

SMD ▪ Side View LEDs

57-21-URD1224BACB1828Z5-2T0C-AM(TS)

**Features**

- P-LCC-4 package.
- Colorless clear resin.
- Wide viewing angle 120°.
- Inner reflector and white package.
- Brightness: 1500 to 4500mcd at 50mA
- Precondition: Bases on JEDEC J-STD 020D Level 3
- Qualification according to AEC-Q101 rev C.
- Automotive reflow profile (IR reflow or wave soldering)

Description

• The 57-21 eries is available in soft orange, green, blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

- Automotive backlighting or indicator: Dashboard, switch, audio and video equipments...etc.
- Backlight: LCD, switches, symbol, mobile phone and illuminated advertising.
- Display for indoor and outdoor application.
- Ideal for coupling into light guides.
- Substitution of traditional light.
- Optical indicator.

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	V_R	12	V
Forward Current	I_F	70	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	P_d	196	mW
Junction Temperature	T_j	125	°C
Operating Temperature	T_{opr}	-40 ~ +100	°C
Storage Temperature	T_{stg}	-40 ~ +110	°C
Thermal Resistance	$R_{th\ J-A}$	300	K/W
	$R_{th\ J-S}$	150	K/W
ESD (Classification acc. AEC Q101)	ESD_{HBM}	2000	V
	ESD_{MM}	200	V
Soldering Temperature	T_{sol}	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 _F =50mA
Viewing Angle	2θ _{1/2}	-----	120	-----	deg	I _F =50mA
Peak Wavelength	λp	-----	632	-----	nm	I _F =50mA
Dominant Wavelength	λd	612	-----	624	nm	I _F =50mA
Spectrum Radiation Bandwidth	Δλ	-----	20	-----	nm	I _F =50mA
Forward Voltage	V _F	1.8	-----	2.8	V	I _F =50mA
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

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Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
BA	1800	2240	mcd	I _F =50mA
BB	2240	2800		
CA	2800	3550		
CB	3550	4500		

Note:
 Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
AA10	612	615	nm	I _F =50mA
AA11	615	618		
AA12	618	621		
AA13	621	624		

Note:
 Tolerance of Dominant Wavelength: ±1nm

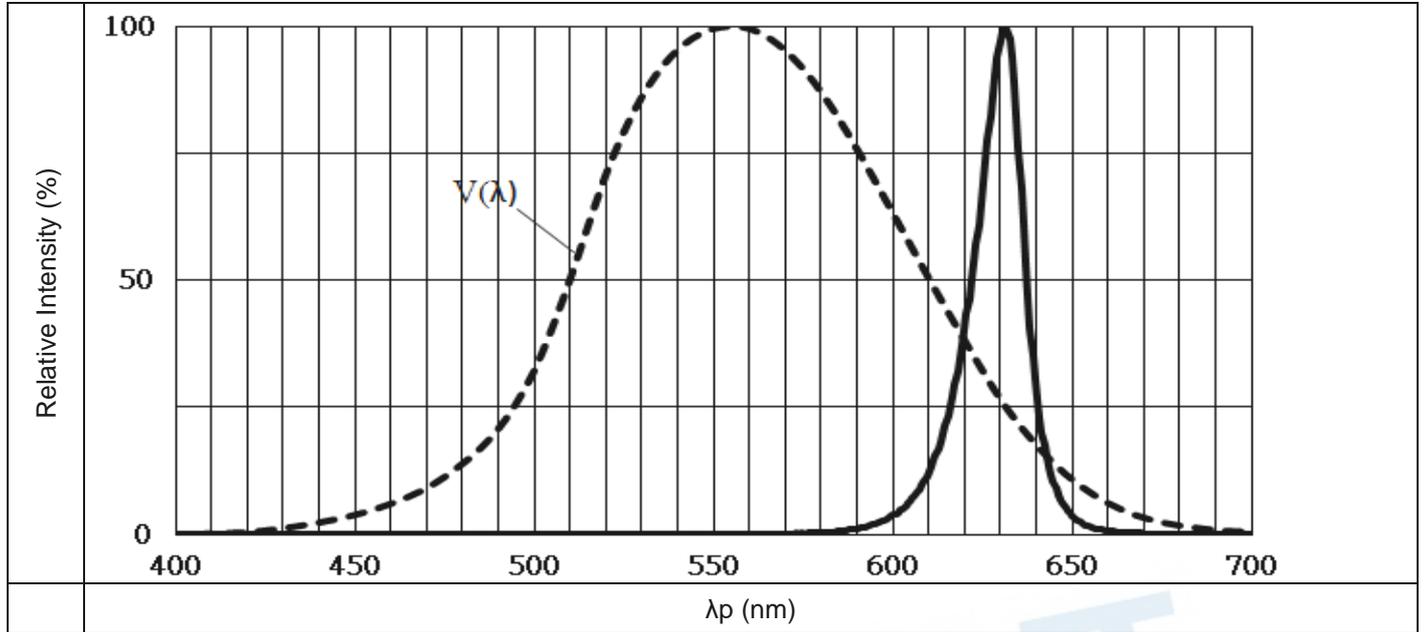
Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
G3-1	1.80	2.00	V	I _F =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		

Note:
 Tolerance of Forward Voltage: ±0.1V

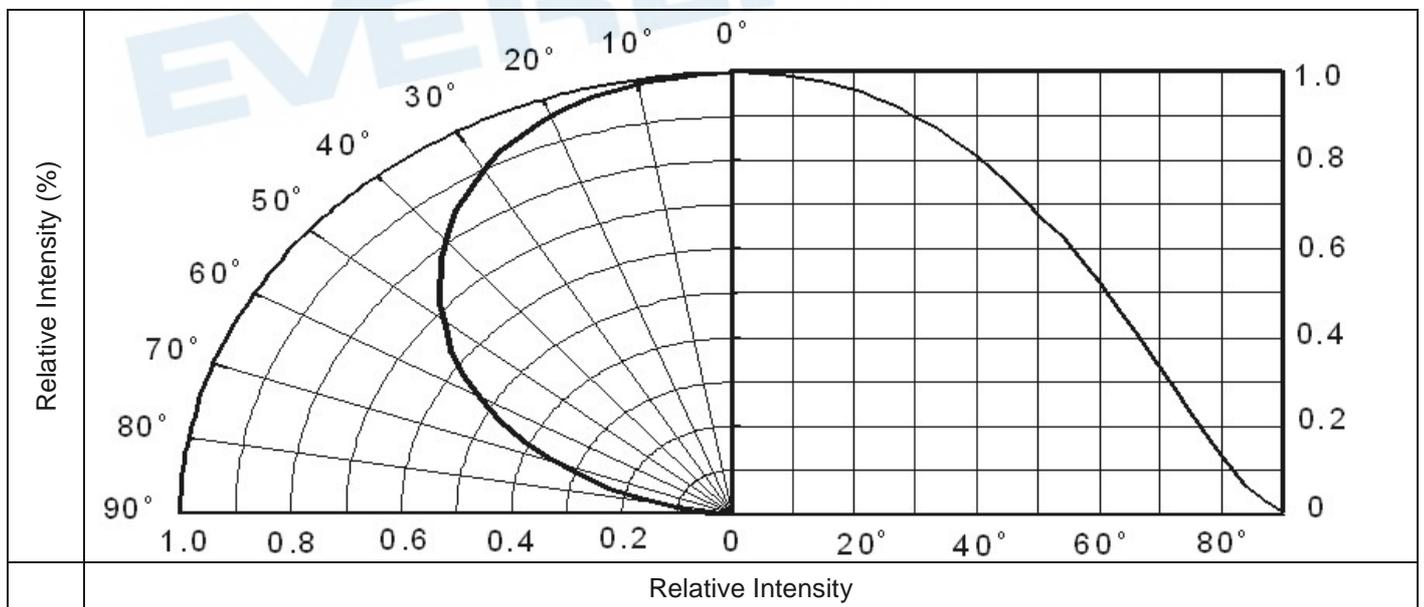
Typical Electro-Optical Characteristics Curves

Typical Curve of Spectral Distribution

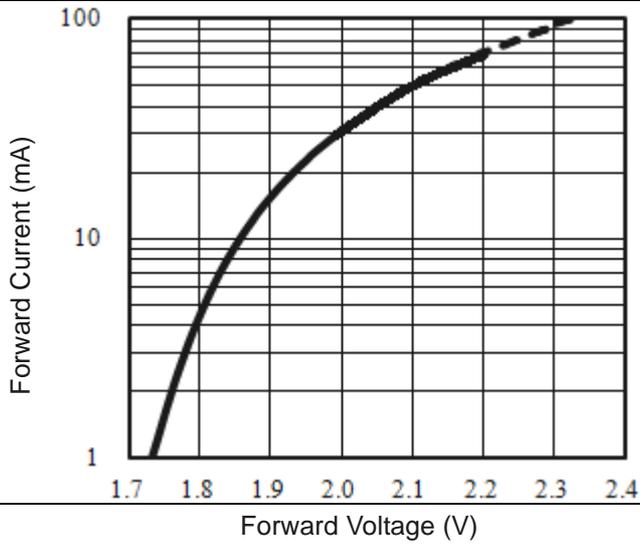


Note: $V(\lambda)$ =Standard eye response curve; $I_f = 50\text{mA}$

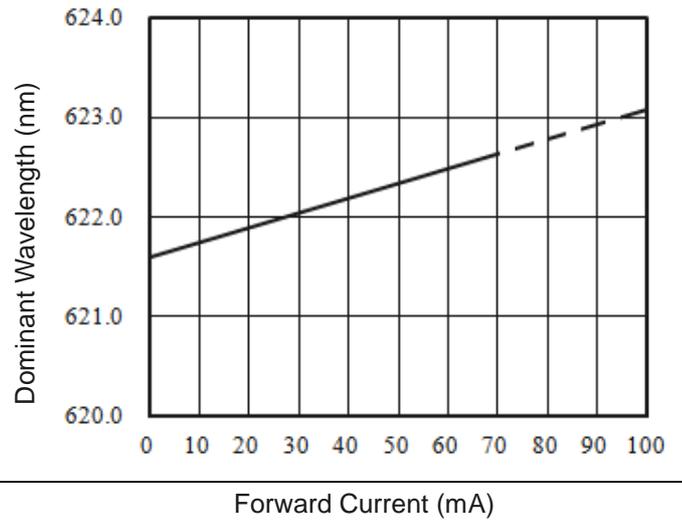
Diagram Characteristics of Radiation



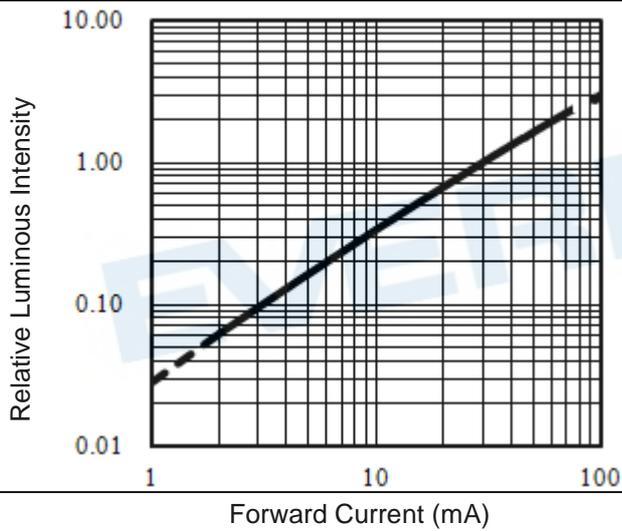
Forward Current vs. Forward Voltage (Ta=25°C)



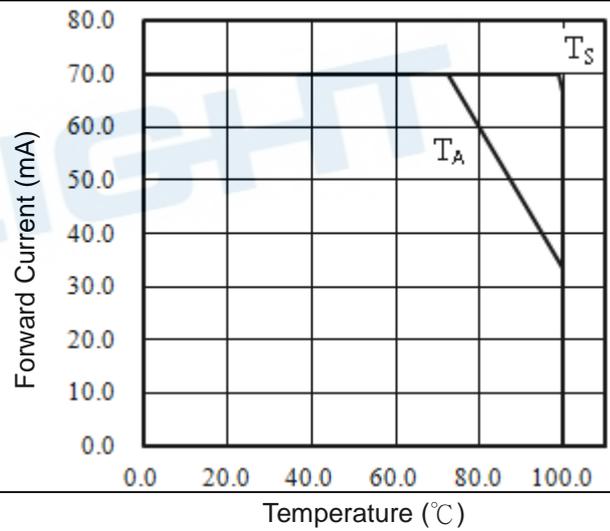
Dominant Wavelength vs. Forward Current (Ta=25°C)



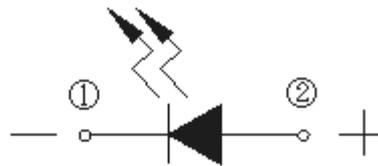
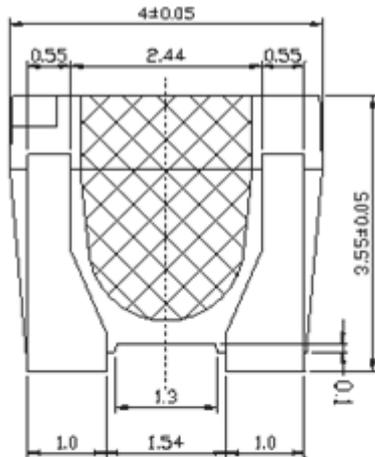
Relative Luminous Intensity vs. Forward Current (Ta=25°C)



Max. Permissible Forwarded Current (Ta=25°C)

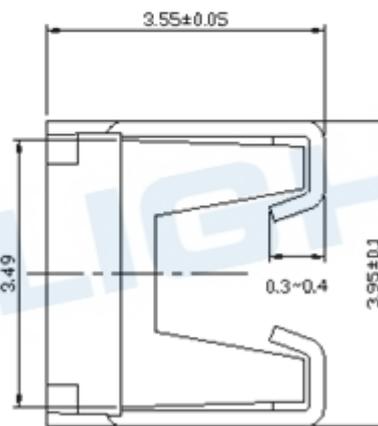
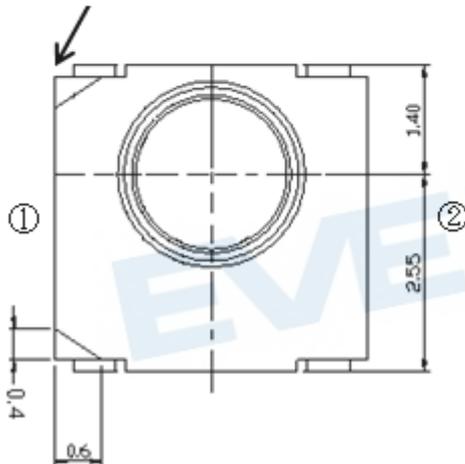


Package Dimension



Polarity

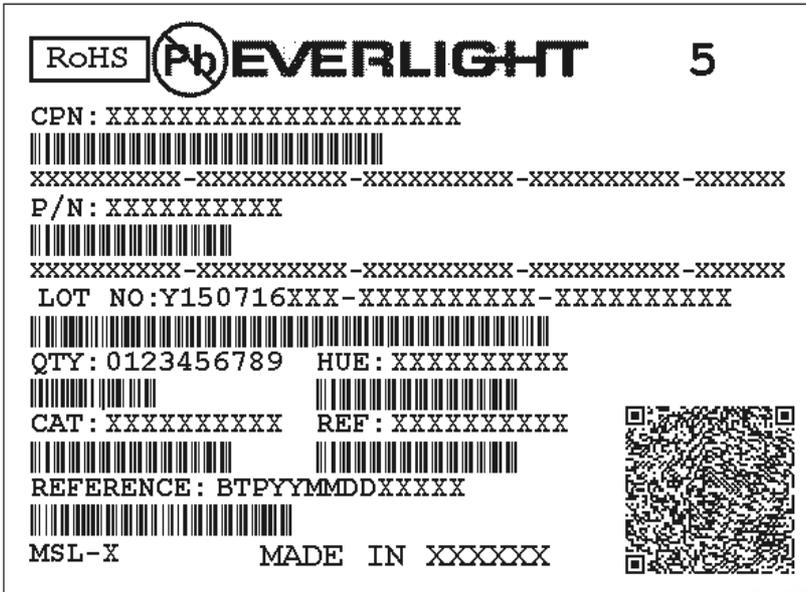
Cathode Mark



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

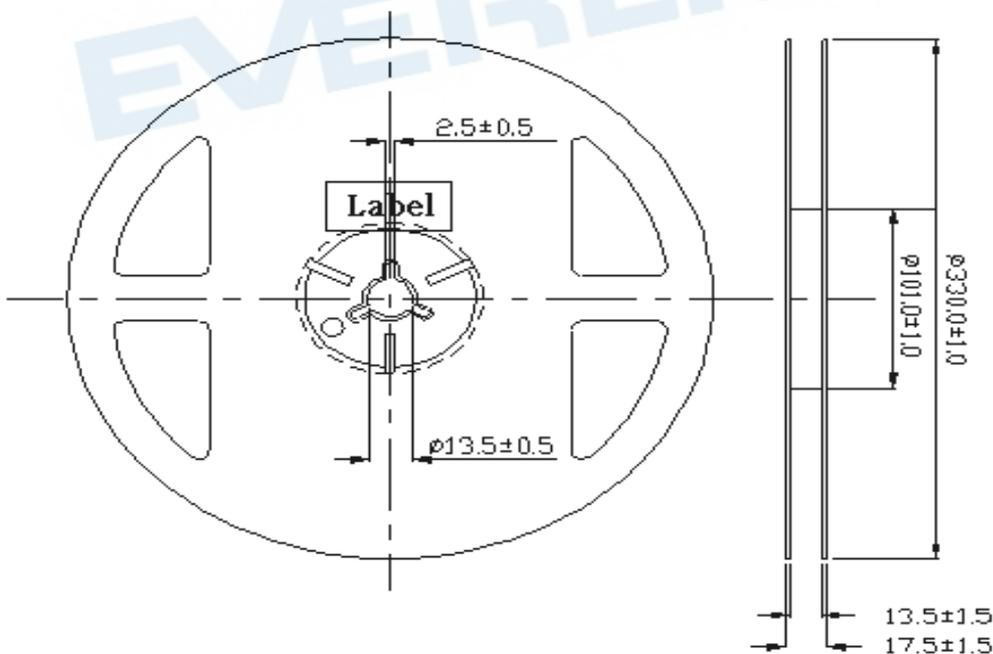
Moisture Resistant Packing Materials

Label Explanation

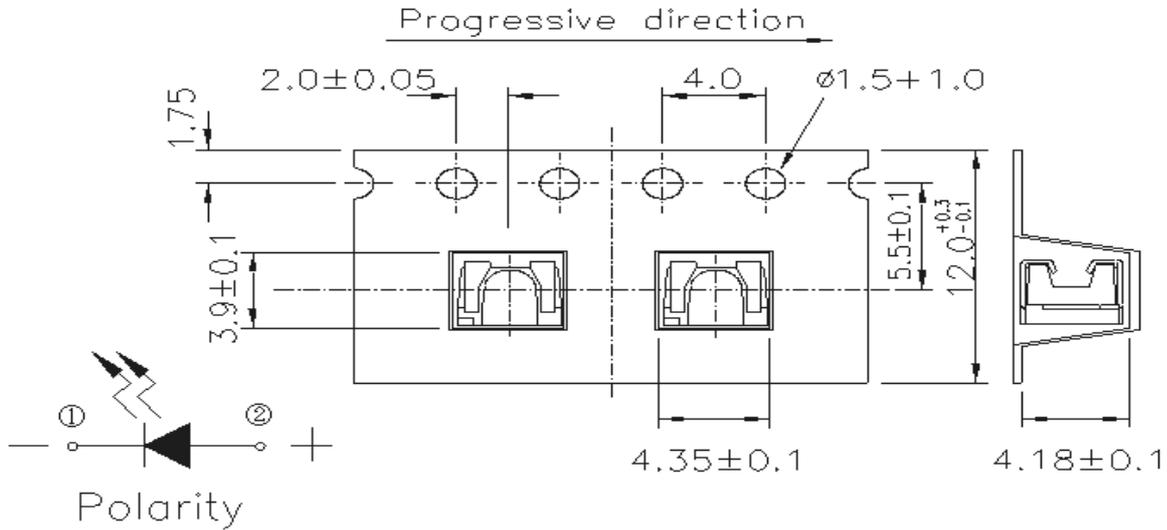


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions

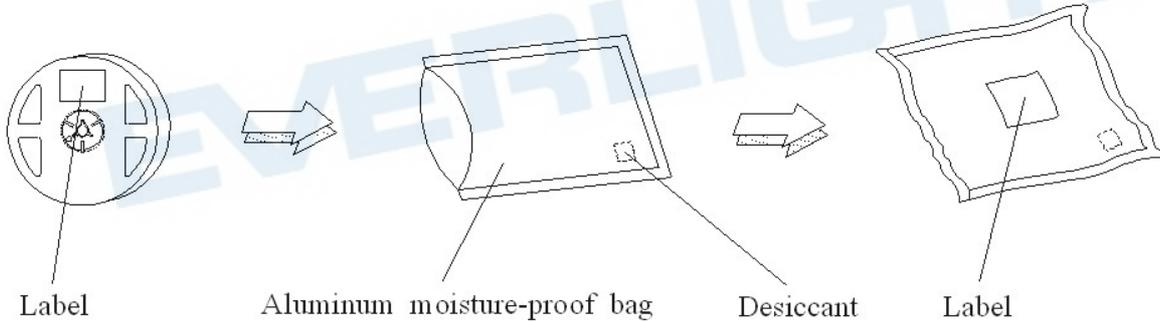


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packing Process

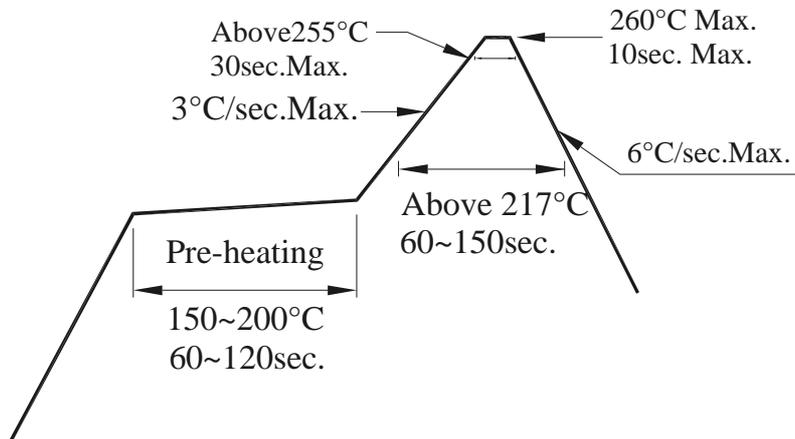


Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

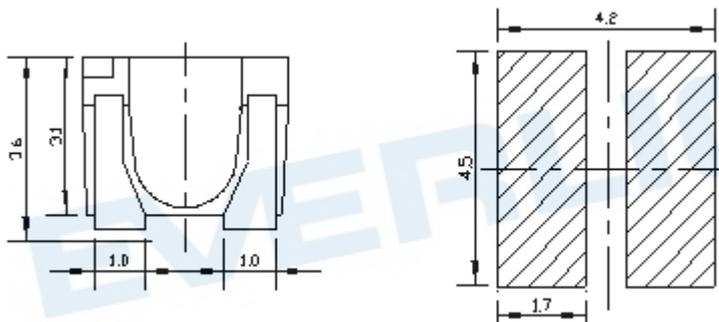
Precautions for Use

1. Over-current-proof

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



1.2 (B) Recommend soldering pad



Note: Reference: IPC/JEDEC J-STD-020D

2. Storage

- 2.1 Moisture proof bag should only be opened immediately prior to usage.
- 2.2 Environment should be less than 30°C and 60% RH when moisture proof bag is opened.
- 2.3 After opening the package MSL Conditions stated on page 1 of this spec should not be exceeded.
- 2.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg 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	2017/11/28	New Spec