

## Features

- High current operation for greater luminous output
- Low power consumption and thermal resistance
- Can be used with automatic insertion equipment
- RoHS Compliant



## Benefits:

- Rugged design allows for easy maintenance
- Robust package for optimum reliability

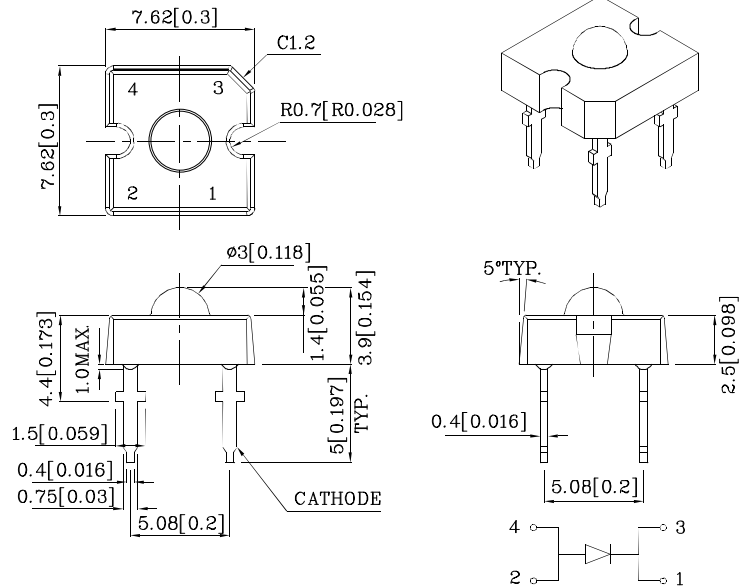
## Typical Applications:

- Automotive side markers
- Gaming and entertainment lighting
- Signs and road hazard indicators



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

## Package Schematics



### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25(0.01)$ " unless otherwise noted.
3. Specifications are subject to change without notice.

| Absolute Maximum Ratings<br>(T <sub>A</sub> =25°C)         |                  | Green<br>(InGaN)    | Unit |
|------------------------------------------------------------|------------------|---------------------|------|
| Reverse Voltage                                            | V <sub>R</sub>   | 5                   | V    |
| DC Forward Current                                         | I <sub>F</sub>   | 30                  | mA   |
| Power Dissipation                                          | P <sub>D</sub>   | 123                 | mW   |
| Operating Temperature                                      | T <sub>A</sub>   | -40 ~ +85           | °C   |
| Storage Temperature                                        | T <sub>stg</sub> | -55 ~ +85           |      |
| Electrostatic Discharge Threshold<br>(HBM)                 |                  | 450                 | V    |
| Lead Solder Temperature<br>[1.5mm Below Seating Plane.][1] |                  | 260°C For 5 Seconds |      |

| Operating Characteristics<br>(T <sub>A</sub> =25°C)                             |                | Green<br>(InGaN) | Unit |
|---------------------------------------------------------------------------------|----------------|------------------|------|
| Forward Voltage (Typ.) (I <sub>F</sub> =30mA)                                   | V <sub>F</sub> | 3.3              | V    |
| Forward Voltage (Max.) (I <sub>F</sub> =30mA)                                   | V <sub>F</sub> | 4.1              | V    |
| Reverse Current (Max.) (V <sub>R</sub> =5V)                                     | I <sub>R</sub> | 50               | uA   |
| Wavelength of Peak Emission<br>CIE127-2007*(Typ.)<br>(I <sub>F</sub> =30mA)     | λ <sub>P</sub> | 520*             | nm   |
| Wavelength of Dominant Emission<br>CIE127-2007*(Typ.)<br>(I <sub>F</sub> =30mA) | λ <sub>D</sub> | 525*             | nm   |
| Spectral Line Full Width At Half<br>Maximum (Typ.) (I <sub>F</sub> =30mA)       | Δλ             | 35               | nm   |
| Capacitance (Typ.) (V <sub>F</sub> =0V, f=1MHz)                                 | C              | 100              | pF   |
| Thermal Resistance (Typ.)                                                       | Rθj-pin        | 150              | °C/W |

- 1.No Reflow soldering .
- 2.A Relative Humidity between 40% and 60% is recommended in ESD-protected work areas to reduce static build up during assembly process (Reference JEDEC/JESD625-A and JEDEC/J-STD-033)

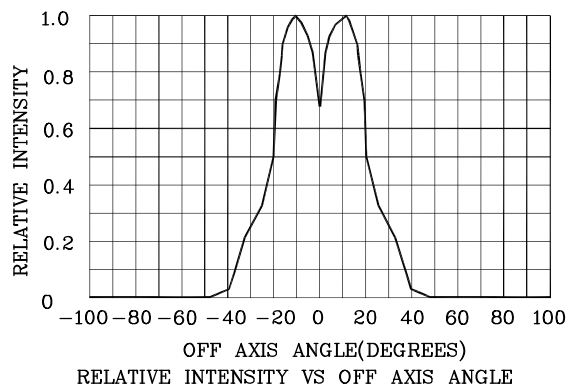
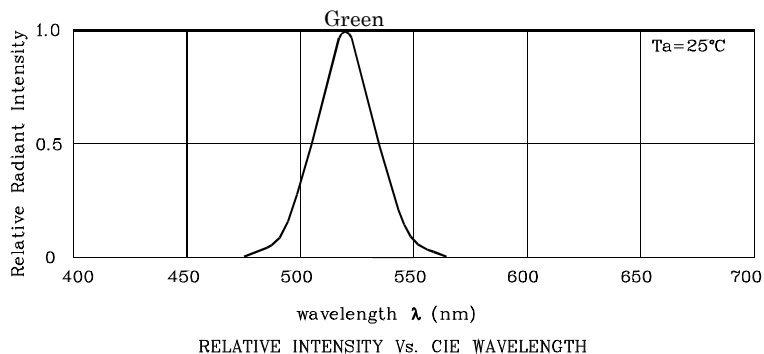
| Part<br>Number | Emitting<br>Color | Emitting<br>Material | Lens-color  | Luminous Intensity<br>CIE127-2007*<br>(I <sub>F</sub> =30mA) cd |       | Luminous Flux<br>CIE127-2007*<br>(I <sub>F</sub> =30mA) lm | Wavelength<br>CIE127-2007*<br>λ <sub>P</sub> nm | Viewing<br>Angle<br>2θ 1/2 |
|----------------|-------------------|----------------------|-------------|-----------------------------------------------------------------|-------|------------------------------------------------------------|-------------------------------------------------|----------------------------|
|                |                   |                      |             | min.                                                            | typ.  | typ.                                                       |                                                 |                            |
| XSM2DG983W     | Green             | InGaN                | Water Clear | 3.6*                                                            | 5.99* | 6.3*                                                       | 520*                                            | 40°                        |

1.Luminous intensity is measured with an integrating sphere after the device has stabilized.

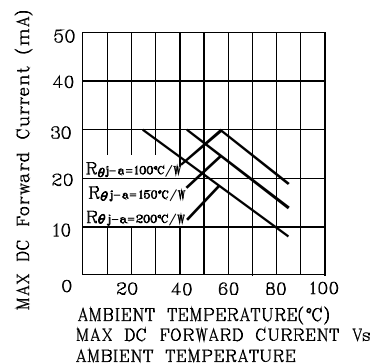
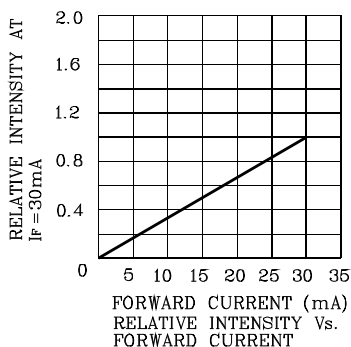
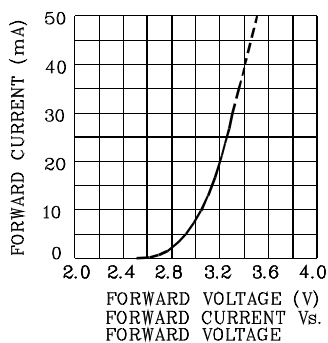
2.θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.

3.LEDs are binned according to their Luminous intensity.

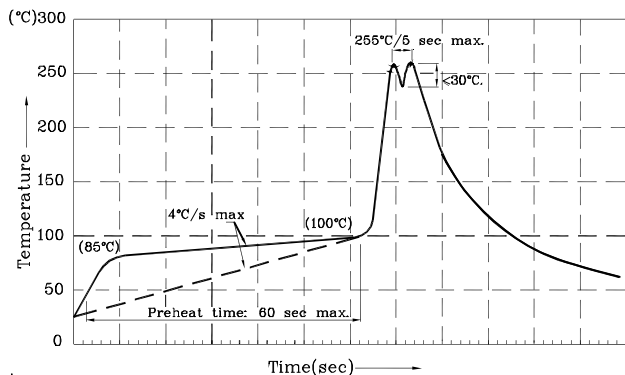
\* Luminous intensity / luminous flux value and wavelength are in accordance with CIE127-2007 standards.



### ❖ Green



### Wave Soldering Profile For Thru-Hole Products (Pb-Free Components)



#### Notes:

1. Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
2. Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85°C.
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
6. No more than one wave soldering pass.

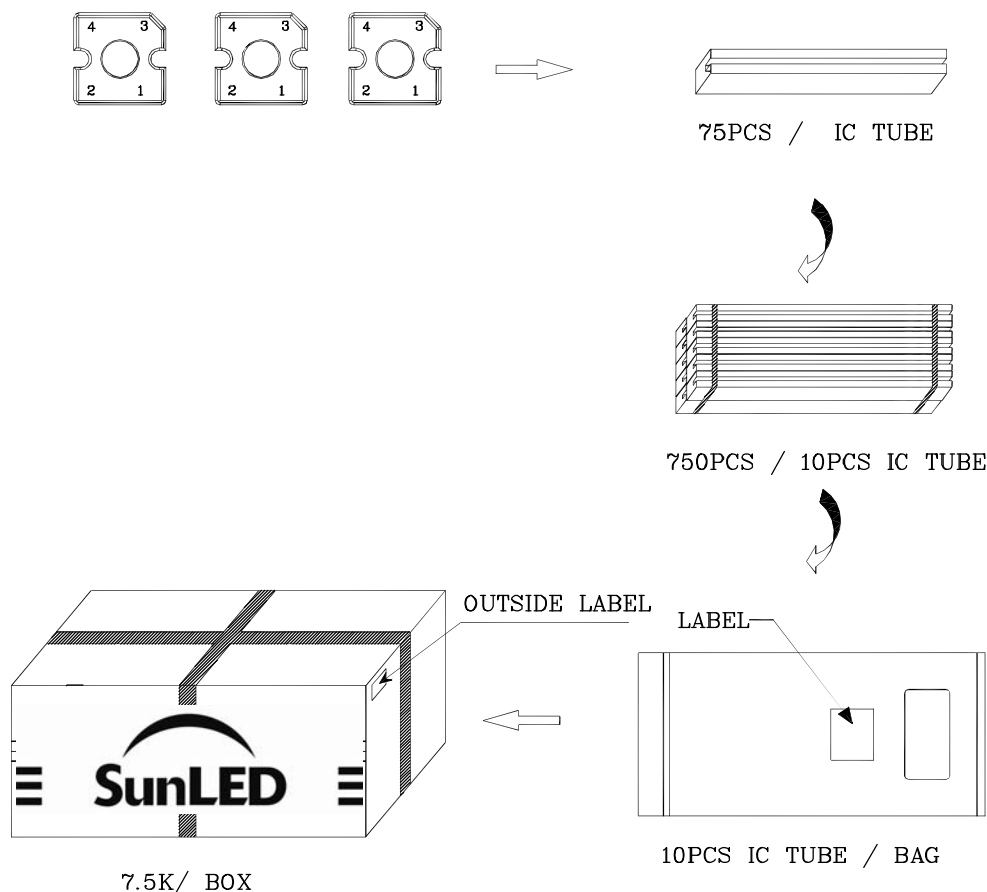
#### Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity / luminous flux, or wavelength), the typical accuracy of the sorting process is as follows:

1. Wavelength:  $\pm 1\text{nm}$
2. Luminous Intensity / Luminous Flux:  $\pm 15\%$
3. Forward Voltage:  $\pm 0.1\text{V}$

Note: Accuracy may depend on the sorting parameters.

## PACKING & LABEL SPECIFICATIONS



|                                                                                                                  |  |                                  |
|------------------------------------------------------------------------------------------------------------------|--|----------------------------------|
|                              |  | Q.C. Q.C<br>XX XX XXXX<br>PASSED |
| P/NO : XSxxx983x                                                                                                 |  |                                  |
| QTY : 750 pcs                                                                                                    |  | CODE: XXX                        |
| S/N : XX                                                                                                         |  |                                  |
| LOT NO:                                                                                                          |  |                                  |
| <br>XXXXXXXXXXXXXXXXXXXXXXXX |  |                                  |
| RoHS Compliant                                                                                                   |  |                                  |

## TERMS OF USE

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2. Contents within this document are subject to improvement and enhancement changes without notice.
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