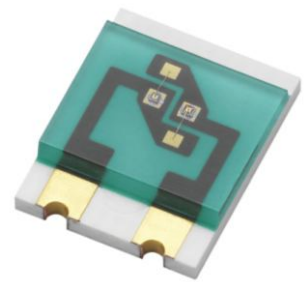


## IRR60-48C/L661/TR8

### Features

- Compatible with infrared and vapor phase reflow solder process.
- Compatible with automatic placement equipment.
- Bi-color LED wavelength. (660nm, 910nm)
- Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)
- Compliance with EU REACH
- This product itself will remain within RoHS compliant version.
- Package size : 6.0mm\*4.8mm\*1.1mm



### Description

- **IRR60-48C/L661/TR8** is an infrared emitting diode in miniature SMD package, which is molded in a water clear plastic with flat top view lens. The device is spectrally matched with silicon photodiode and phototransistor.

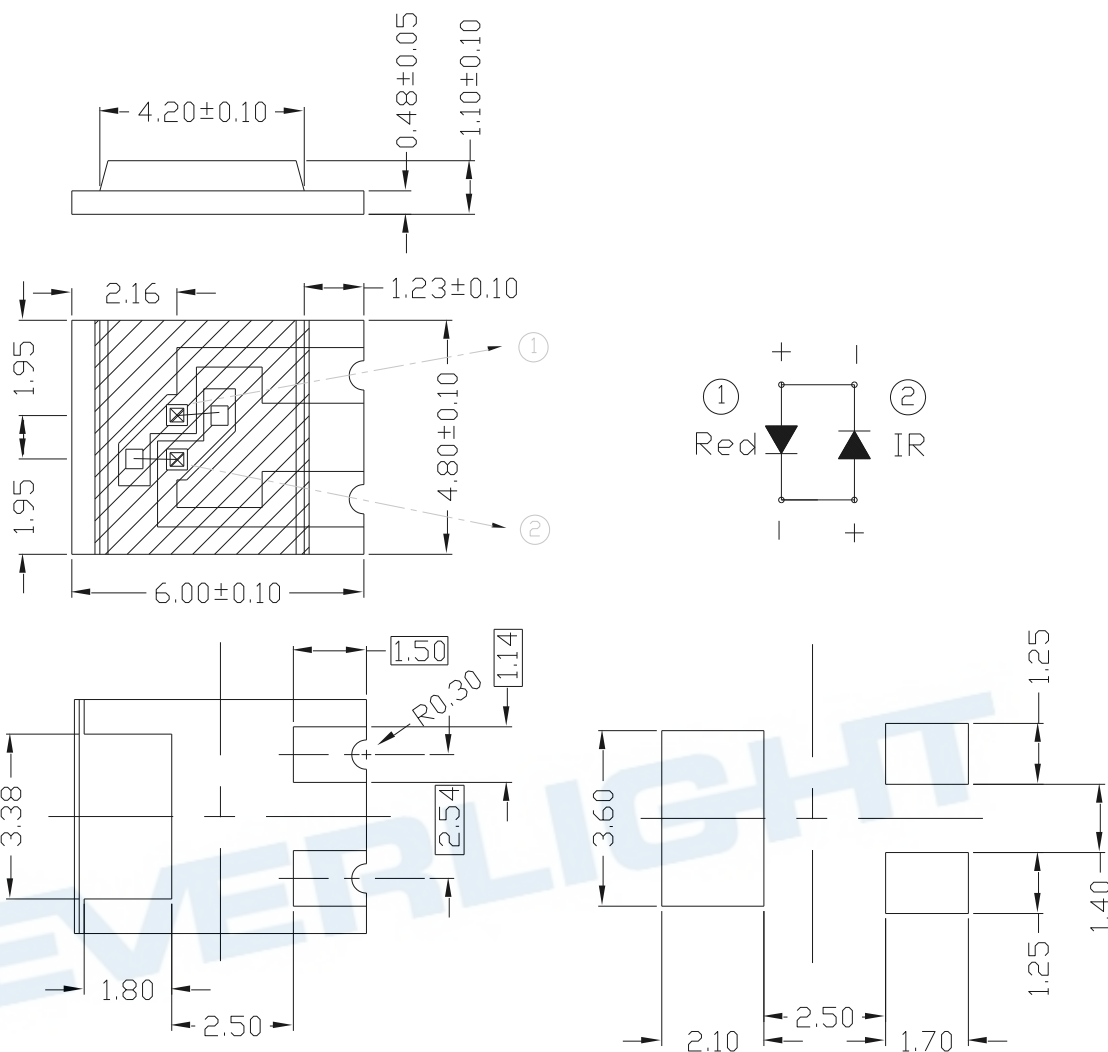
### Applications

- Sensor
- Oximeter

### Device Selection Guide

| Device No.         | Chip Material                     | Lens Color  |
|--------------------|-----------------------------------|-------------|
| IRR60-48C/L661/TR8 | AlGaInP (660nm)<br>AlGaAs (910nm) | Water clear |

## Package Dimensions



### Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions  $\pm 0.1$  mm

### Absolute Maximum Ratings (Ta=25°C)

| Parameter                                                   | Symbol             | Ratings    |           | Unit |
|-------------------------------------------------------------|--------------------|------------|-----------|------|
|                                                             |                    | 660nm(Red) | 910nm(IR) |      |
| Continuous Forward Current                                  | I <sub>F</sub>     | 30         |           | mA   |
| Peak Forward Current *1                                     | I <sub>FP</sub>    | 150        |           | mA   |
| Reverse Voltage                                             | V <sub>R</sub>     | 5          |           | V    |
| Operating Temperature                                       | T <sub>opr</sub>   | -25~ +85   |           | °C   |
| Storage Temperature                                         | T <sub>stg</sub>   | -25 ~ +85  |           | °C   |
| Soldering Temperature *2                                    | T <sub>sol</sub>   | 260        |           | °C   |
| Power Dissipation at(or below)<br>25°C Free Air Temperature | P <sub>d</sub>     | 70         | 50        | mW   |
| Temperature resistance junction ambient                     | R <sub>thj-a</sub> | 550        |           | K/W  |

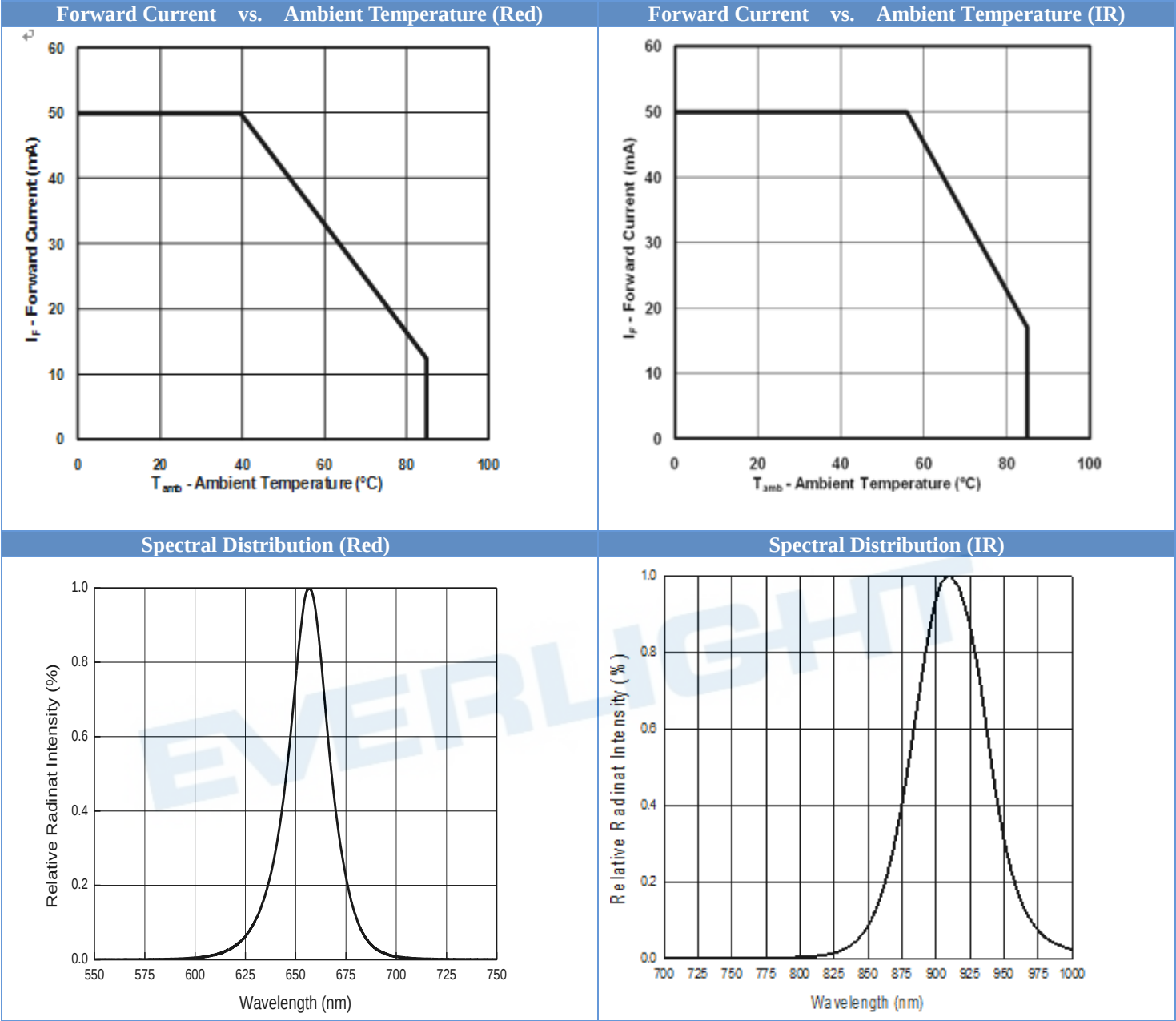
**Notes:** \*1:I<sub>FP</sub> Conditions--Pulse Width ≤ 10μ s and Duty ≤ 1%.

\*2:Soldering time ≤ 5 seconds.

### Electro-Optical Characteristics (Ta=25°C)

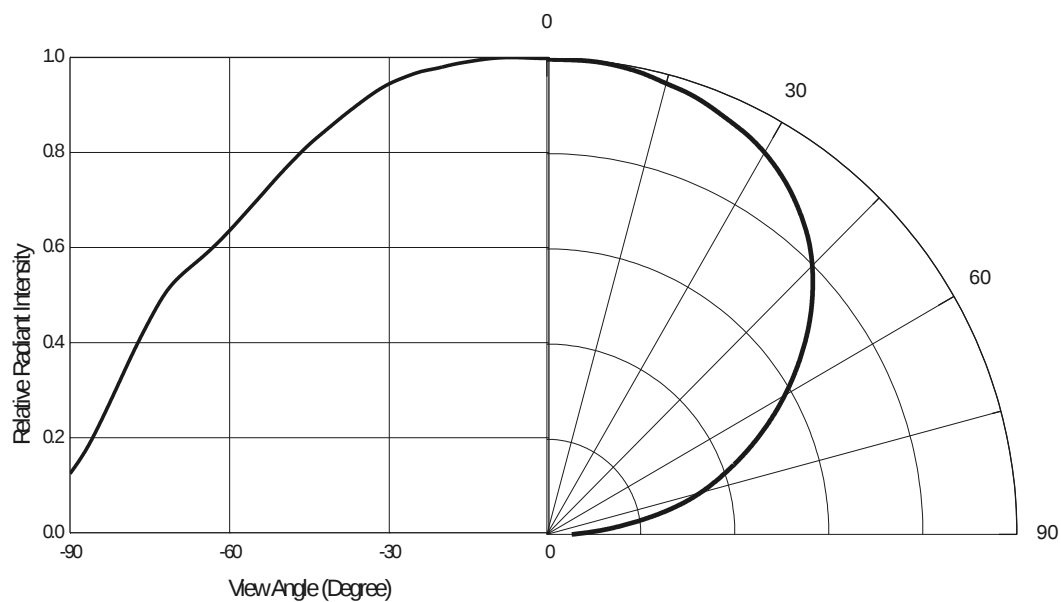
| Parameter                   | Symbol         |     | Condition            | Min. | Typ. | Max. | Unit   |
|-----------------------------|----------------|-----|----------------------|------|------|------|--------|
| <b>Radiant Intensity</b>    | I <sub>E</sub> | Red | I <sub>F</sub> =20mA | 1.0  | 2.3  | --   | mW /sr |
|                             |                | IR  |                      | 1.0  | 1.5  | --   |        |
| <b>Total Radiated Power</b> | P <sub>O</sub> | Red | I <sub>F</sub> =20mA | --   | 7.0  | --   | mW     |
|                             |                | IR  |                      | --   | 4.6  | --   |        |
| <b>Peak Wavelength</b>      | λ <sub>p</sub> | Red | I <sub>F</sub> =20mA | 657  | 660  | 663  | nm     |
|                             |                | IR  |                      | 900  | 910  | 920  |        |
| <b>Spectral Bandwidth</b>   | Δλ             | Red | I <sub>F</sub> =20mA | --   | 20   | --   | nm     |
|                             |                | IR  |                      | --   | 30   | --   |        |
| <b>Forward Voltage</b>      | V <sub>F</sub> | Red | I <sub>F</sub> =20mA | 1.80 | 2.10 | 2.50 | V      |
|                             |                | IR  |                      | 1.10 | 1.40 | 1.60 |        |
| <b>Reverse Current</b>      | I <sub>R</sub> | Red | V <sub>R</sub> =5V   | --   | --   | 10   | μ A    |
|                             |                | IR  |                      | --   | --   | 10   |        |
| <b>View Angle</b>           | 2θ 1/2         | Red | I <sub>F</sub> =20mA | --   | 140  | --   | deg    |
|                             |                | IR  |                      | --   | 130  | --   |        |

Typical Electro-Optical Characteristics Curves

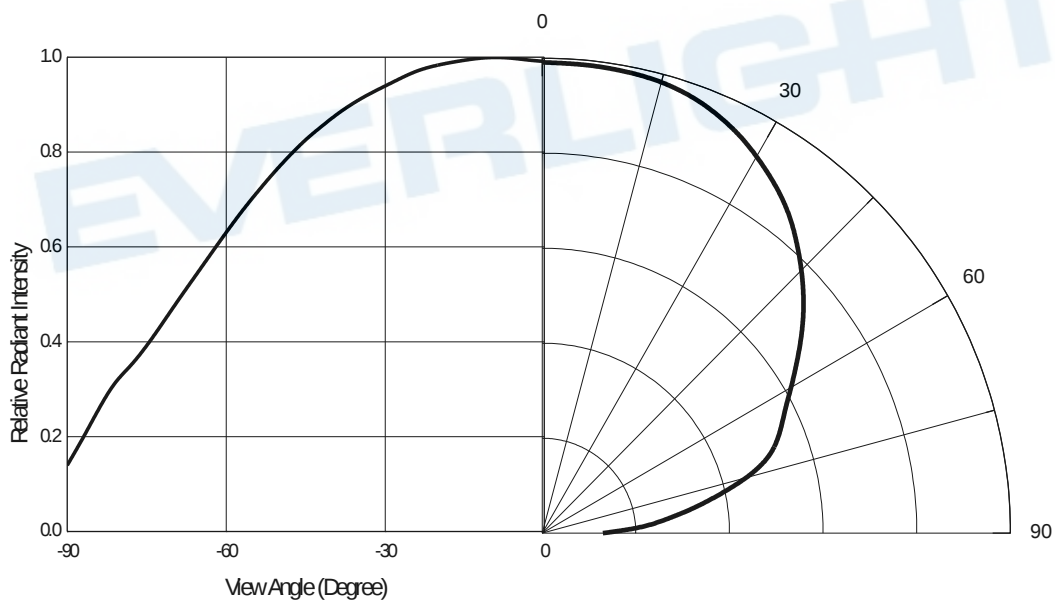


## Typical Electro-Optical Characteristics Curves

Relative Radiant Intensity vs. Angular Displacement (Red)



Relative Radiant Intensity vs. Angular Displacement (IR)



## Precautions For Use

### 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 Do not 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 The LEDs should be used within a year.

2.4 After opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.

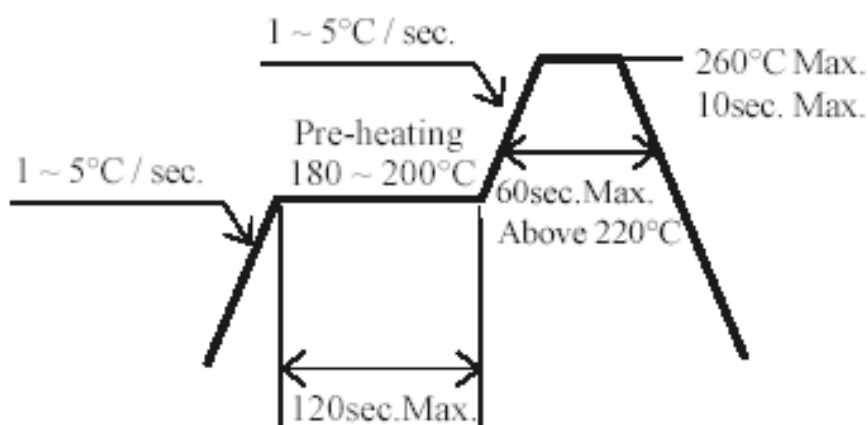
2.5 The LEDs should be used within 24 hours (1 days) after opening the package.

2.6 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±5°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.

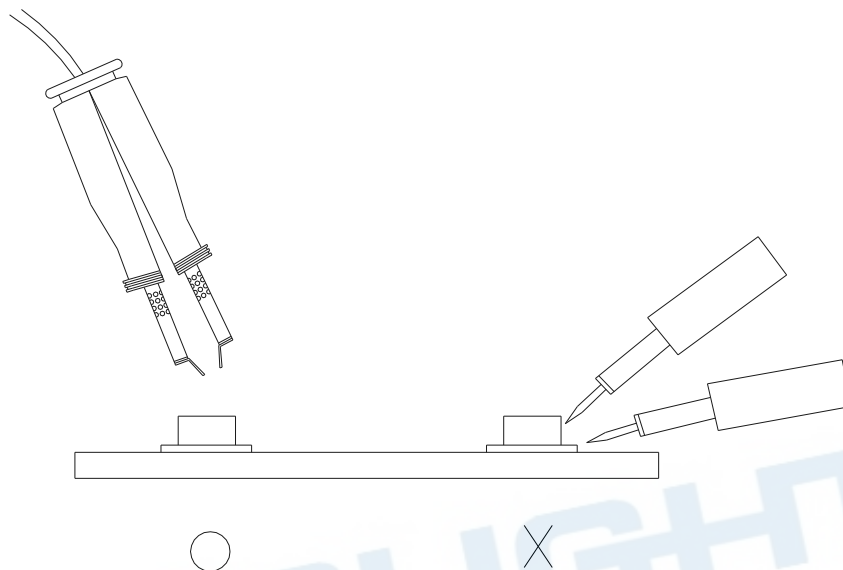
3.4 After soldering, do not warp the circuit board.

#### 4.Soldering Iron

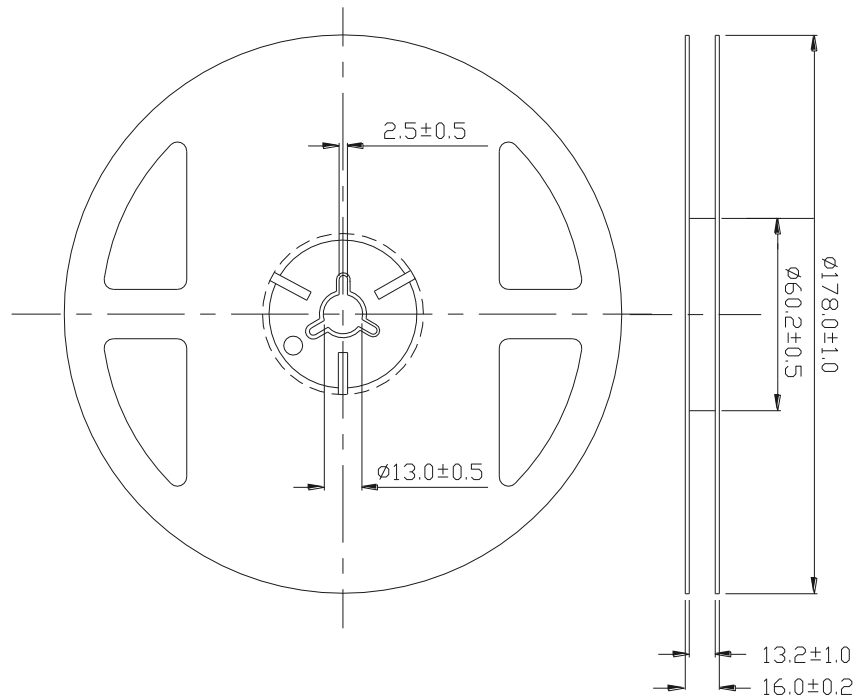
Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

#### 5.Repairing

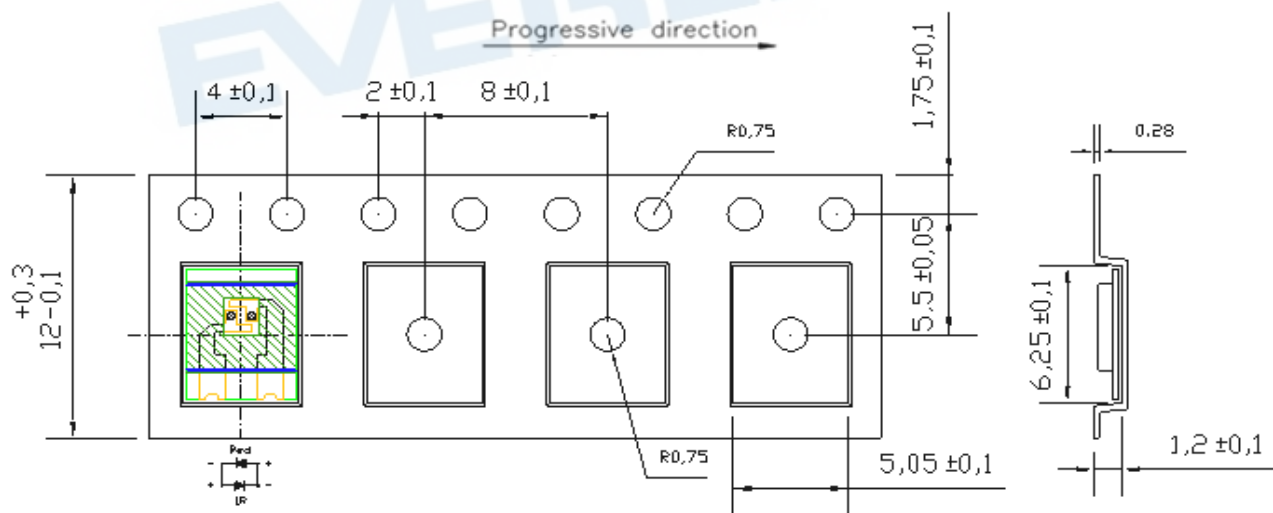
Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



## Package Dimensions

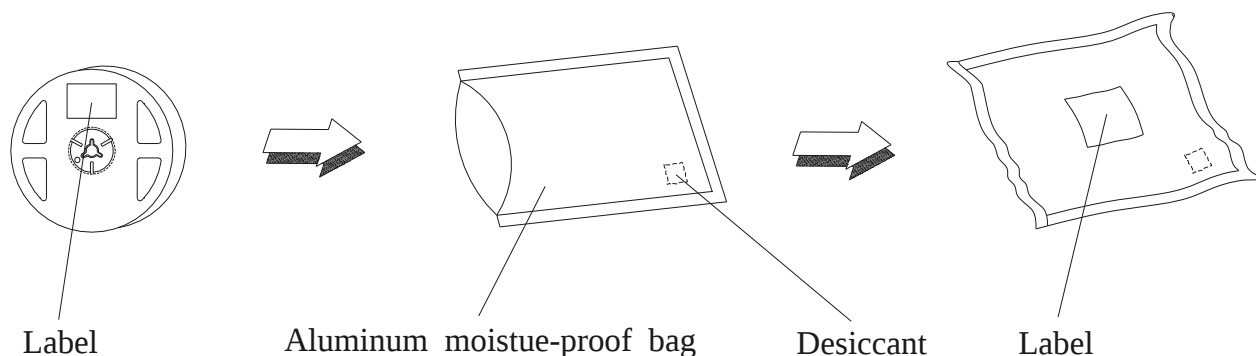


**Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel.**



**Note: 1. Dimensions are in millimeters**  
**2. The tolerances unless mentioned is  $\pm 0.1$ mm**

## Moisture Resistant Packaging



## Label Form Specification

The label form specification diagram shows a sample label with the following fields and a QR code:

- RoHS (Pb) EVERLIGHT X
- CPN: XXXXXXXXXXXXXXXXXXXX
- XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
- P/N: XXXXXXXXXXXX
- XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
- LOT NO: XXXXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX
- QTY: XXXXXXXXXXXX HUE: XXXXXXXXXXXX
- CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX
- REFERENCE: BTPYYMMDDXXXXX
- MSL-X MADE IN XXXXXX

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place

## DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
5. These specification sheets include materials protected under copyright of EVERLIGHT. Reproduction in any form is prohibited without obtaining EVERLIGHT's prior consent.
6. This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized Everlight sales agent for special application request.

EVERLIGHT