

## Power Top View LEDs

67-31EU-URD1224BACB1828Z5-2T0C-AM

**Features****Lead (Pb) Free Product - RoHS Compliant**

- P-LCC-3 package.
- Colored Clear resin.
- Wide viewing angle 120°.
- Inner reflector and white package.
- Qualification according to AEC-Q101 rev C.
- Precondition: Bases on JEDEC J-STD 020D Level 3.
- Automotive reflow profile (IR reflow or wave soldering)
- Compliance with EU REACH.
- Golden Lead Frame

**Applications**

- Automotive Lighting Interior and Exterior.
- Signal and Symbol Luminary.
- Commercial and Industrial Illumination.
- Backlight: LCD, Switches, Push buttons.

## Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Reddish Orange	Water Clear

## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	VR	10	V
Forward Current	I <sub>F</sub>	70	mA
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	100	mA
Power Dissipation	Pd	196	mW
Junction Temperature	T <sub>j</sub>	125	°C
Operating Temperature	T <sub>opr</sub>	-40 ~ +100	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +110	°C
Thermal Resistance	Rth <sub>J-A</sub>	250	K/W
	Rth <sub>J-S</sub>	150	K/W
ESD (Classification acc. AEC Q101)	ESD <sub>HBM</sub>	2000	V
	ESD <sub>MM</sub>	200	V
Soldering Temperature	T <sub>sol</sub>	Reflow Soldering : 260 °C for 30 sec. Hand Soldering : 350 °C for 3 sec.	

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	1800	---	4500	mcd	I <sub>F</sub> = 50mA VR=10V
Viewing Angle	2θ <sub>1/2</sub>	---	120	---	deg	
DominantWavelength	λ <sub>d</sub>	612	---	624	nm	
Forward Voltage	V <sub>F</sub>	1.80	---	2.80	V	
Reverse Current	IR	---	---	10	μA	

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.(mcd)	Max.(mcd)	Flux(lm) typ.	Unit	Condition
BA	1800	2240	7.0	mcd	I <sub>F</sub> =50mA
BB	2240	2800	7.5		
CA	2800	3550	9.0		
CB	3550	4500	11.5		

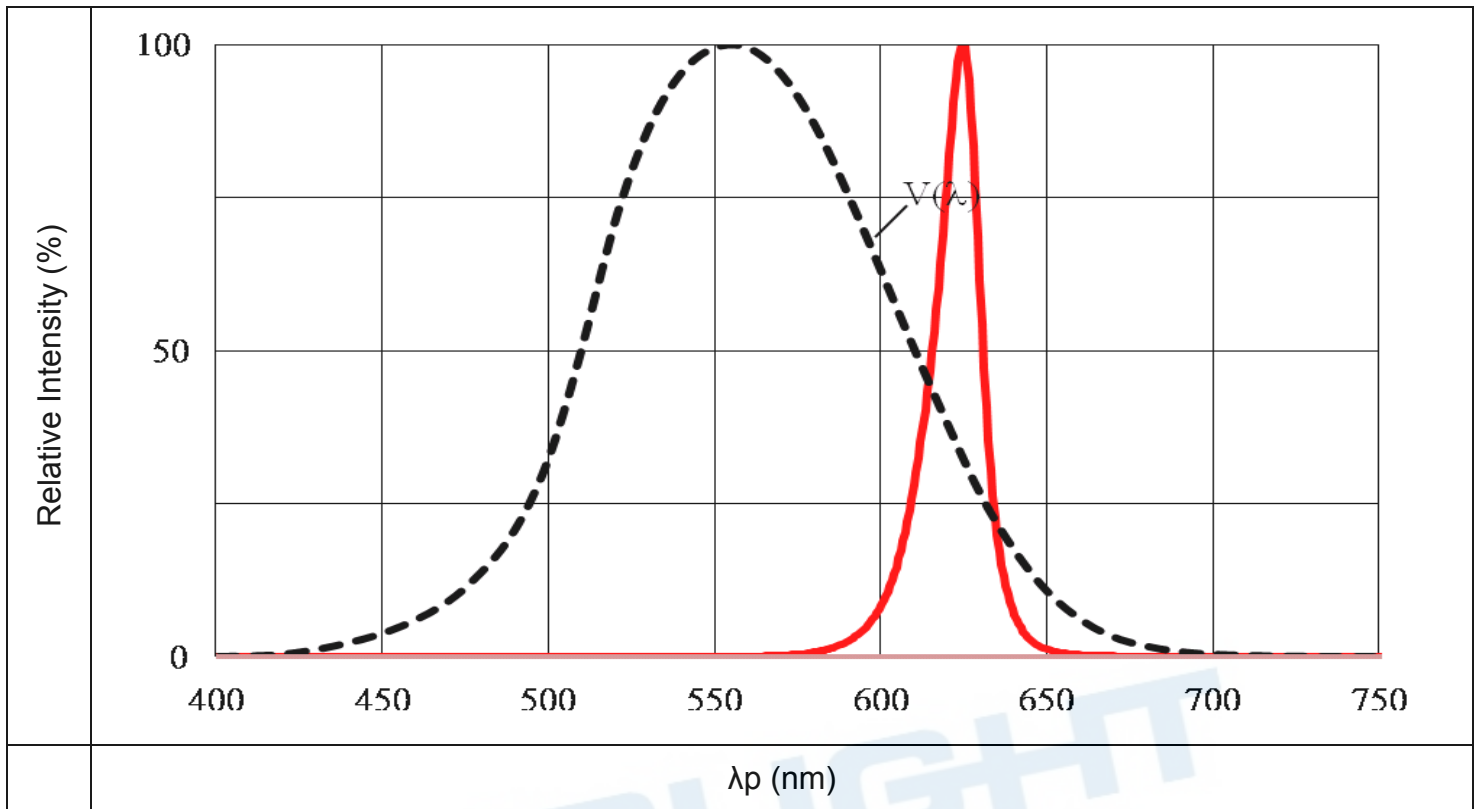
**Bin Range of Dominant Wavelength**

Bin Code	Min.	Max.	Unit	Condition
AA10	612	615	nm	I <sub>F</sub> = 50mA
AA11	615	618		
AA12	618	621		
AA13	621	624		

**Bin Range of Forward Voltage**

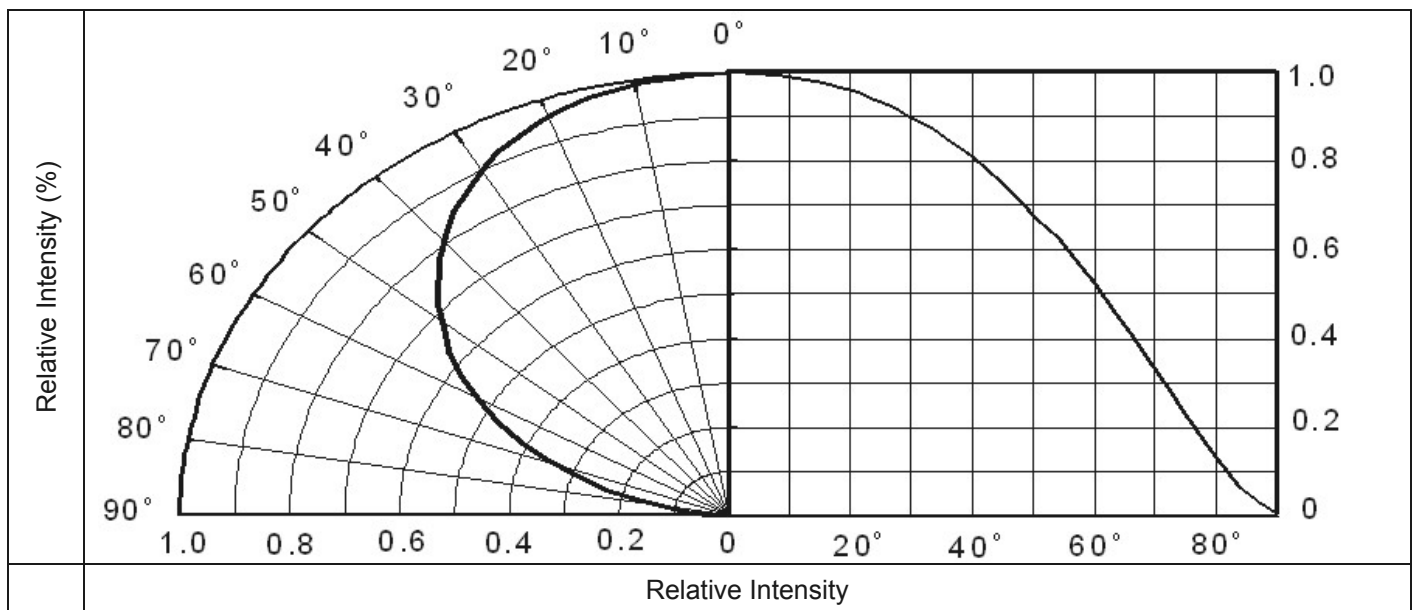
Bin Code	Min.	Max.	Unit	Condition
G3-1	1.80	2.00	V	I <sub>F</sub> =50mA
G3-2	2.00	2.20		
G3-3	2.20	2.40		
G3-4	2.40	2.60		
G3-5	2.60	2.80		

**Typical Electro-Optical Characteristics Curves(Ta=25°C)**  
**Typical Curve of Spectral Distribution**

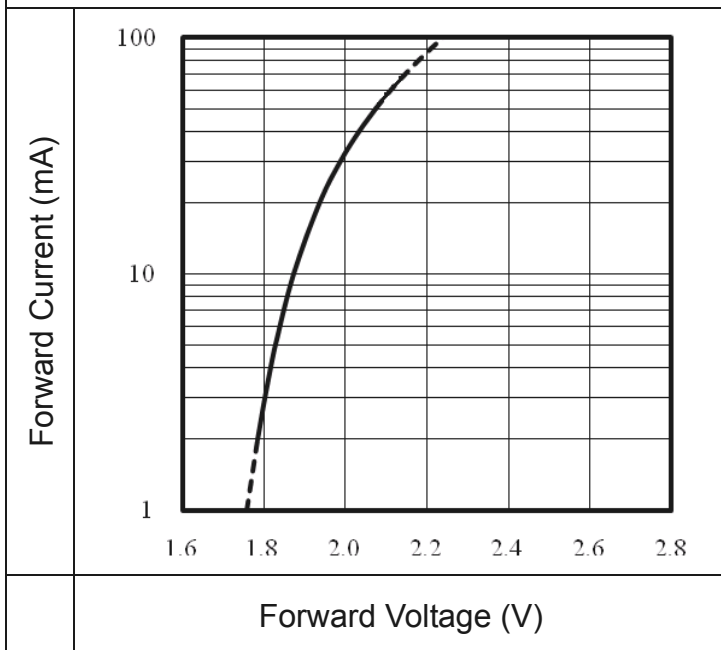


Note:  $V(\lambda)$ =Standard eye response curve;

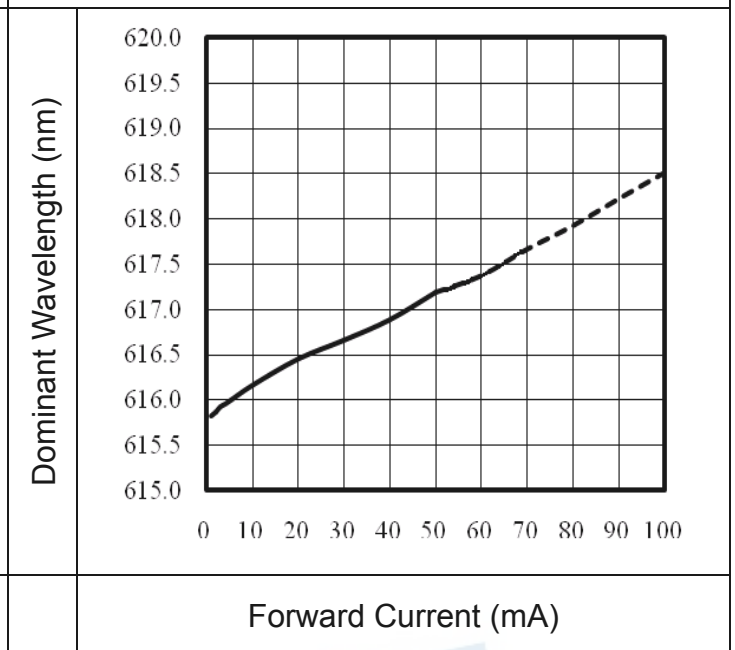
**Diagram Characteristics of Radiation**



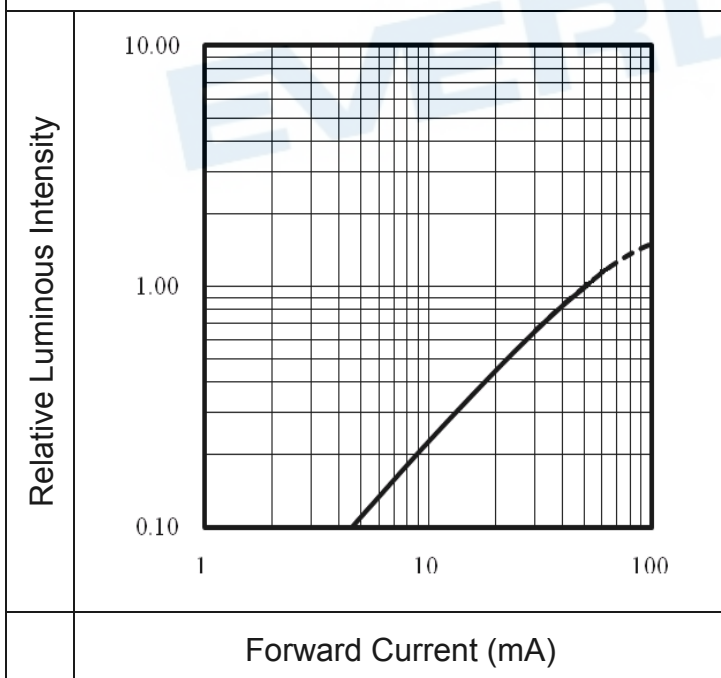
**Forward Current vs. Forward Voltage  
 (Ta=25°C)**



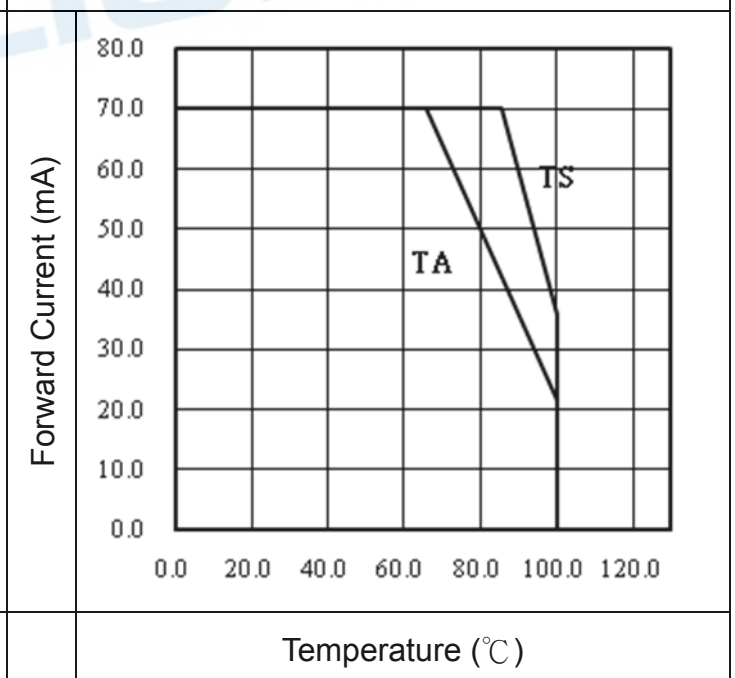
**Dominant Wavelength vs. Forward Current  
 (Ta=25°C)**

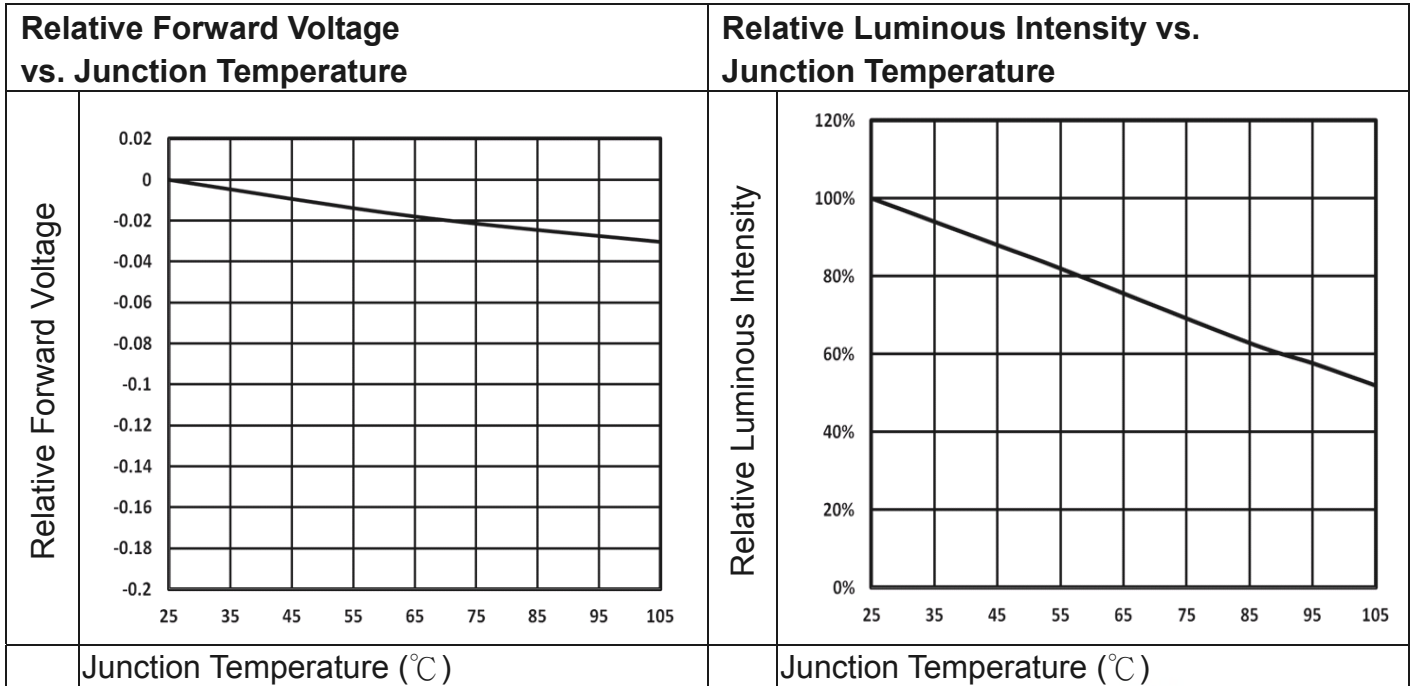


**Relative Luminous Intensity vs.  
 Forward Current (Ta=25°C)**



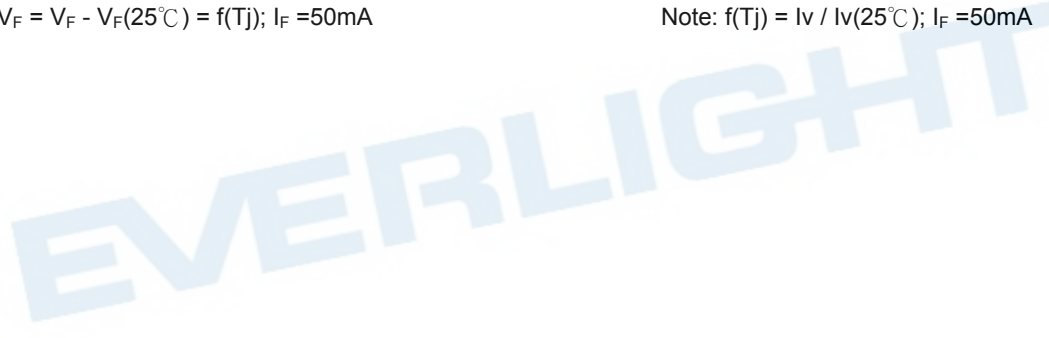
**Forward current vs. Ambient and Solder  
 Temperature**



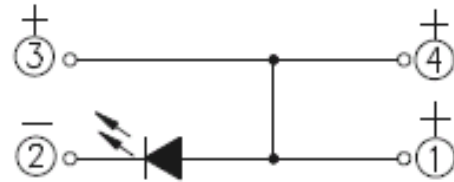
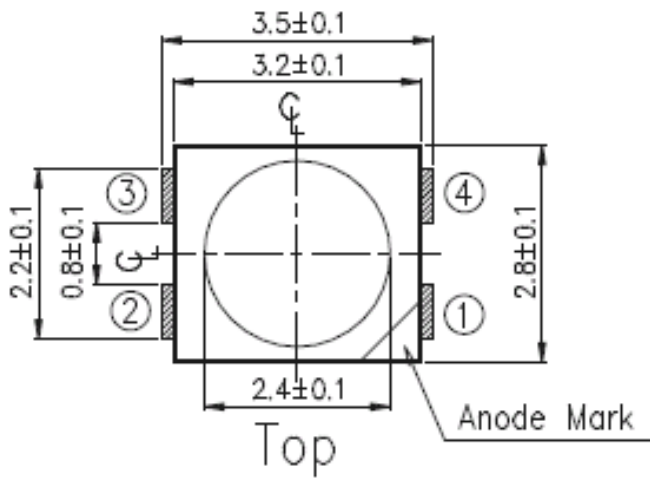


Note:  $\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j)$ ;  $I_F = 50\text{mA}$

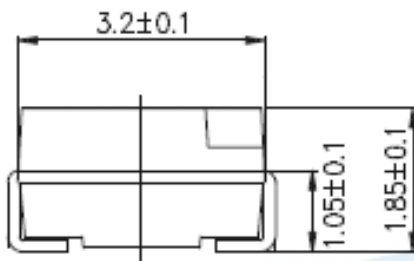
Note:  $f(T_j) = I_v / I_v(25^\circ\text{C})$ ;  $I_F = 50\text{mA}$



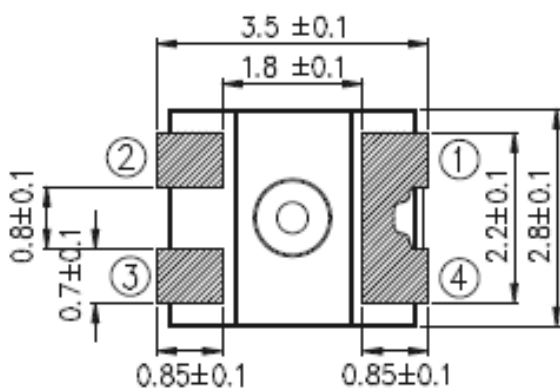
Package Dimension



Polarity



Side




Bottom

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

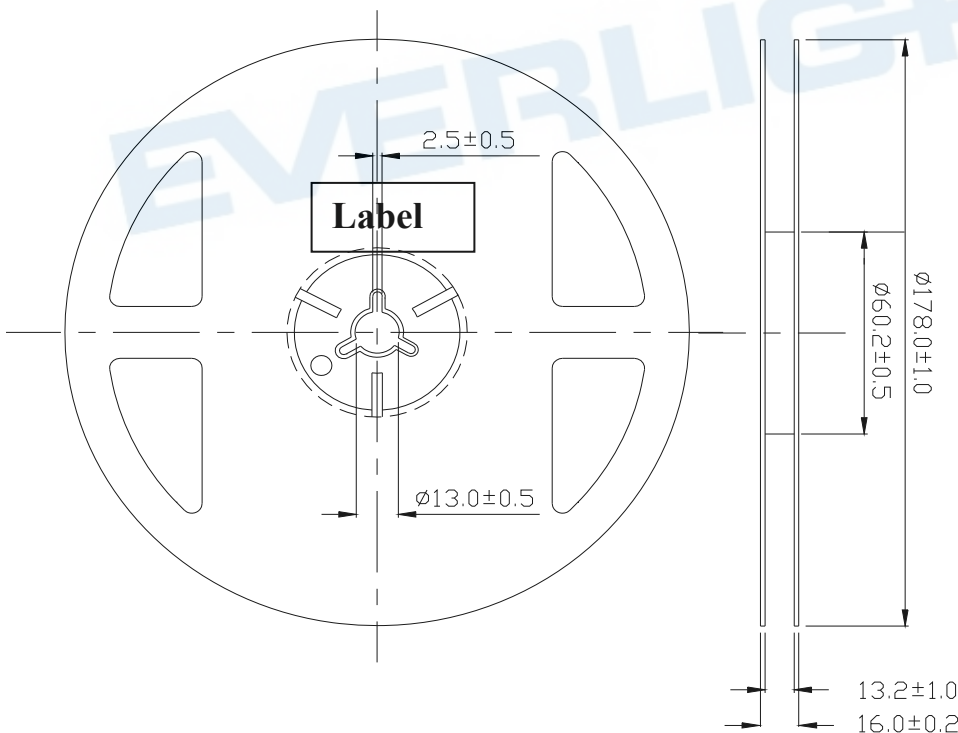
**Moisture Resistant Packing Materials  
 Label Explanation**

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

RoHS	<b>(Pb)</b>	<b>EVERLIGHT</b>	<b>5</b>
CPN: XXXXXXXXXXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
P/N: XXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXX			
QTY: 0123456789		HUE: XXXXXXXXXXXX	
CAT: XXXXXXXXXXXX		REF: XXXXXXXXXXXX	
REFERENCE: BTPYYMDDXXXXX			
MSL-X		MADE IN XXXXXX	



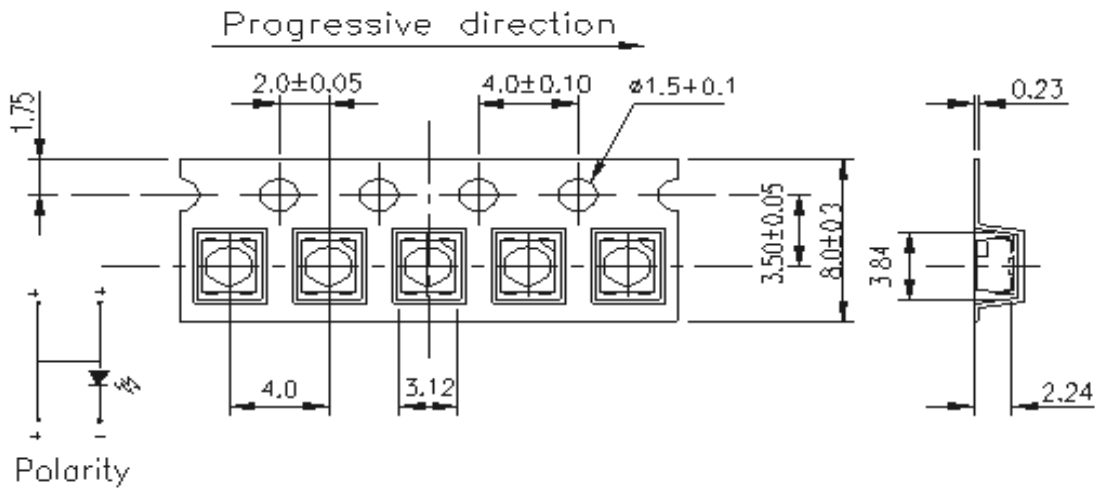
**Reel Dimensions**



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



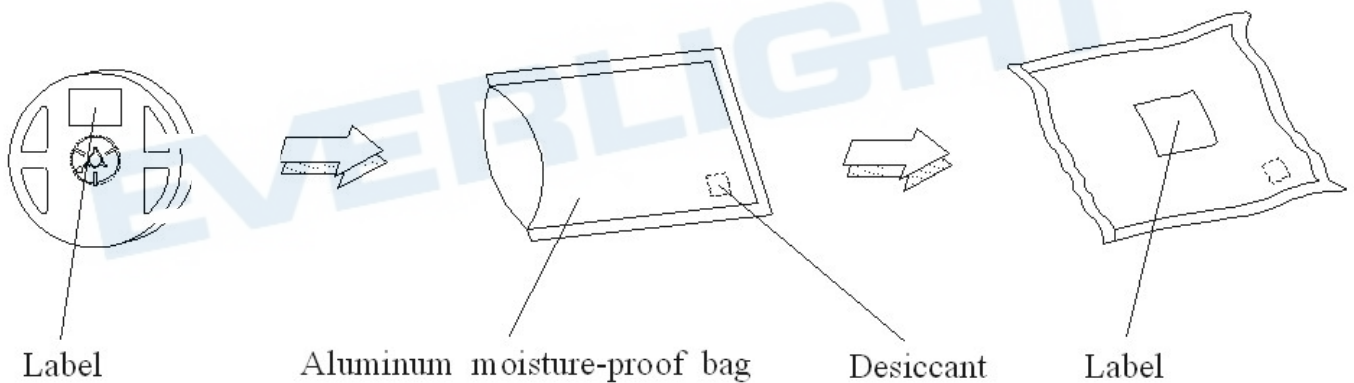
**Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel**



**Note:**

1. Tolerances unless mentioned  $\pm 0.1$ mm. Unit = mm
2. Minimum packing amount is 2000 pcs per reel

**Moisture Resistant Packing Process**

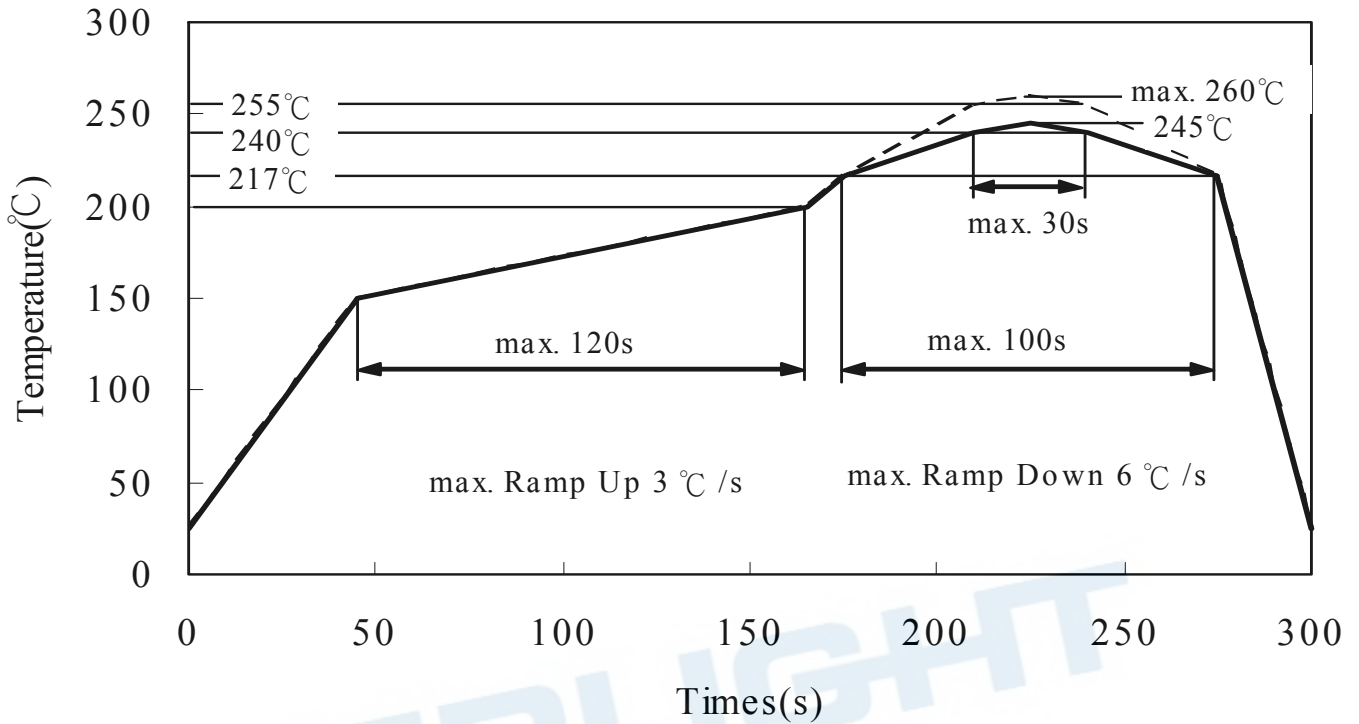


Note: Tolerances unless mentioned  $\pm 0.1$ mm. Unit = mm

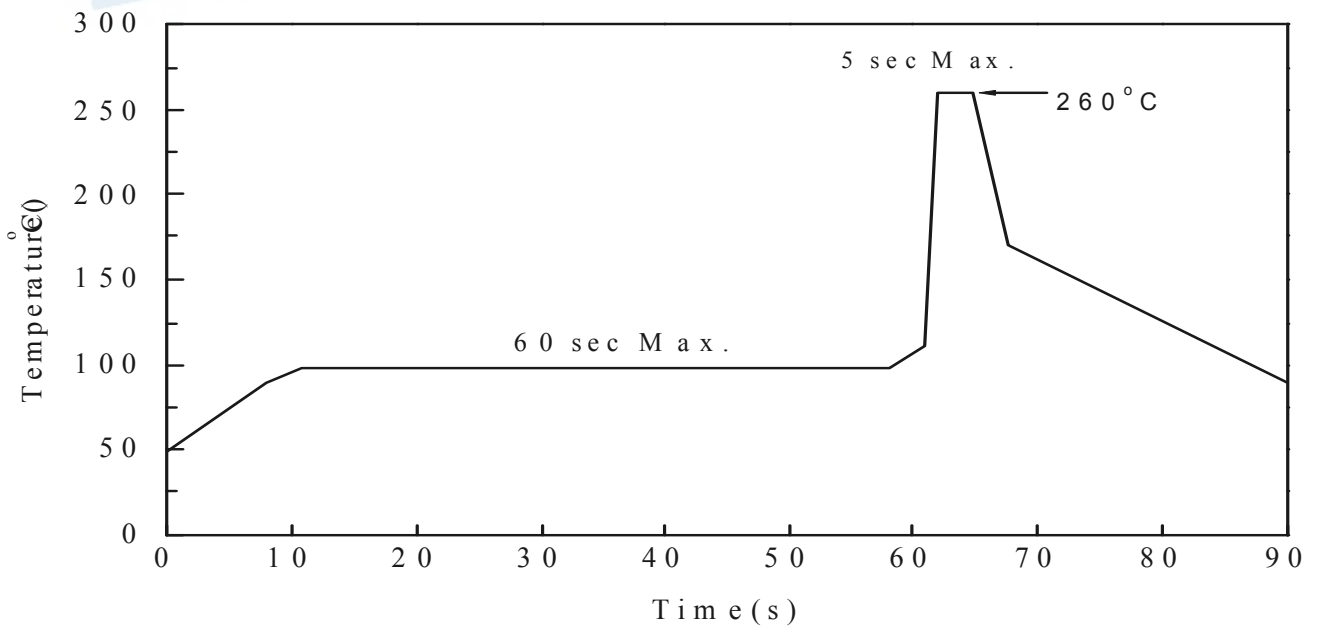
**Precautions for Use**

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

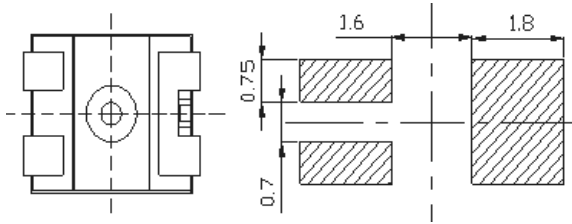
**a. IR reflow**



**b. Wave soldering 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  $30^{\circ}\text{C}$  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.  $60^{\circ}\text{deg}$   $\pm 5^{\circ}\text{deg}$  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  $350^{\circ}\text{C}$ , 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.

## Revision History

Rev.	Modified date	File modified contents
1	2015/02/17	New Spec
2	2015/03/18	Approved
3	2015/04/30	Package Dimension
4	2015/08/12	To add the Flux(lm) typ.
5	2016/01/14	Change the QR Code
6	2016/01/28	To add the Flux(lm) typ.

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