

### Power Top View LEDs with Lens 67-31EP6-URD1224DAFAZ5-ET0D-AM



#### Features

##### Lead (Pb) Free Product - RoHS Compliant

- P-LCC-3 package.
- Colored diffused resin.
- Wide viewing angle 60°.
- Inner reflector and white package.
- Qualification according to AEC-Q101 rev C.
- Soldering methods: IR reflow soldering.
- Compliance with EU REACH

#### Applications

- Backlight: LCD, switches, symbol, mobile phone and illuminated advertising.
- Ideal for coupling into light guides.
- Substitution of traditional light.
- General applications.
- Optical indicator.
- Automotive

## Device Selection Guide

| Chip Materials | Emitted Color  | Resin Color |
|----------------|----------------|-------------|
| AlGaInP        | Reddish Orange | Water Clear |

## Absolute Maximum Ratings (Ta=25 )

| Parameter                                 | Symbol        | Rating                             | Unit |
|-------------------------------------------|---------------|------------------------------------|------|
| Forward Current                           | $I_F$         | 70                                 | mA   |
| Peak Forward Current<br>(Duty 1/10 @1KHz) | $I_{FP}$      | 100                                | mA   |
| Power Dissipation                         | $P_d$         | 190                                | mW   |
| Junction Temperature                      | $T_j$         | 125                                |      |
| Operating Temperature                     | $T_{opr}$     | -40 ~ +100                         |      |
| Storage Temperature                       | $T_{stg}$     | -40 ~ +110                         |      |
| Thermal resistance                        | $R_{th\ J-A}$ | 500                                | K/W  |
|                                           | $R_{th\ J-S}$ | 300                                | K/W  |
| ESD<br>(Classification acc. AEC Q101)     | $ESD_{HBM}$   | 2000                               | V    |
|                                           | $ESD_{MM}$    | 200                                | V    |
| Soldering Temperature                     | $T_{sol}$     | Reflow Soldering : 260 for 30 sec. |      |
|                                           |               | Hand Soldering : 350 for 3 sec.    |      |

## Electro-Optical Characteristics (Ta=25 )

| Parameter           | Symbol          | Min. | Typ. | Max.  | Unit    | Condition    |
|---------------------|-----------------|------|------|-------|---------|--------------|
| Luminous Intensity  | $I_v$           | 4500 | ---  | 14400 | mcd     | $I_F = 50mA$ |
| Viewing Angle       | $2\theta_{1/2}$ | ---  | 60   | ---   | deg     |              |
| Dominant Wavelength | $\lambda_d$     | 612  | ---  | 624   | nm      |              |
| Forward Voltage     | $V_F$           | 1.7  | ---  | 2.6   | V       | $V_R = 12V$  |
| Reverse Current     | $I_R$           | ---  | ---  | 10    | $\mu A$ |              |

Note:

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

### Bin Range of Luminous Intensity

| Bin Code | Min.  | Max.  | Unit | Condition           |
|----------|-------|-------|------|---------------------|
| DA       | 4500  | 5600  | mcd  | $I_F = 50\text{mA}$ |
| DB       | 5600  | 7100  |      |                     |
| EA       | 7100  | 9000  |      |                     |
| EB       | 9000  | 11200 |      |                     |
| FA       | 11200 | 14400 |      |                     |

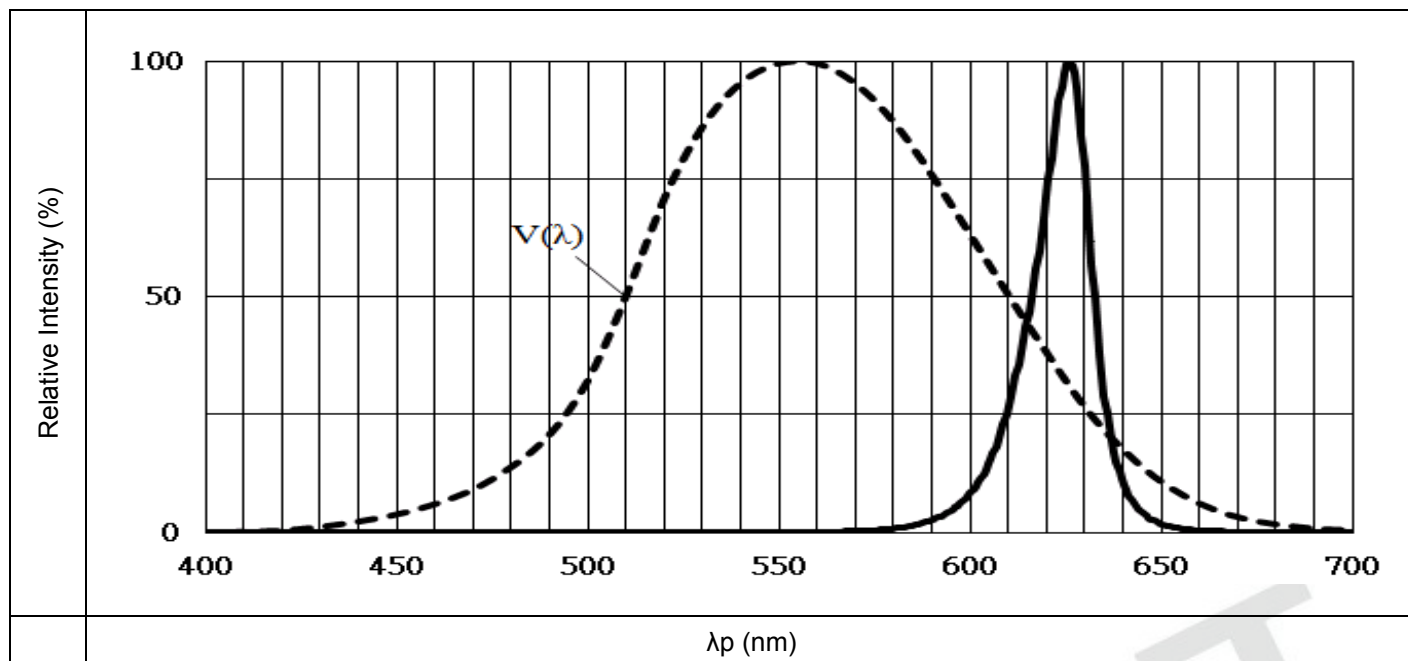
### Bin Range of Dominant Wavelength

| Bin Code | Min. | Max. | Unit | Condition           |
|----------|------|------|------|---------------------|
| KJ-1     | 612  | 615  | nm   | $I_F = 50\text{mA}$ |
| KJ-2     | 615  | 618  |      |                     |
| KJ-3     | 618  | 621  |      |                     |
| KJ-4     | 621  | 624  |      |                     |

EVERLIGHT

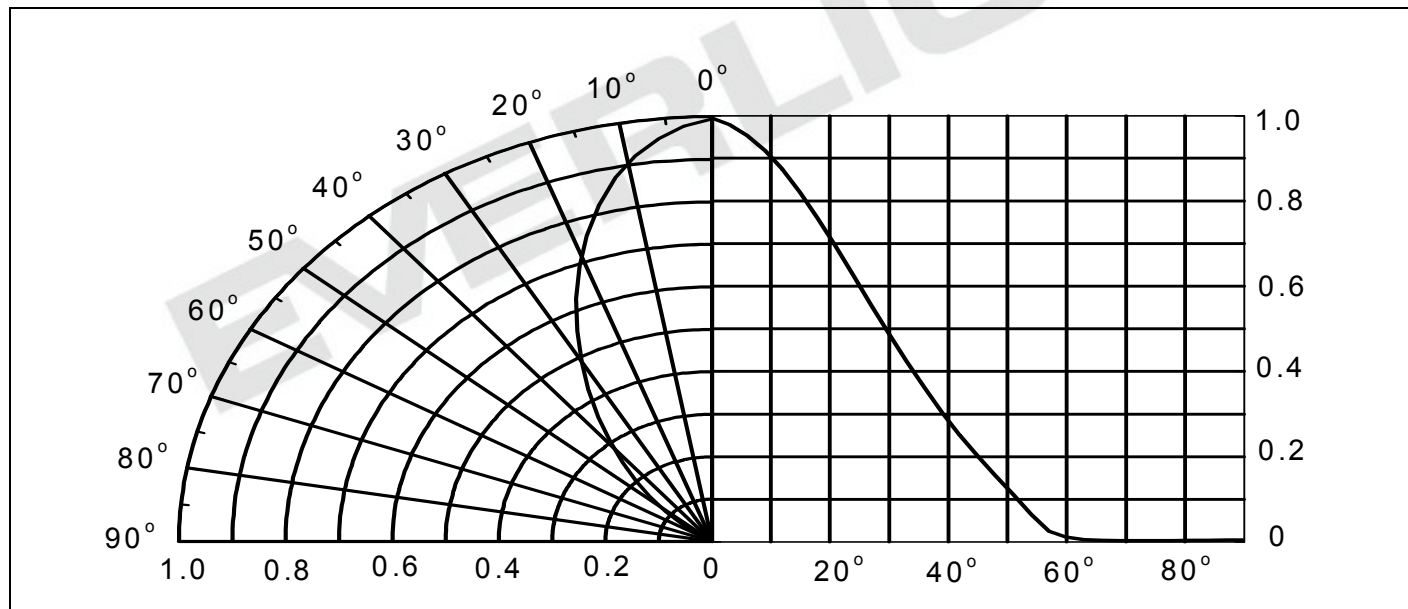
## Typical Electro-Optical Characteristics Curves

### Typical Curve of Spectral Distribution

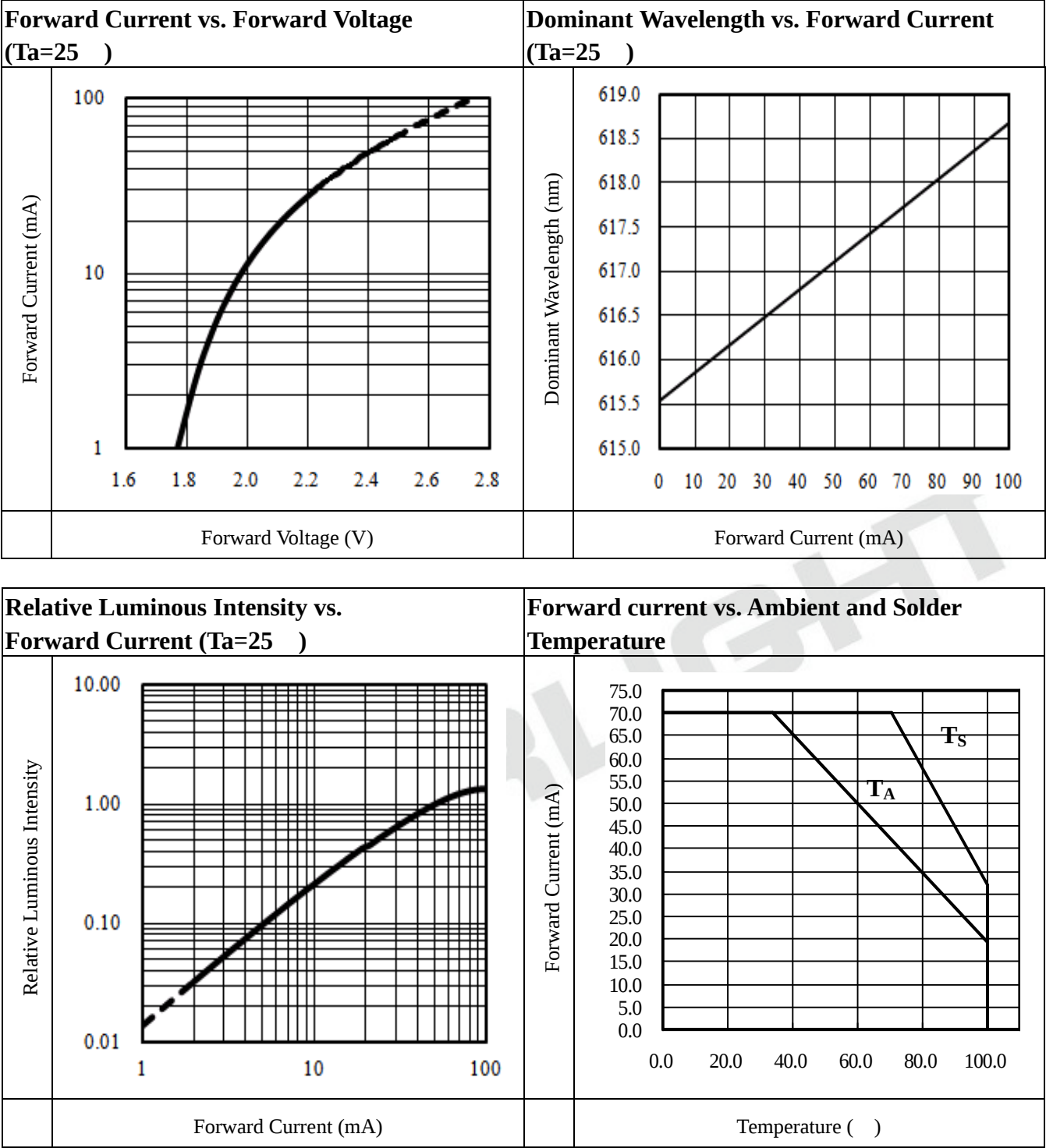


Note:  $V(\lambda)$ =Standard eye response curve;

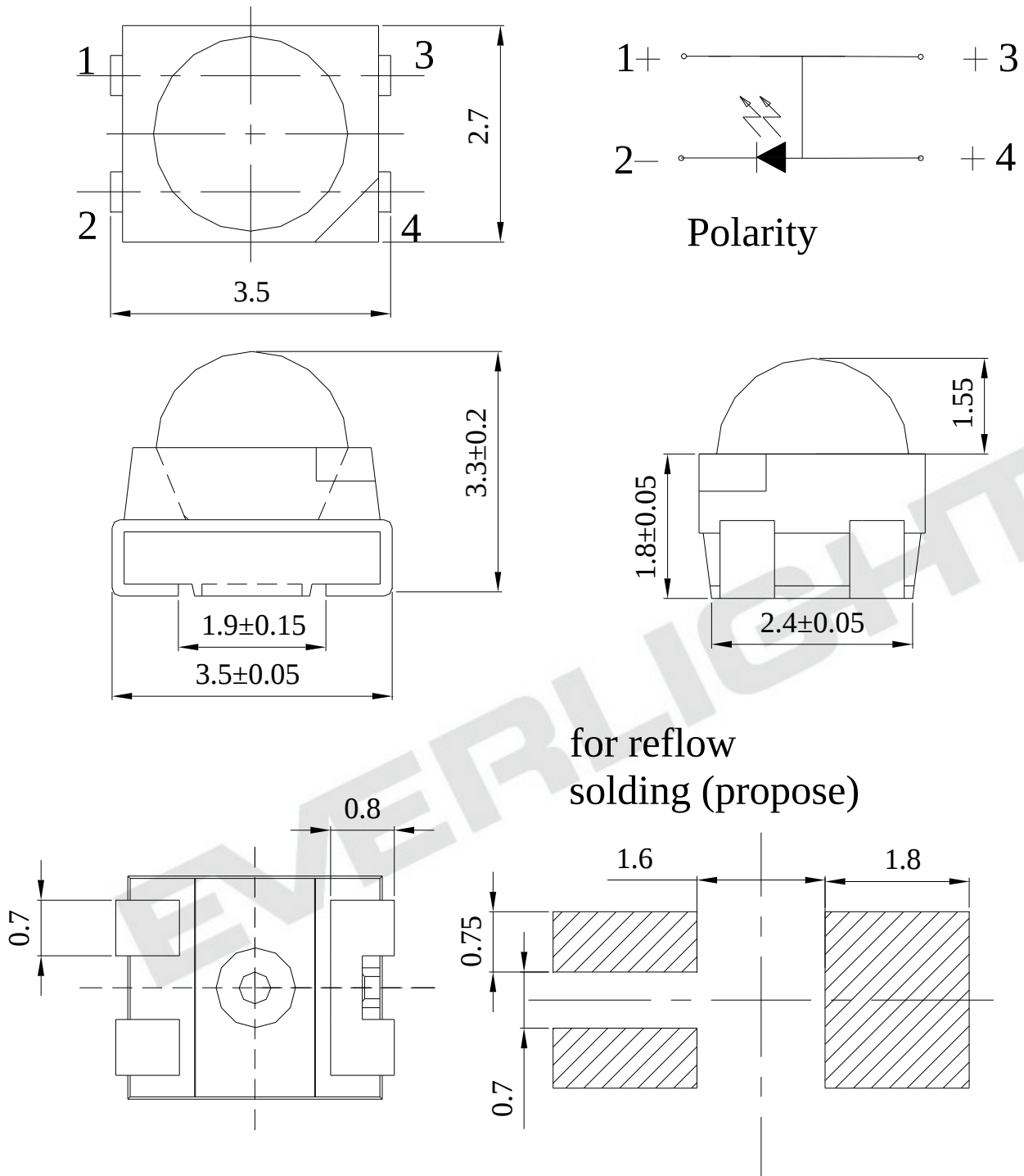
### Diagram Characteristics of Radiation



Typical Electro-Optical Characteristics Curves



## Package Dimension



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

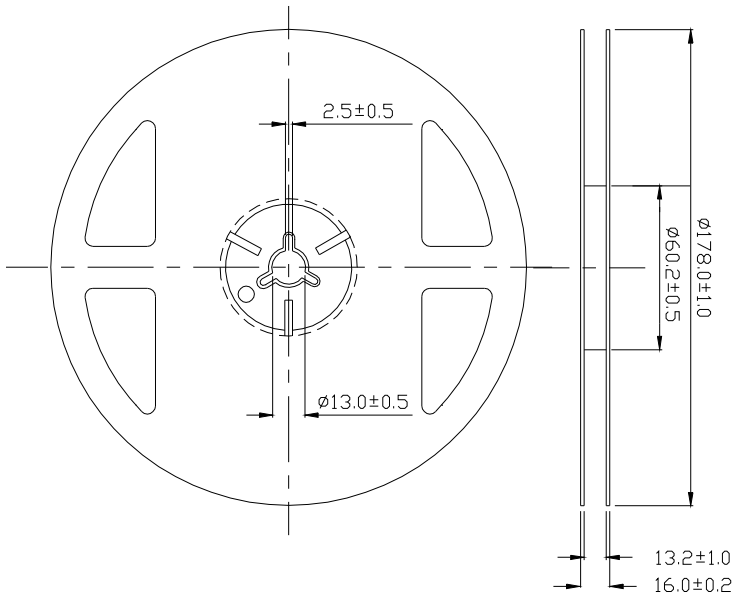
## Moisture Resistant Packing Materials

### 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

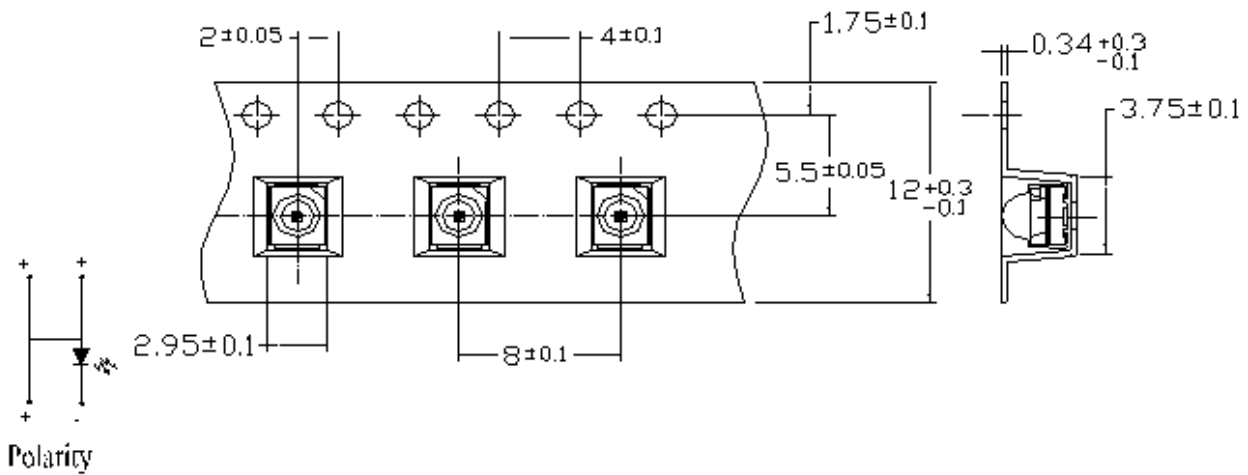
|                                                                                                                                      |                  |                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------|
|                                                     | <b>EVERLIGHT</b> |  |
| CPN :<br>P/N : XXXXXXXXXXXXX<br><br>XXXXXXXXXXXXXX |                  |                                                                                     |
| QTY : XXX<br>                                      |                  |                                                                                     |
| LOT NO : XXXXXXXXXXXX<br>                          |                  |                                                                                     |
| Reference : XXXXXXXXX<br>                          |                  |                                                                                     |
| CAT : XXX<br>HUE : XXX<br>REF : XXX                                                                                                  |                  |                                                                                     |
| <b>MADE IN TAIWAN</b>                                                                                                                |                  |                                                                                     |

## Reel Dimensions



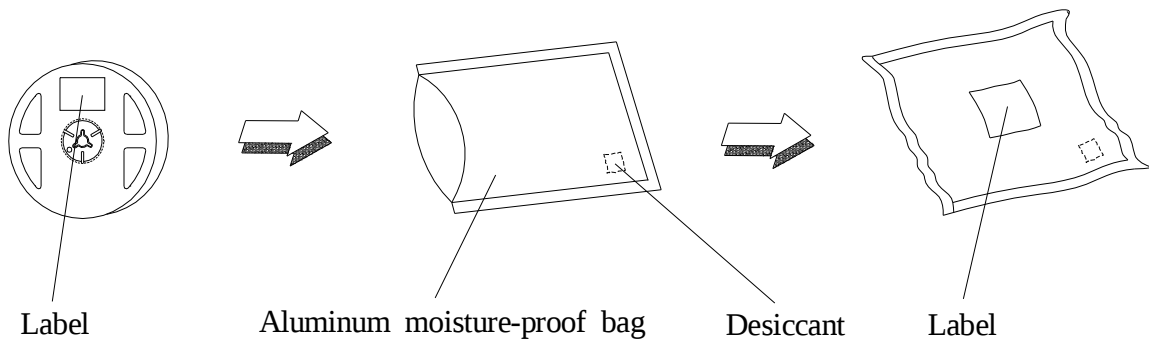
Note: Unit = mm

**Carrier Tape Dimensions: Loaded Quantity 500 pcs Per Reel**



Note:  
The tolerances unless mentioned is : ±0.1mm, Unit = mm

**Moisture Resistant Packing Process**



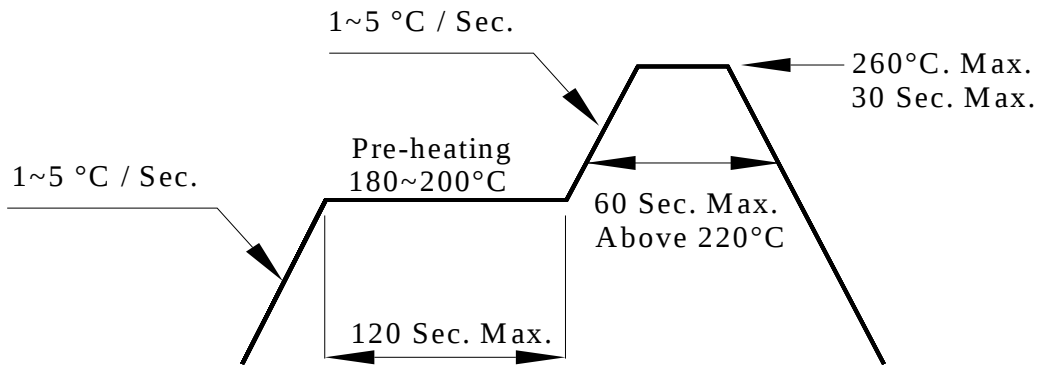
Note:  
Tolerances unless mentioned ±0.1mm. Unit = mm

## Precautions For Use

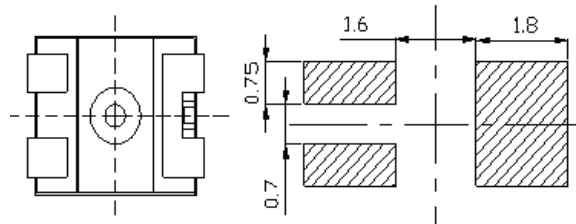
### Precautions for Use

#### 1. Soldering Condition (Reference: IPC/JEDEC J-STD-020D)

##### a. IR reflow



(B) Recommend soldering pad



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

## 2. Current limiting

A resistor should be used to limit current spikes that can be caused by voltage fluctuations. Otherwise damage could occur.

## 3. Storage

- 3.1 Moisture proof bag should only be opened immediately prior to usage.
- 3.2 Environment should be less than 30 °C and 60% RH when moisture proof bag is opened.
- 3.3 After opening the package MSL Conditions stated on page 1 of this spec should not be exceeded.
- 3.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg for 24 hours.

## 4. Iron Soldering

Hand soldering is not recommended for regular production. These guidelines are for rework only. Soldering iron tip should contact each terminal no more than 3 sec at 350 °C, using soldering iron with nominal power less than 25W. Allow min. 2 sec. between soldering intervals.

## 5. Usage

Do not exceed the values given in this specification.

## 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.