High Brightness IR LED Plane Package
- Viewing Angle 120 Degree
- Transparent Silicone
- Chip Material: AlGaAs
- RoHS Compliant

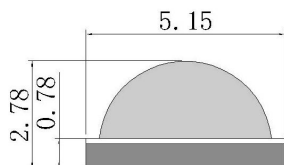
## 2.Dimensions



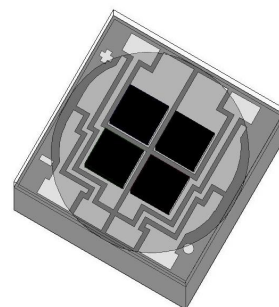
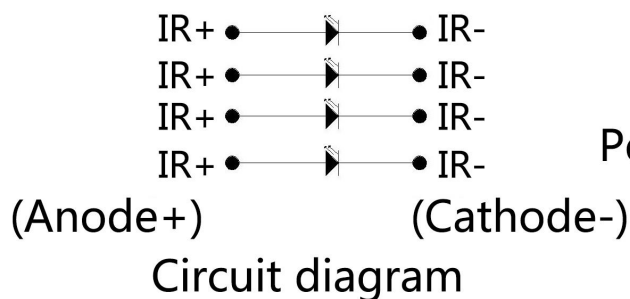
## Top view



## Bottom view



## Side view



## Perspective view

### Notes:

1. All dimensions are in millimeters.
2. Tolerance is  $\pm 0.1\text{mm}$  unless otherwise noted.

### 3. Absolute Maximum Rating @ Ta=25° C

| Parameter                                                    | Symbol | Maximum Rating  | Unit |
|--------------------------------------------------------------|--------|-----------------|------|
| Continuous Forward Current                                   | IF     | 700             | mA   |
| Peak Forward Current<br>(1/10 Duty Cycle, 0.1ms Pulse Width) | IFp    | 1000            | mA   |
| Reverse Voltage                                              | VR     | 5               | V    |
| Power Dissipation                                            | PD     | 1.2             | W    |
| Electrostatic Discharge                                      | ESD    | 1000            | V    |
| Operating Temperature Range                                  | TOPR   | -25°C to +80°C  |      |
| Storage Temperature Range                                    | TSTG   | -35°C to +100°C |      |
| Lead Soldering Temperature                                   | TSOL   | 260°C           |      |

### 4. Optical Character @ Ta=25° C

| Parameter                 | Symbol  | Color | Min. | Typ. | Max. | Unit | Test Condition |
|---------------------------|---------|-------|------|------|------|------|----------------|
| Forward Voltage           | VF      | IR    | 1.4  | 1.6  | 1.8  | V    | IF=700mA       |
| Radiant Power             | PO      | IR    | 300  | 400  | 500  | mW   | IF=700mA       |
| Peak Wavelength           | WIP     | IR    | 820  | 823  | 825  | nm   | IF=700mA       |
| Reverse Current           | IR      |       | 0    |      | 10   | μA   | VR=5V          |
| Viewing Angle             | 2θ1/2   |       |      |      | 120  | deg  | IF=700mA       |
| Recommend Forward Current | IF(rec) | IR    |      |      | 700  | mA   |                |

PS: The above data is only for a single chip, the product is 4 chips in parallel, working current x 4

#### Notes:

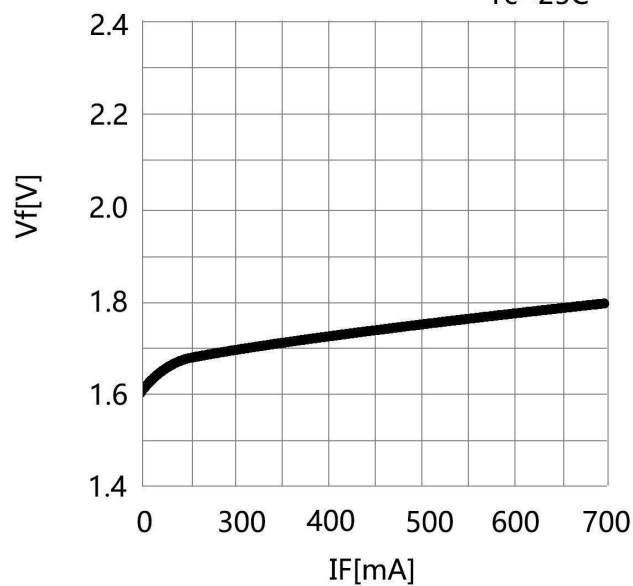
Measurement tolerance of forward voltage ±0.1V

## 5. Optical Character Curves

( 25 ° Ambient Temperature Unless Otherwise Noted )

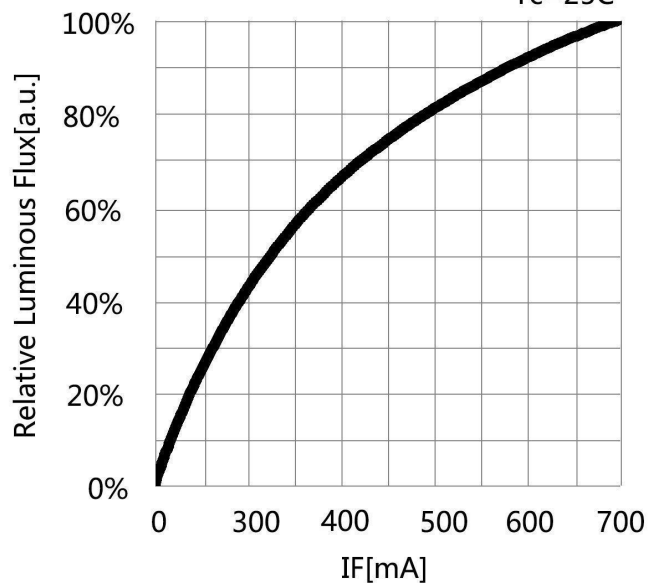
Forward Current vs. Forward Voltage

$T_c = 25^\circ\text{C}$



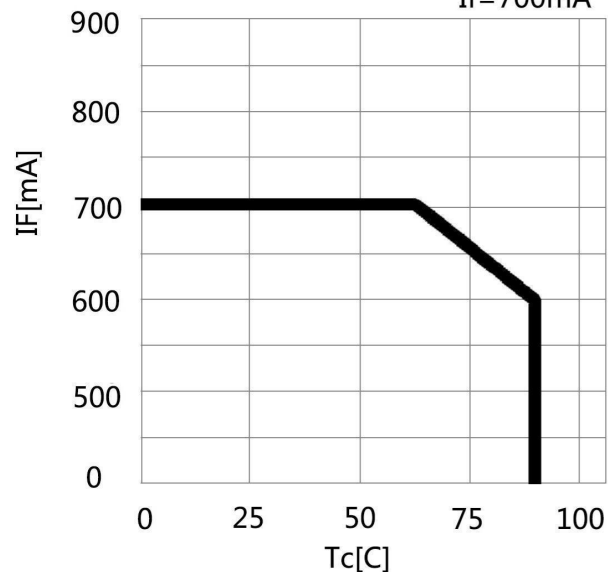
Forward Current vs. Relative Luminous Flux

$T_c = 25^\circ\text{C}$



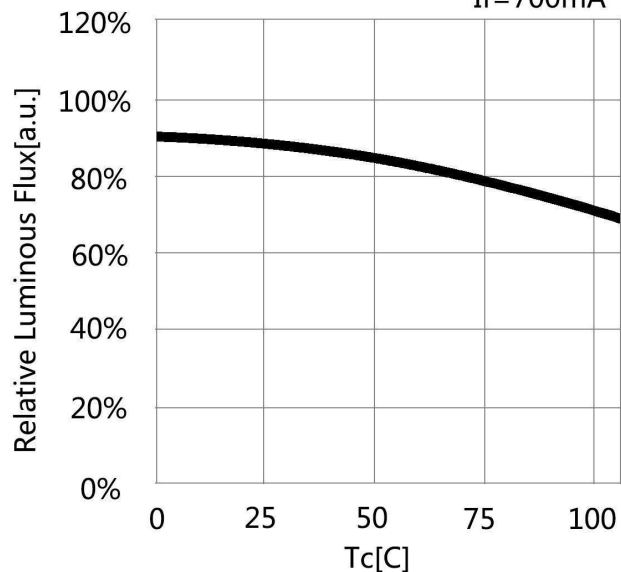
Case Temperature vs. Forward Current

$I_f = 700\text{mA}$

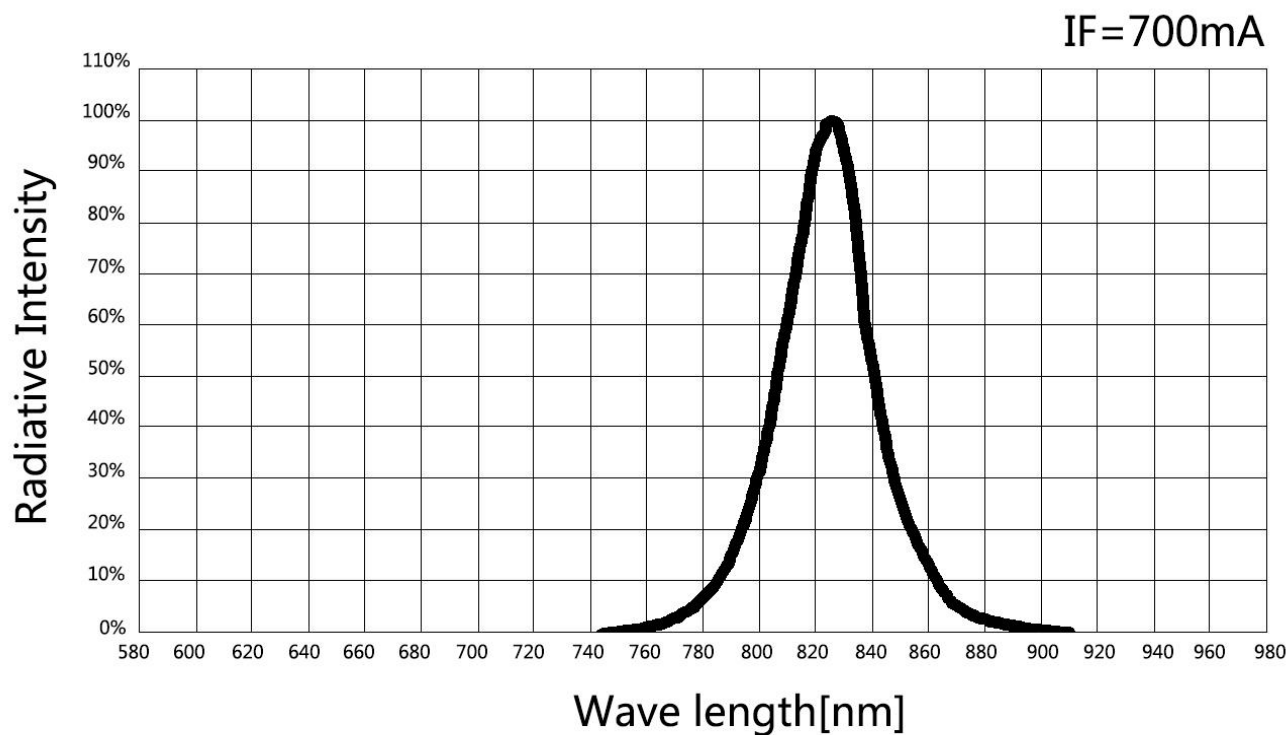


Case Temperature vs. Relative Luminous Flux

$I_f = 700\text{mA}$



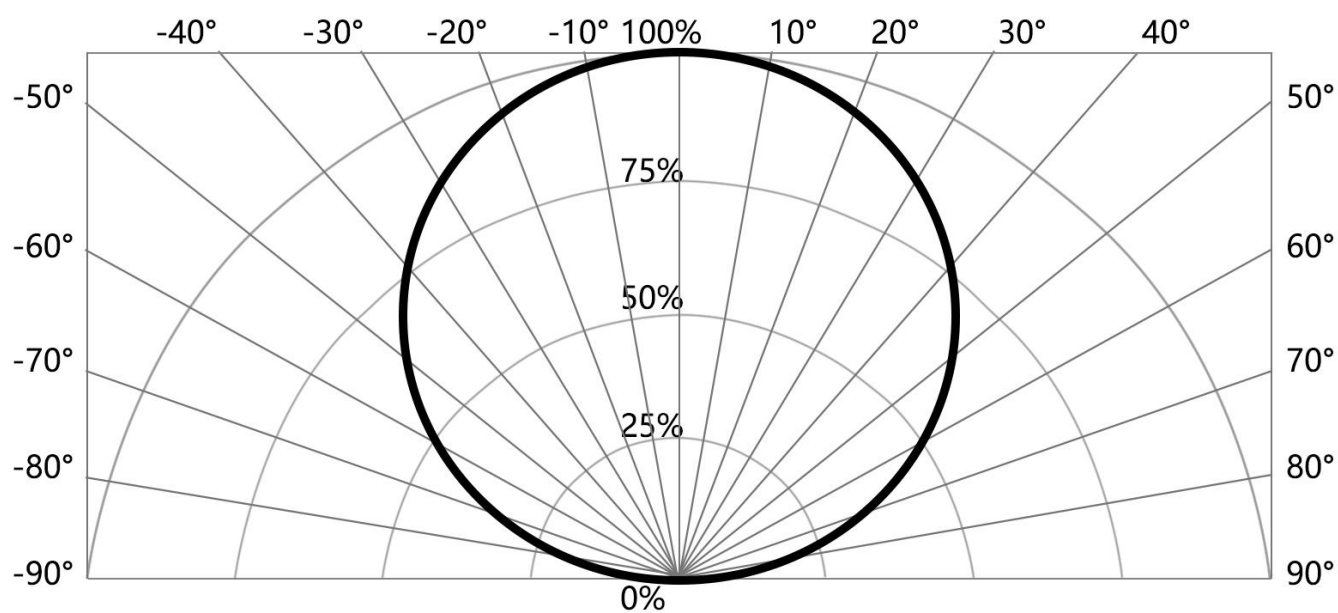
## 6. Spectrum Curves



## 7. Viewing Angle Curves

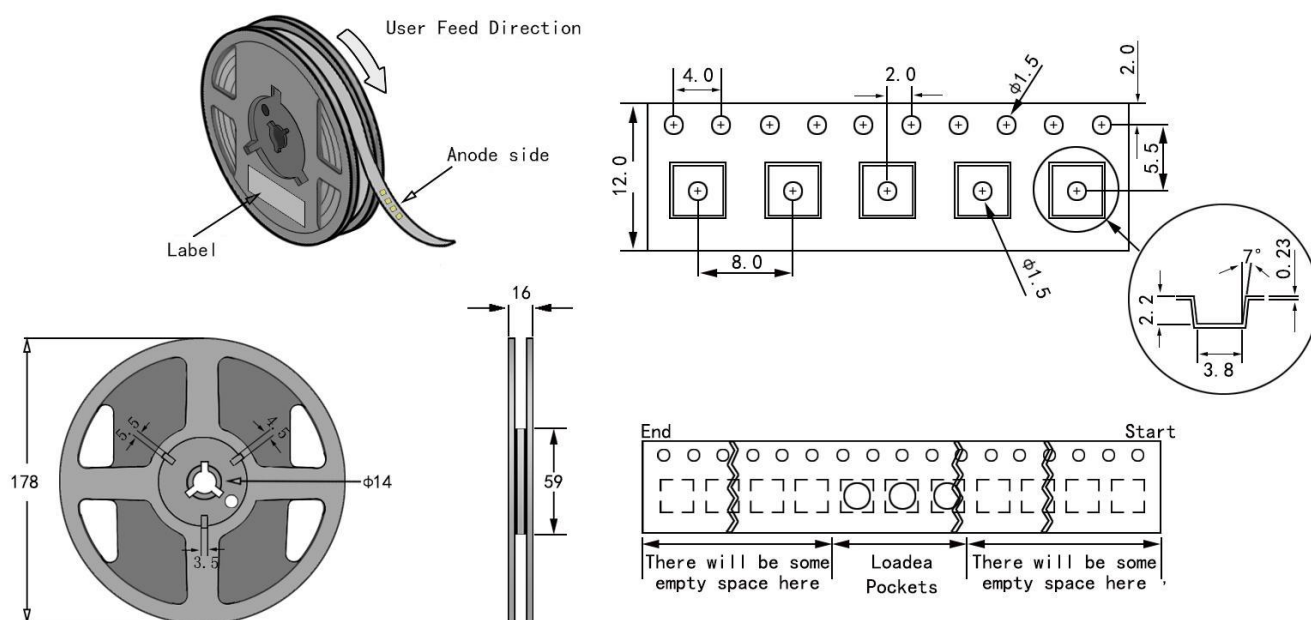
Radiation Characteristic

IF=700mA



## 8. Tape & Reel Packing

1. Recommend unpacked LED beads be welded within one day,if not,please vacuumize again and store in an environment of 20-35°C and 30-60% humidity. If can't vacuumize,please store LED beads in moisture proof box,control at 25°C±3°C, humidity 50-60%.If unpacked above 1week,bake at 60±5°C for 10-12 hours before weld.

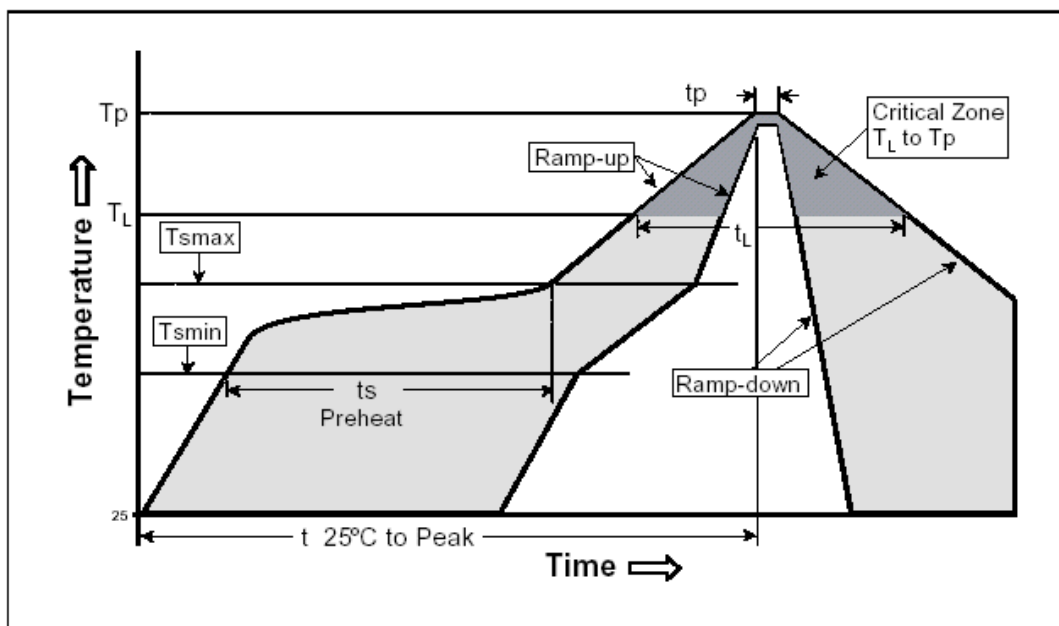


### Notes:

1. QTY: 700pcs/Reel
2. Tolerance  $\pm 0.2\text{mm}$ .
3. Package: P/N

## 9.Soldering Advice

1. When soldering, don't touch the LED appearance gel during, this bad operation will destroy the LED. Moding LED usually use reflow soldering, please refer to the following reflow temperature curve , and recommend the user follow the soldering temperature curve of the solder paste.



| Temperature Curve Character                     | Lead-free solder     |
|-------------------------------------------------|----------------------|
| Average heating rate(TSmin to Tp)               | Top 3 °C / s         |
| Preheating: Minimum temperature (TSmin)         | 90°C                 |
| Preheating: Maximum temperature (TSmax)         | 200°C                |
| Preheating: Time (TSmin to TSmax)               | 60-180 s             |
| Duration above temperature: Temperature TL      | 240°C                |
| Duration above temperature: Time tL             | 60-150 s             |
| Peak/classification temperature (Tp)            | 260°C                |
| Time within 5°C of actual peak temperature (tp) | 20-40 s              |
| Cooling speed                                   | The highest 6 °C / s |
| Time to reach peak temperature at 25°C          | 8 minutes Max        |

## 10.Cautions

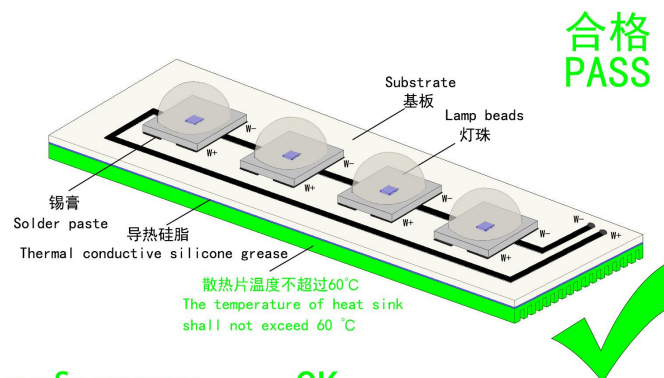
### 1. Electrostatic Treatment

Do a full range of anti-static measures (such as: anti-static ring, anti-static clothes, machine, equipment grounding wire, etc.)



### 2. Heat Dissipation

- A、 It is recommend to configure reasonable heat dissipation device for the product.
- B、 The best working temperature range of the product is 40-60°. It is recommended to control the working temperature of the product within a reasonable range.



### 3. Installation Conditions

reference OK

- A、 Do not exert any pressure on the LED area during the use of the led beads. If the machine is used to take materials, select a suction nozzle of reasonable size,such as below:

