

SMD ■ Technical Data Sheet EAHP5630RA0



Features

- Top view LED
- High luminous flux output
- High current capability
- White package
- Wide viewing angle
- Pb-free
- The product itself will remain within RoHS compliant version.
- Precondition: Bases on JEDEC J-STD 020D Level 3

Descriptions

Due to the package design, EAHP5630RA0 has wide viewing angle. This feature makes the LED ideal for light guide application.

Applications

- Decorative and Entertainment Lighting.
- Light pipe application
- Indicator and backlight in office and family equipment
- General use

Device Selection Guide

| Chip Materials | Emitted Color | Resin Color |
|----------------|---------------|-------------|
| AlGaInP | Super Red | Water Clear |

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|---|---------------|---|------|
| Reverse Voltage | V_R | 12 | V |
| Forward Current | I_F | 150 | mA |
| Peak Forward Current (Duty 1/10 @1KHz) | I_{FP} | 300 | mA |
| Power Dissipation | P_d | 500 | mW |
| Junction Temperature | T_j | 125 | °C |
| Operating Temperature | T_{opr} | -40 ~ +85 | °C |
| Storage Temperature | T_{stg} | -40 ~ +90 | °C |
| Thermal Resistance | $R_{th\ J-A}$ | 150 | K/W |
| | $R_{th\ J-S}$ | 100 | K/W |
| ESD (Classification acc. AEC Q101) | ESD_{HBM} | 2000 | V |
| | ESD_{MM} | 200 | V |
| Soldering Temperature | T_{sol} | Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec. | |

Electro-Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|-------------------|-------|-------|-------|------|-----------------------|
| Luminous Intensity | I _v | 2850 | ----- | 5700 | mcd | I _F =150mA |
| Viewing Angle | 2θ _{1/2} | ----- | 120 | ----- | deg | I _F =150mA |
| Peak Wavelength | λ _p | ----- | 639 | ----- | nm | I _F =150mA |
| Dominant Wavelength | λ _d | 620 | ----- | 632 | nm | I _F =150mA |
| Spectrum Radiation Bandwidth | Δλ | ----- | 20 | ----- | nm | I _F =150mA |
| Forward Voltage | V _F | 1.7 | ----- | 2.7 | V | I _F =150mA |
| Reverse Current | I _R | ----- | ----- | 10 | μA | V _R =12V |

Note:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

Bin Range of Luminous Intensity

| Bin Code | Min. | Max. | Unit | Condition |
|----------|------|------|------|-----------------------|
| Y1 | 2850 | 3600 | mcd | I _F =150mA |
| Y2 | 3600 | 4500 | | |
| Z01 | 4500 | 5700 | | |

Note:

Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

| Bin Code | Min. | Max. | Unit | Condition |
|----------|------|------|------|-----------|
| R1 | 620 | 624 | nm | IF =150mA |
| R2 | 624 | 628 | | |
| R3 | 628 | 632 | | |

Note:

Tolerance of Dominant Wavelength: ±1nm

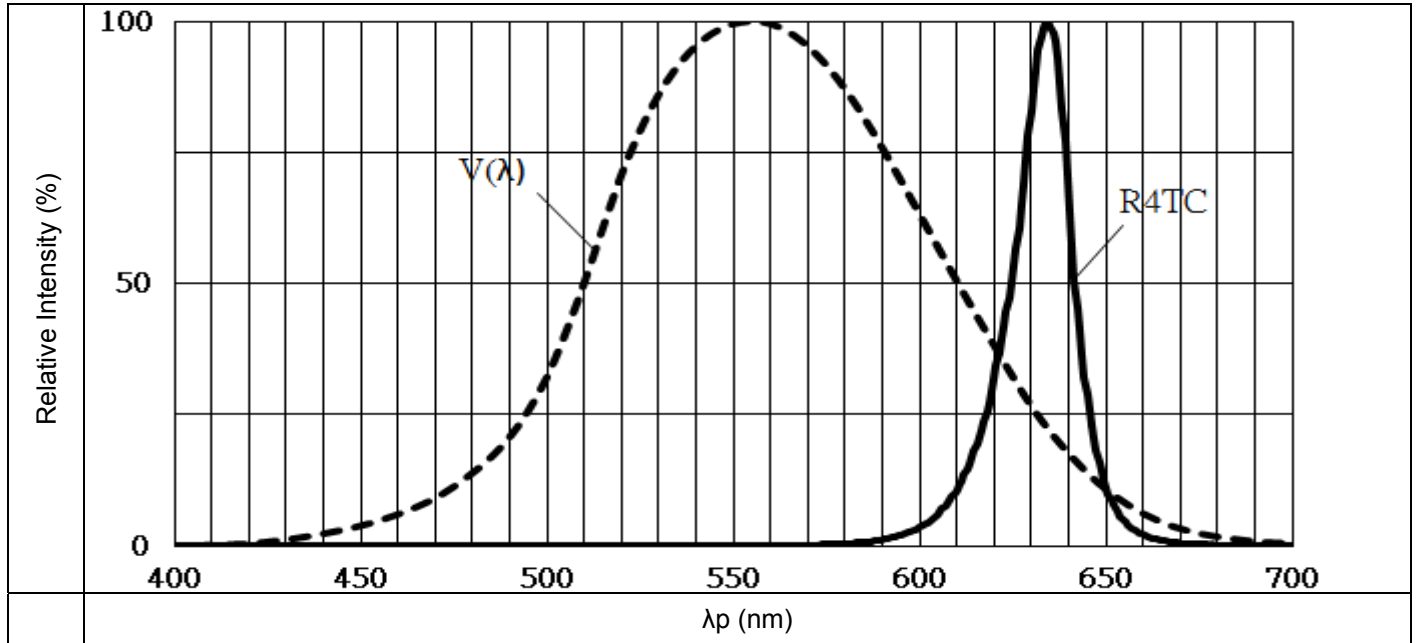
Bin Range of Forward Voltage

| Bin Code | Min. | Max. | Unit | Condition |
|----------|------|------|------|-----------|
| B1 | 1.70 | 1.95 | V | IF =150mA |
| B2 | 1.95 | 2.20 | | |
| B3 | 2.20 | 2.45 | | |
| B4 | 2.45 | 2.70 | | |

Note:
Tolerance of Forward Voltage: $\pm 0.1V$

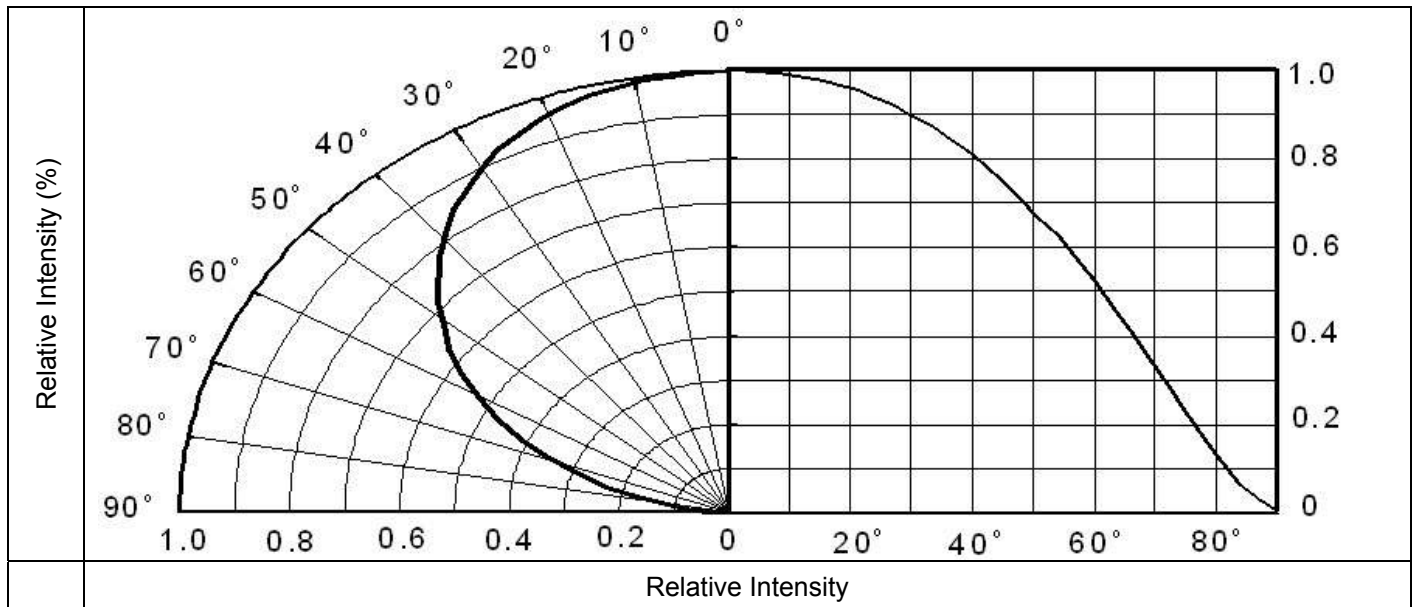
Typical Electro-Optical Characteristics Curves

Typical Curve of Spectral Distribution

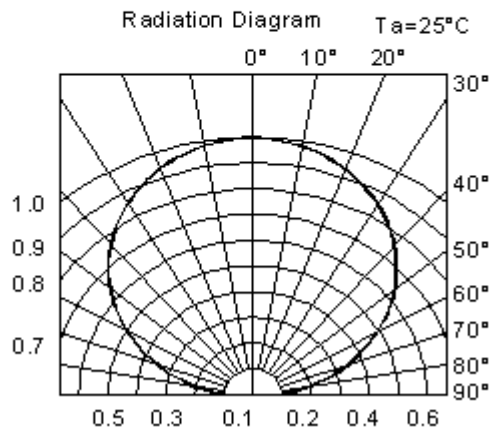
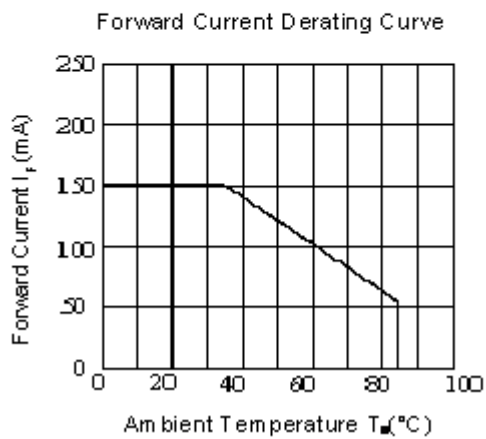
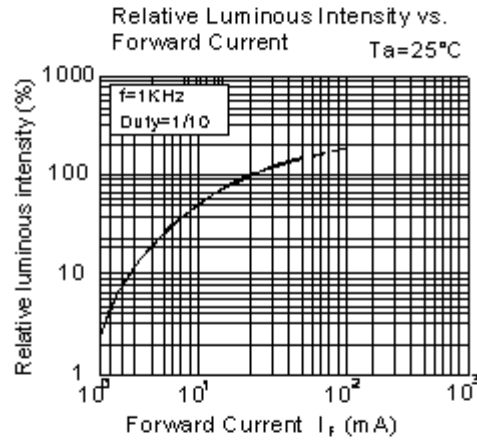
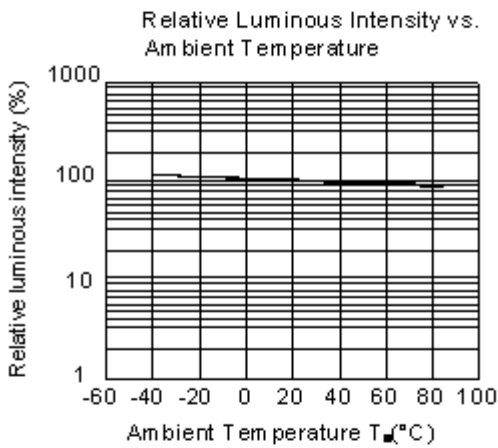
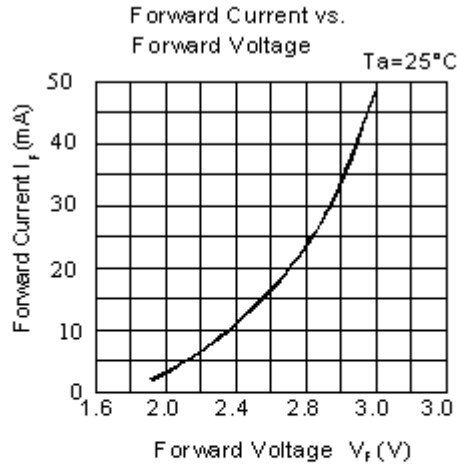
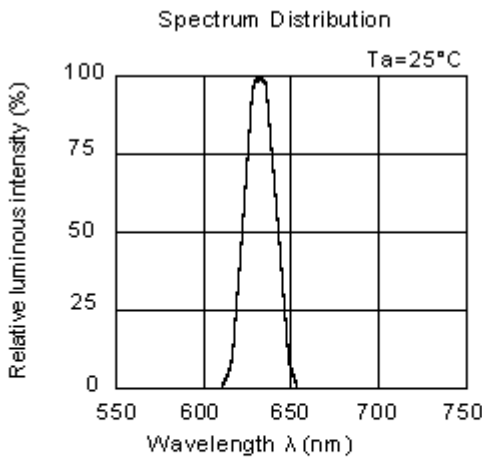


Note: $V(\lambda)$ =Standard eye response curve; $I_f = 150\text{mA}$

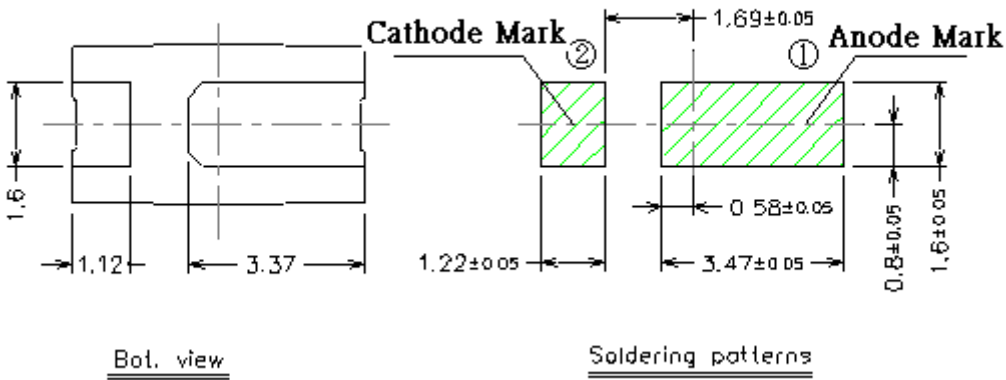
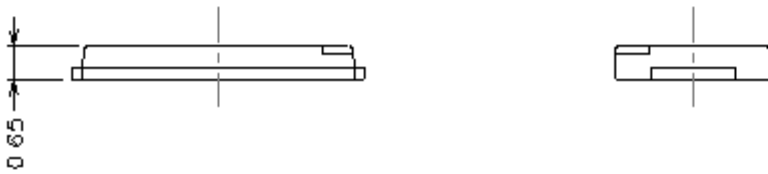
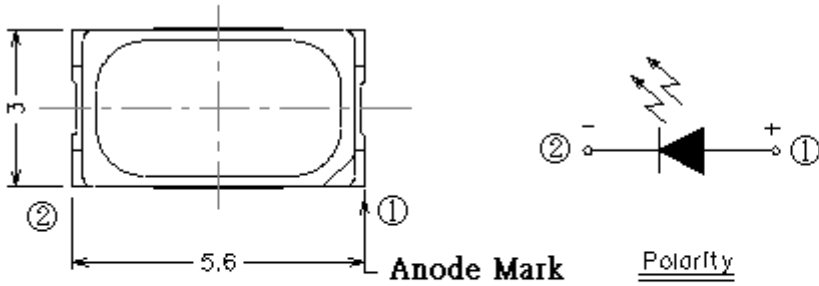
Diagram Characteristics of Radiation



Typical Curve of Spectral Distribution



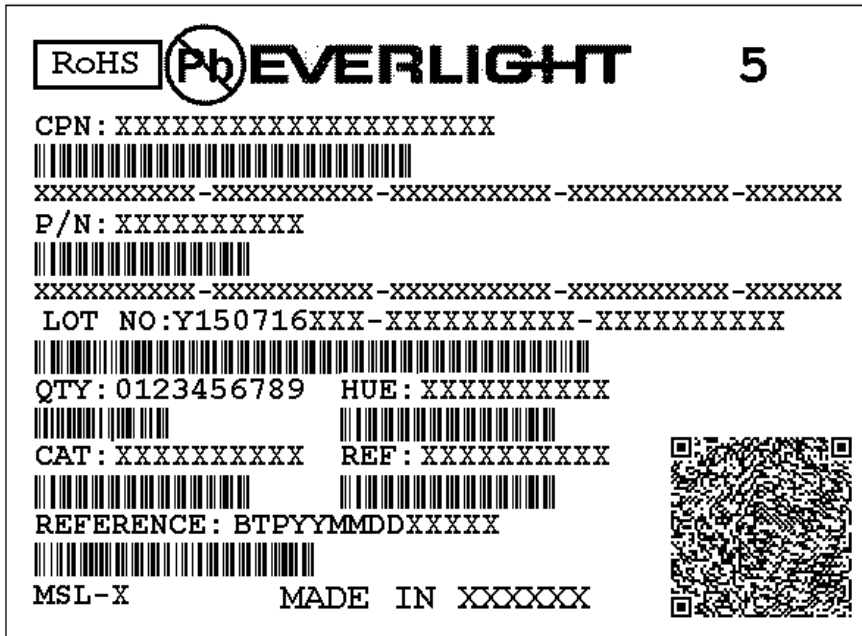
Package Dimension



Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

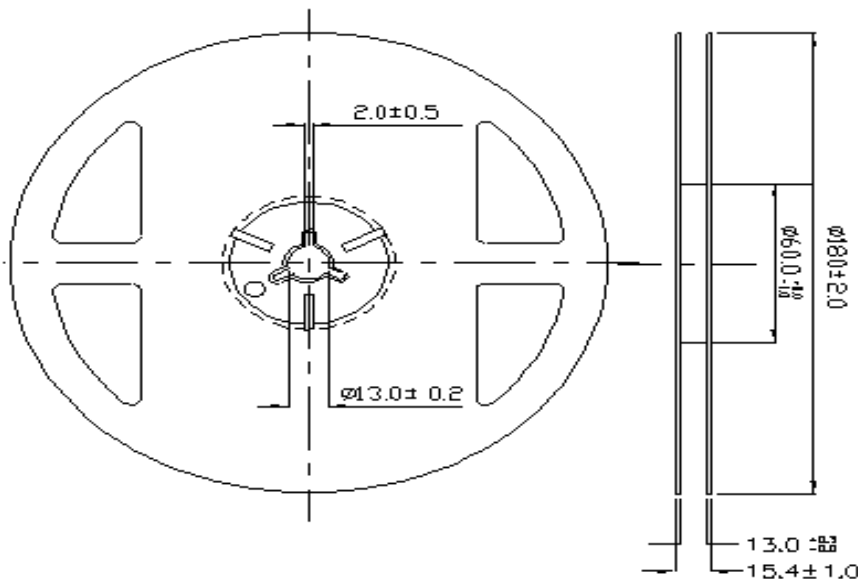
Moisture Resistant Packing Materials

Label Explanation

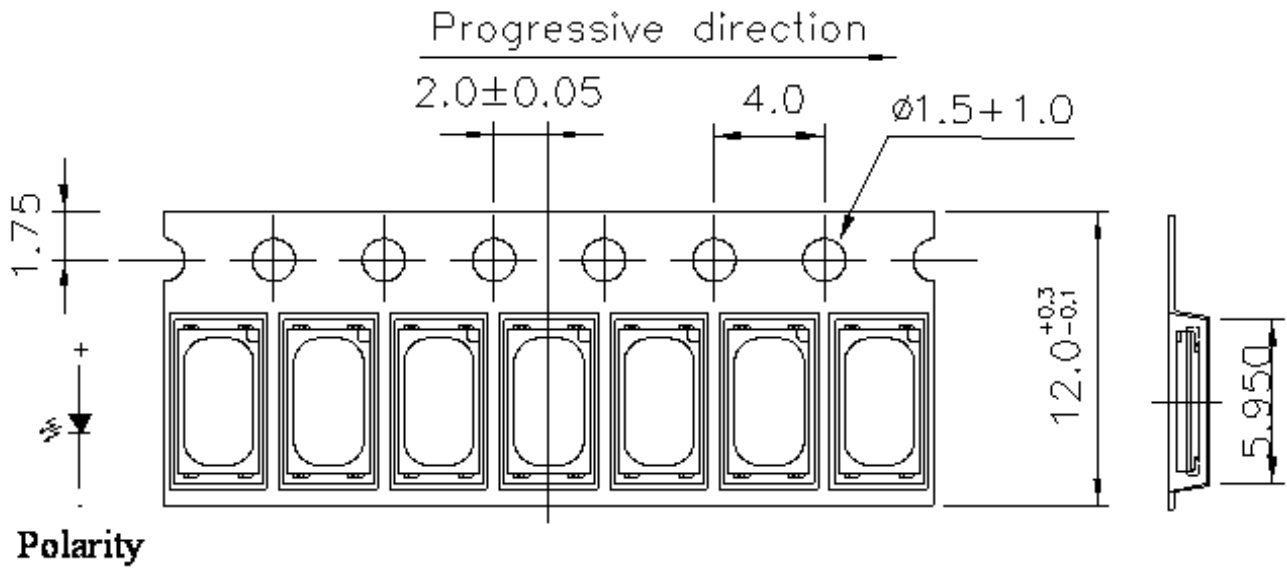


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions

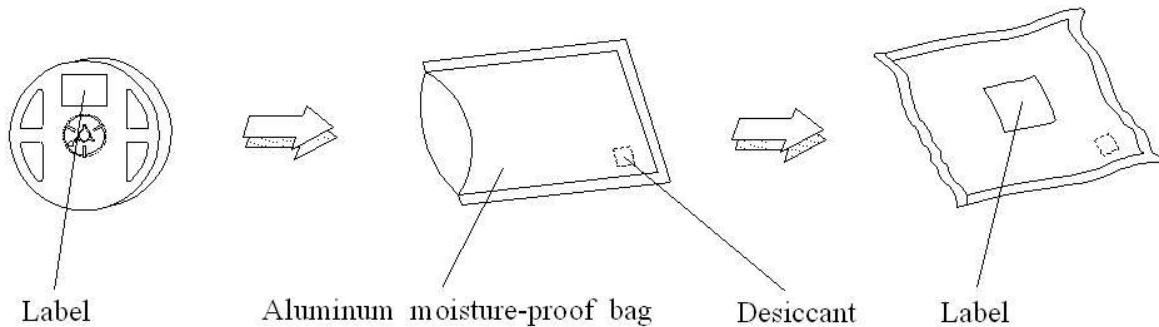


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

Moisture Resistant Packing Process

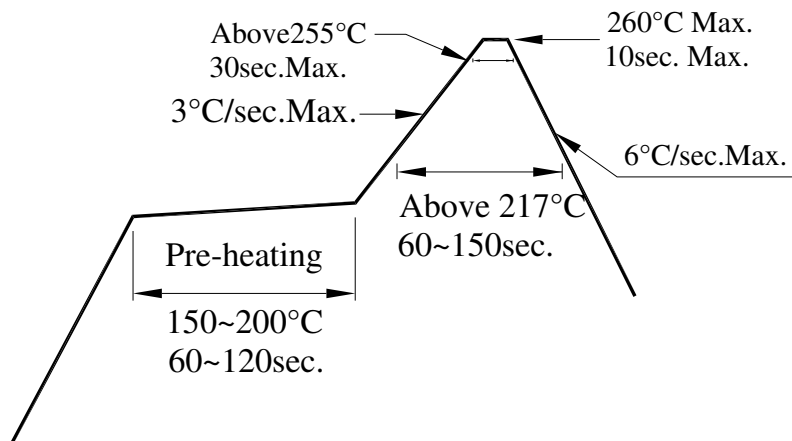


Note: Tolerances unless mentioned $\pm 0.1\text{mm}$. Unit = mm

Precautions for Use

1. Over-current-proof

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



2. Storage

2.1 Don't open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 72Hrs under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. baking treatment: $60\pm 5^\circ\text{C}$ for 24 hours

3. Soldering Condition

3.1 Pb-free solder temperature profile

3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less

than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

Application Restrictions

High reliability applications such as military/aerospace, automotive safety/security systems, and medical equipment may require different product. If you have any concerns, please contact Everlight before using this product in your application. This specification guarantees the quality and performance of the product as an individual component. Do not use this product beyond the specification described in this document.

Revision History

| Rev. | Modified date | File modified contents |
|------|---------------|------------------------|
| 1 | 2014/12/04 | New Spec |
| 2 | 2015/06/30 | Approved |
| 3 | 2016/01/28 | Correction Description |
| | | |