

# PRODUCT SPECIFICATION



**Part No.: SRC-13G45G-520GK**  
**Ceramic LED**

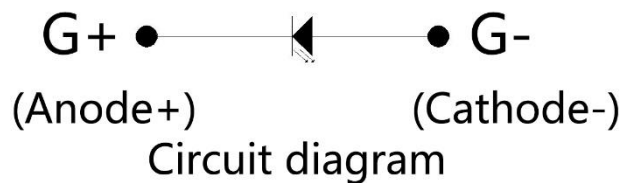
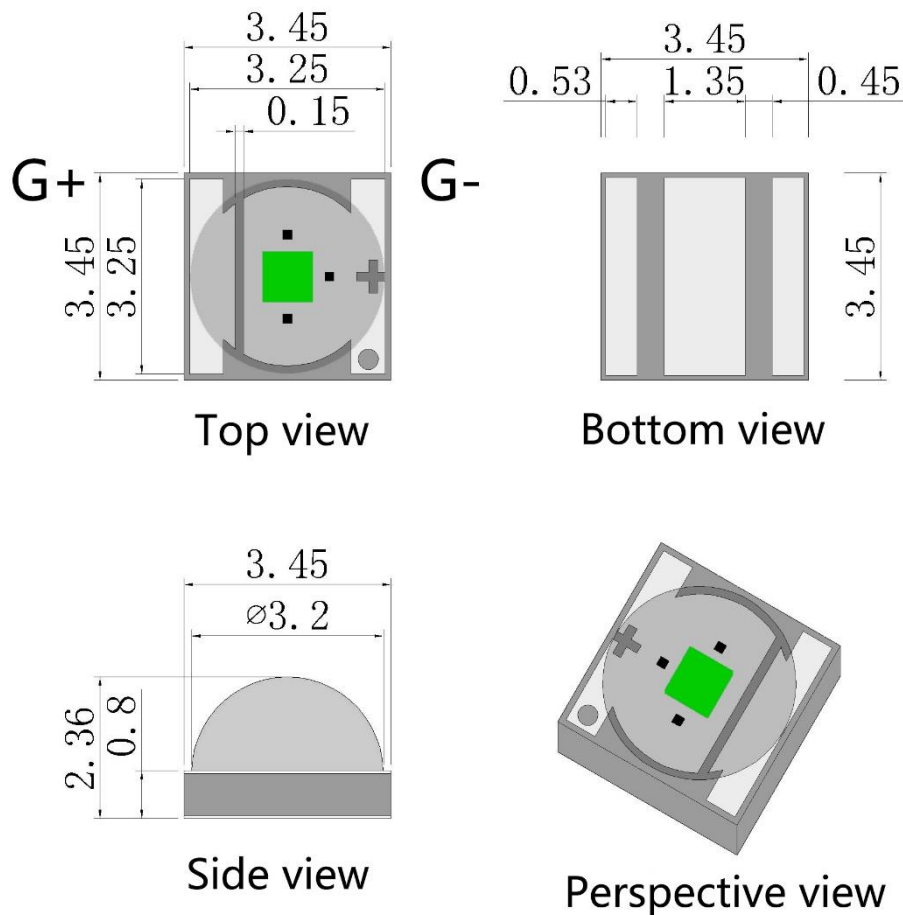
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## 1. Product Features

- High-Luminosity Green LED
- Ceramic Substrate
- Clear Silicone Dome Lens
- Viewing Angle: 120 °
- Die Material: InGaN
- Low Voltage DC Operated
- Lead-Free Reflow Soldering  
(J-STD-020 Compliant)

## 2. Mechanical Dimensions



### Notes:

1. Dimensions in millimeters (mm)
2. Dimension Tolerance:  $\pm 0.1$  mm

### 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     | 3              | W    |
| Electrostatic Discharge                                      | ESD    | 1000           | V    |
| Operating Temperature Range                                  | TOPR   | -25°C to +60°C |      |
| Storage Temperature Range                                    | TSTG   | -35°C to +80°C |      |
| Lead Soldering Temperature                                   | TSOL   | 260°C          |      |

### 4. Optical Character @ Ta = 25 °C

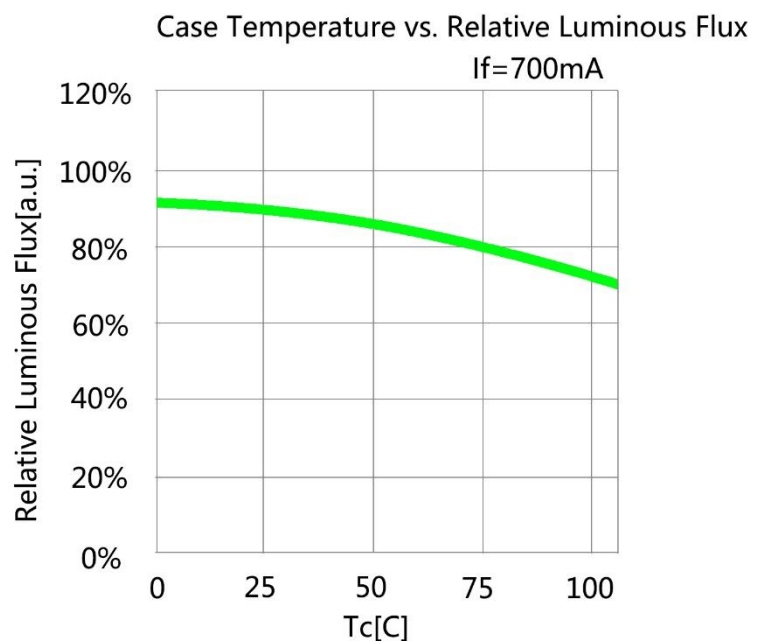
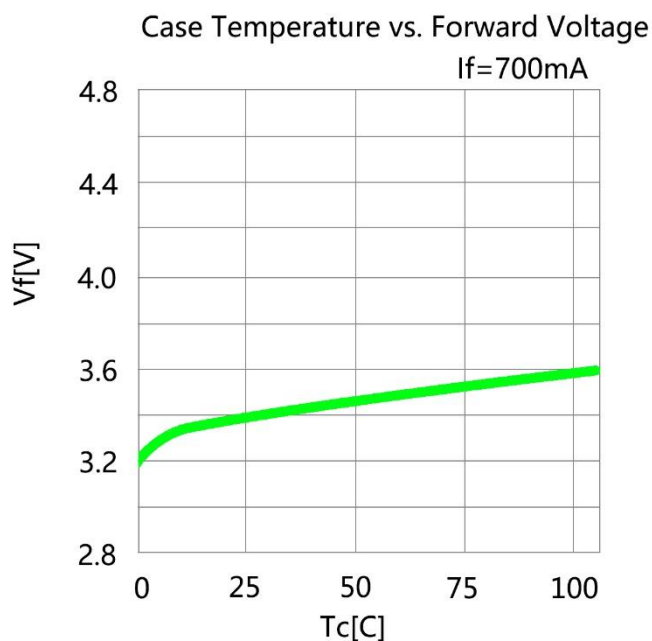
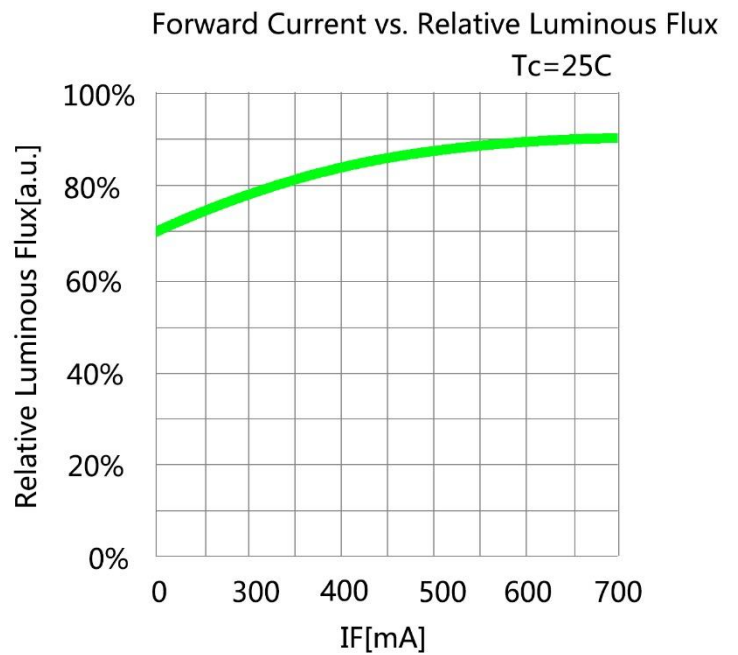
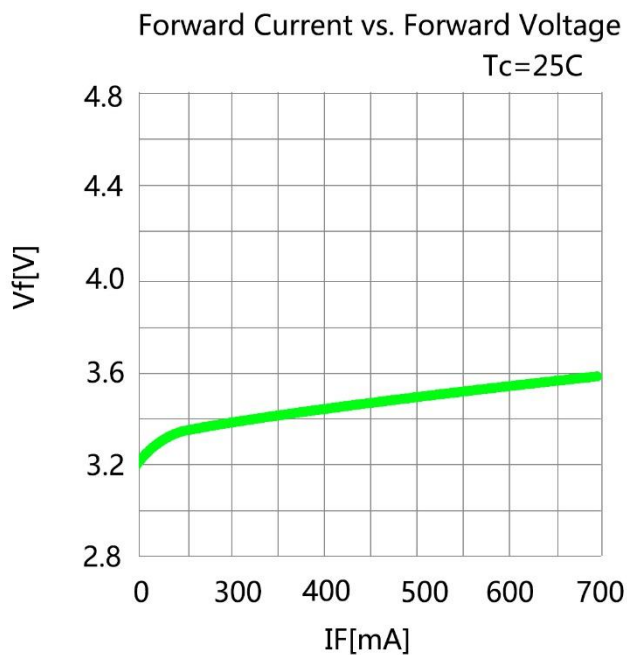
| Parameter                 | Symbol            | Color | Min. | Typ.  | Max. | Unit | Test Condition |
|---------------------------|-------------------|-------|------|-------|------|------|----------------|
| Forward Voltage           | VF                | G     | 3.2  | 3.4   | 3.6  | V    | IF=700mA       |
| Luminous Flux             | Φ                 | G     | 160  | 170   | 180  | lm   | IF=700mA       |
| Wavelength                | WL                | G     | 520  | 522.5 | 525  | nm   | IF=700mA       |
| Reverse Current           | IR                |       | 0    |       | 10   | μA   | VR=5V          |
| Viewing Angle             | 2θ <sub>1/2</sub> |       |      |       | 120  | deg  | IF=700mA       |
| Recommend Forward Current | IF (typ)          | G     |      |       | 700  | mA   |                |

#### Notes:

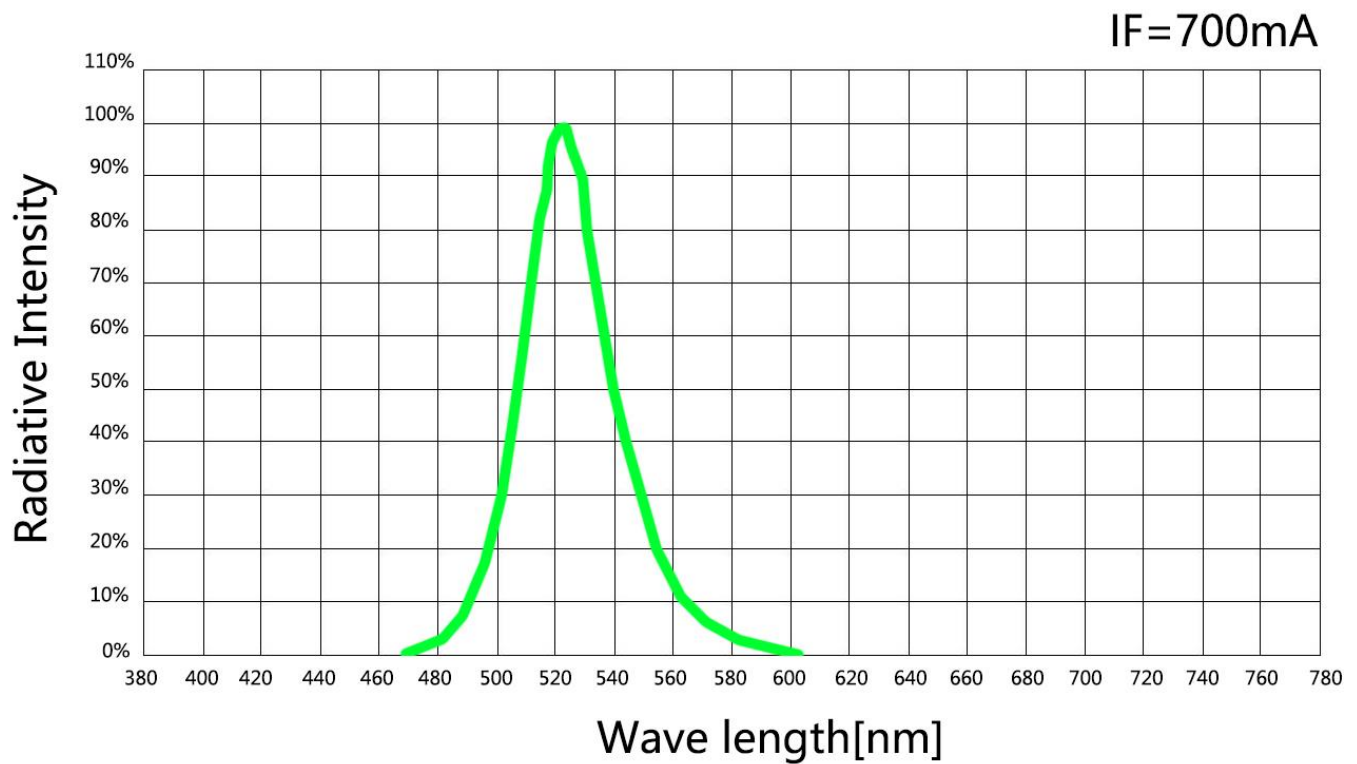
Forward Voltage Tolerance: ± 0.1 V

## 5. Optical Character Curves

(Unless otherwise specified, all values are measured at 25 °C ambient temperature)



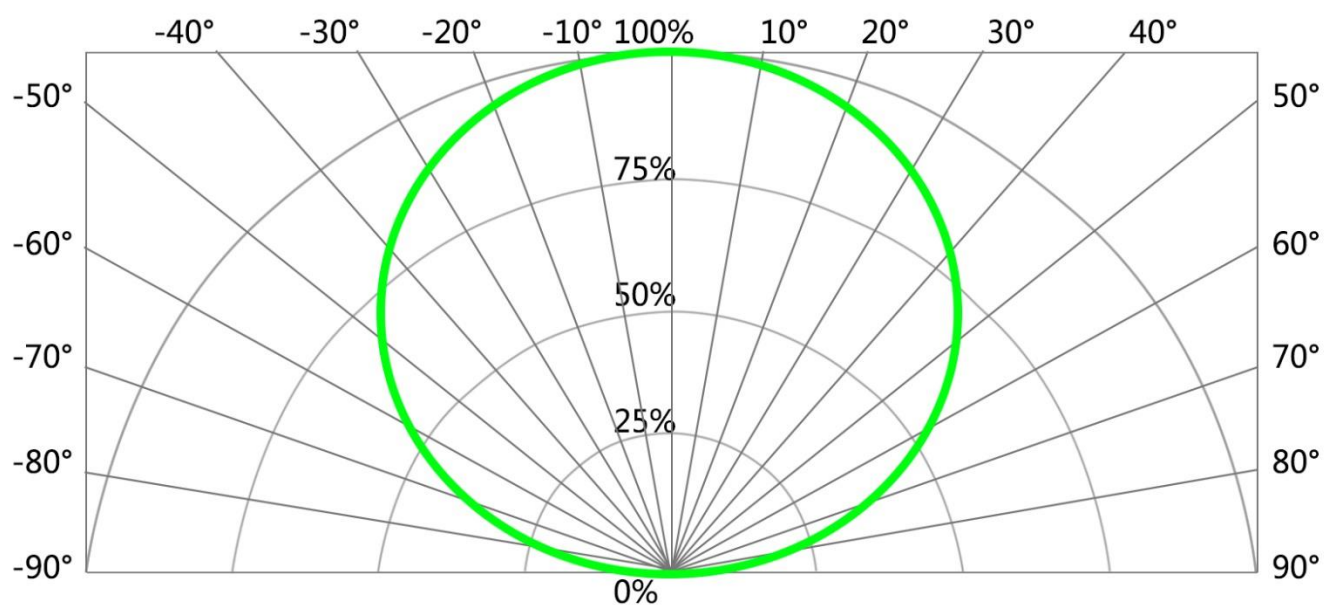
## 6. Spectrum Curves



## 7. Viewing Angle Curves

Radiation Characteristic

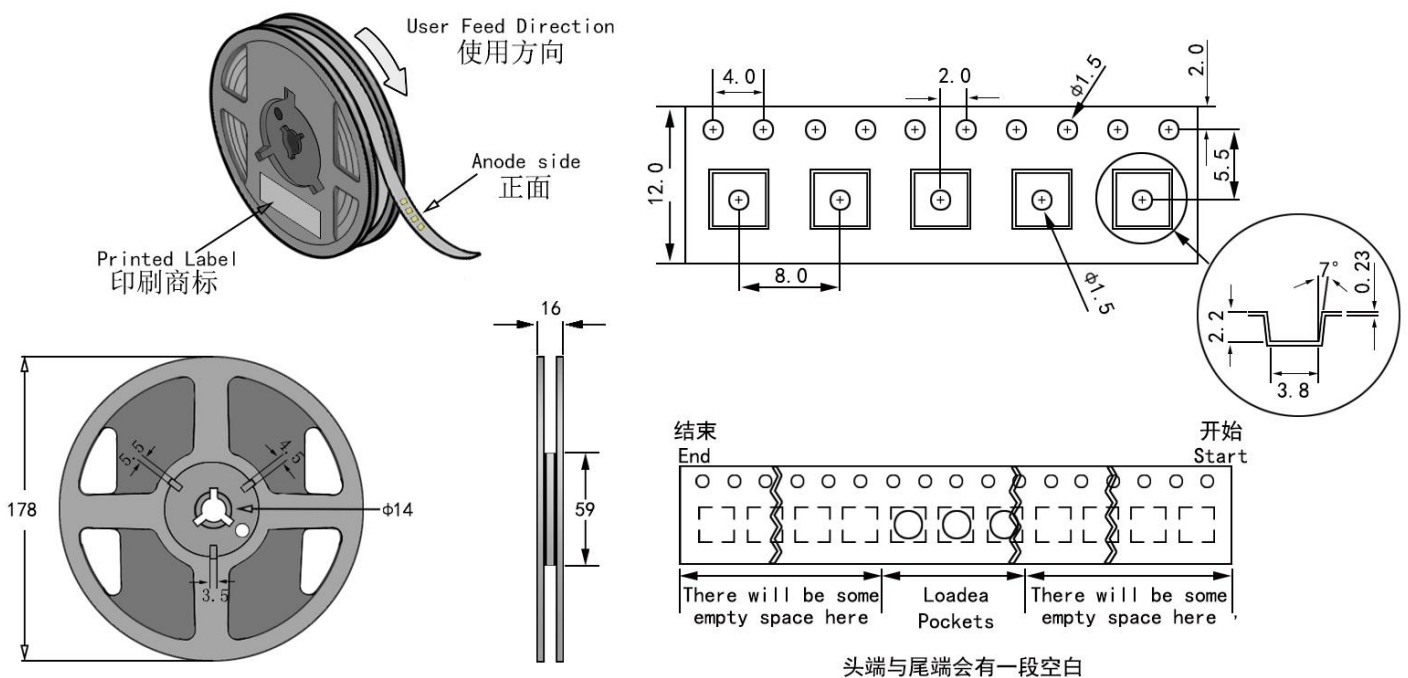
IF=700mA



## 8. Storage & Packaging

### Storage & Handling Instructions for Unpacked LED Beads:

1. Immediate Use: Unpacked LED beads are recommended to be soldered within one day.
2. Short-Term Storage (Within 1 week): If not used immediately, re-vacuum seal and store in an environment with a temperature of 20-35 °C and 30-60% relative humidity. If re-vacuum sealing is not possible, store the LED beads in a moisture-proof box, maintaining 25±3 °C and 50-60% humidity.
3. Long-Term Storage / Moisture Exposure: If unpacked for more than one week, bake the LED beads at 60±5 °C for 10-12 hours prior to soldering.

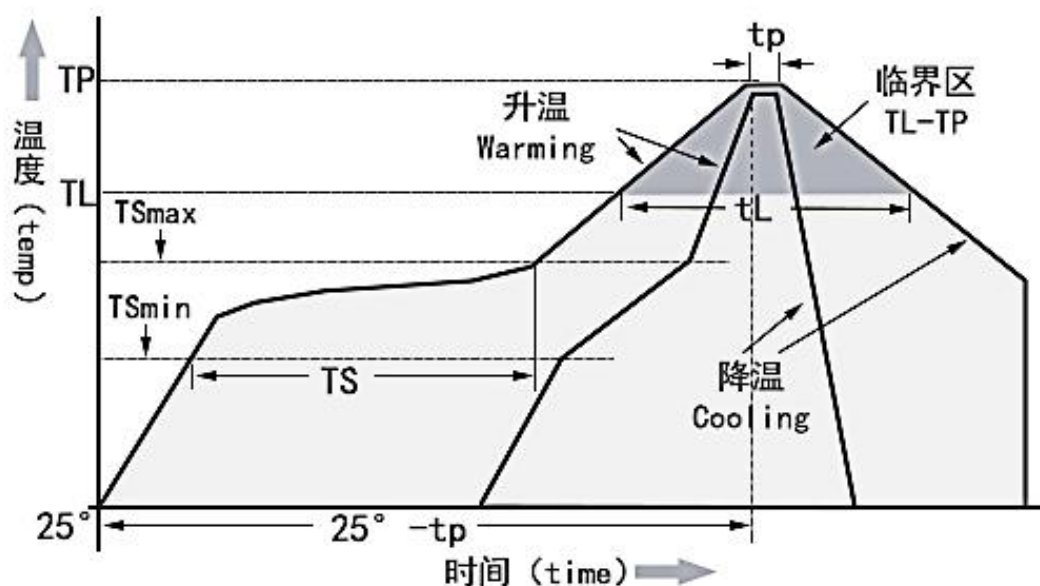


### Notes:

1. Quantity: 1000pcs/Reel
2. Dimensions in millimeters (mm)
3. Dimension Tolerance: ± 0.2 mm

## 9. Soldering Instructions

Avoid touching the LED encapsulant during soldering to prevent damage. For reflow soldering, refer to the provided temperature profile and follow the solder paste manufacturer's recommendations.



| Temperature Curve Character                     | Lead-free solder                 |
|-------------------------------------------------|----------------------------------|
| Average heating rate (TSmin to Tp)              | 最高 3°C/秒<br>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                                   | 最高 6°C/秒<br>The highest 6 °C / s |
| Time to reach peak temperature at 25°C          | 最多 8 分钟<br>8 minutes Max         |

## 10. Important Considerations

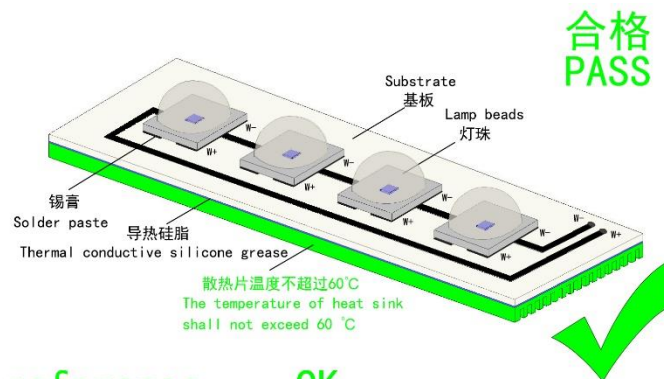
### 1. ESD Handling Precautions

Implement comprehensive ESD protection measures (e.g., anti-static wrist straps, ESD-safe apparel, grounded equipment and machinery).



### 2. Thermal Management

Crucial for performance and reliability, proper heat dissipation is essential for LED chips. It is recommended to maintain its operating temperature within the ideal range of 40-60 °C.



### 3. Processing Guidelines

reference

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Avoid applying any pressure directly on the LED encapsulant during use. When using automated pick-and-place equipment, select a suction nozzle of appropriate size to prevent damage. Refer to the images below for guidance.

