DATASHEET

Top View LEDs
67-21/T2C-YV2W2B22/2T

Features

- P-LCC-2 package..
- White package.
- Optical indicator.
- Colorless clear window.
- Wide viewing angle.
- Suitable for vapor-phase reflow.
- Computable with automatic placement equipment.
- Pb-free.
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br<900ppm,Cl<900ppm,Br+Cl<1500ppm)
- Precondition: Bases on JEDEC J-STD 020D Level 3

Applications

- Indicator and backlight for audio and video equipment.
- Indicator and backlight in office and family equipment.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	Pure White	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	30	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	108	mW
Junction Temperature	T_j	115	℃
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
ESD	ESD_{HBM}	1000	V
Soldering Temperature	T_{sol}	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Note:
*1 Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of this document. Exposure to absolute maximum ratings for extended periods of the time can adversely affect reliability.
*2 LED components are not supposed to be reverse operated.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	900	---	2250	mcd	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=20mA
Forward Voltage	V_F	2.8	---	3.6	V	I_F=20mA
Reverse Current	I_R	---	---	5	μA	V_R=10V

Note:
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Chromaticity Coordinates: ±0.01
3. Tolerance of Forward Voltage: ±0.1V
4. All reliability item are tested under good thermal management. Dynamic reliability are tested at 20mA.
5. LED components are not supposed to be reverse operated.

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
V2	900	1120	mcd	I_F=20mA
W1	1120	1420		
W2	1420	1800		
X1	1800	2250		

Note:
Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

Group	Bin Code	Min.	Max.	Unit	Condition
B22	35	2.80	2.90	nm	I_F=20mA
	36	2.90	3.00		
	37	3.00	3.10		
	38	3.10	3.20		
	39	3.20	3.30		
	40	3.30	3.40		
	41	3.40	3.50		
	42	3.50	3.60		

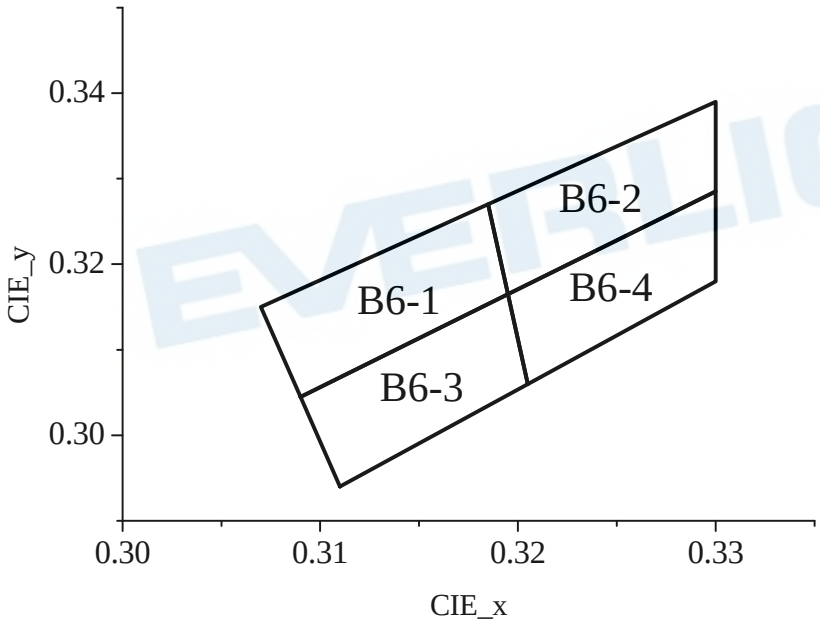
Note:
Tolerance of Dominant Wavelength: ±1nm

Bin Range of Chromaticity Coordinates

Group	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
Y	B6-1	0.3090	0.3045	B6-2	0.3195	0.3165
		0.3070	0.3150		0.3185	0.3270
		0.3185	0.3270		0.3300	0.3390
		0.3195	0.3165		0.3300	0.3285
	B6-3	0.3110	0.2940	B6-4	0.3205	0.3060
		0.3090	0.3045		0.3195	0.3165
		0.3195	0.3165		0.3300	0.3285
		0.3205	0.3060		0.3300	0.3180

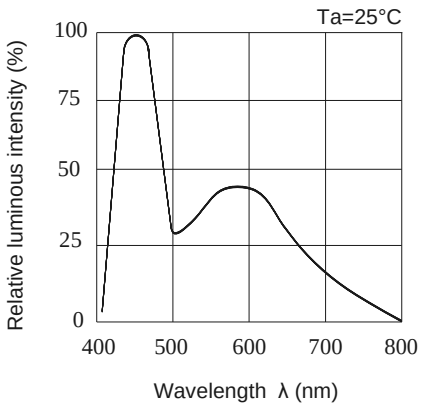
Note: Tolerance of Chromaticity Coordinates: ±0.01

The C.I.E. 1931 chromaticity diagram.

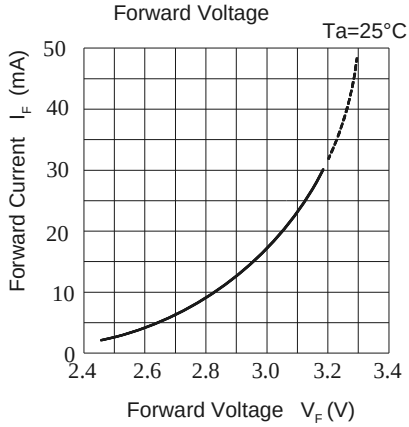


Typical Electro-Optical Characteristics Curves

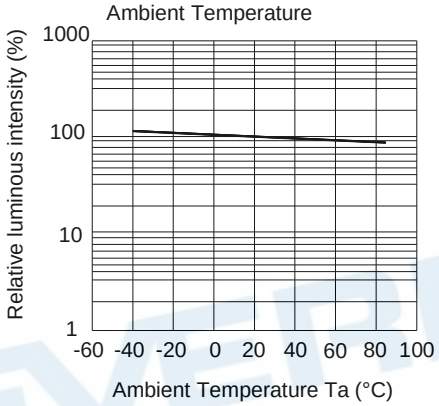
Spectrum Distribution



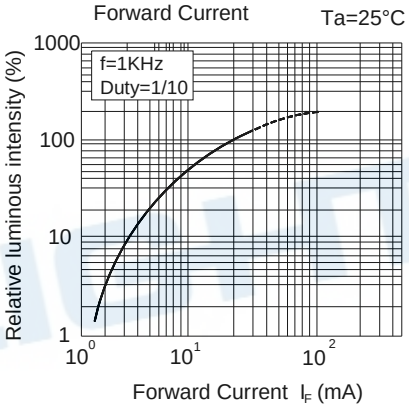
Forward Current vs. Forward Voltage



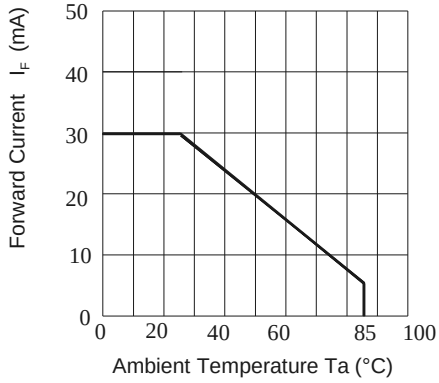
Relative Luminous Intensity vs. Ambient Temperature



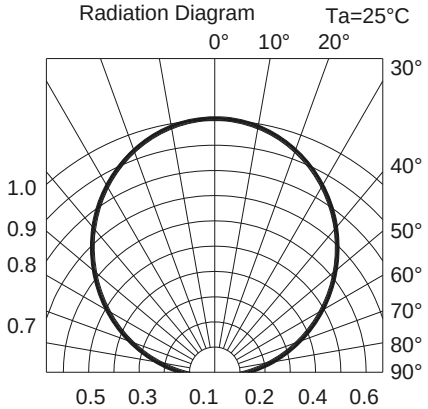
Relative Luminous Intensity vs. Forward Current



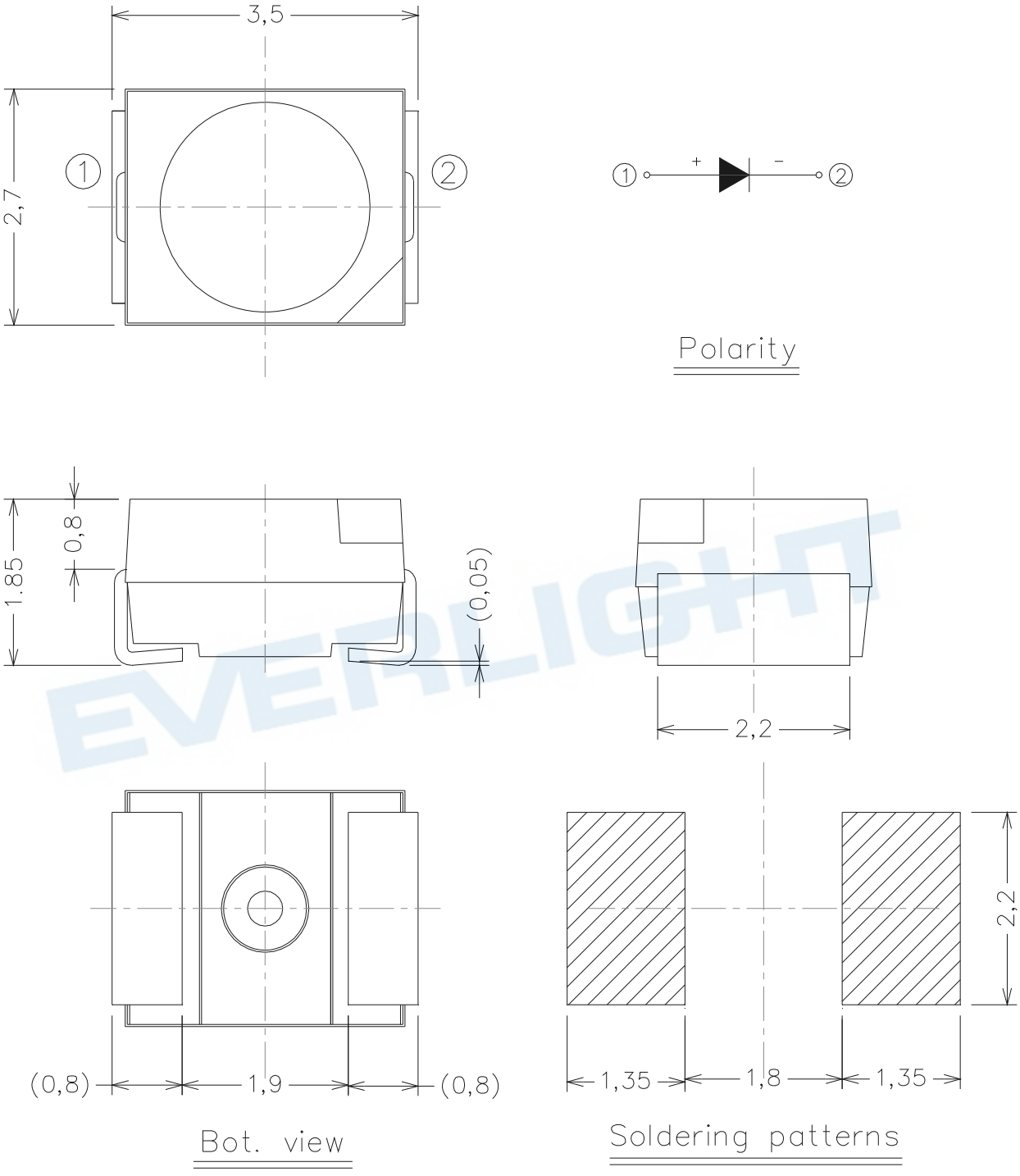
Forward Current Derating Curve



Radiation Diagram

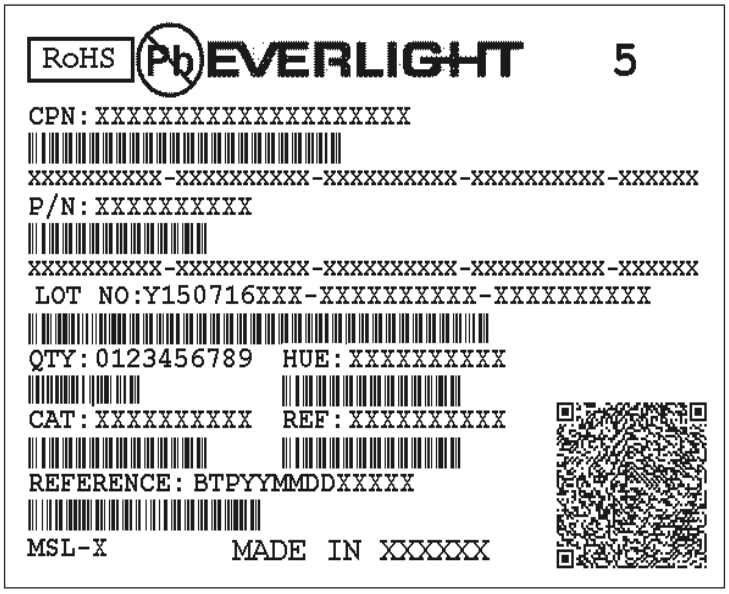


Package Dimension



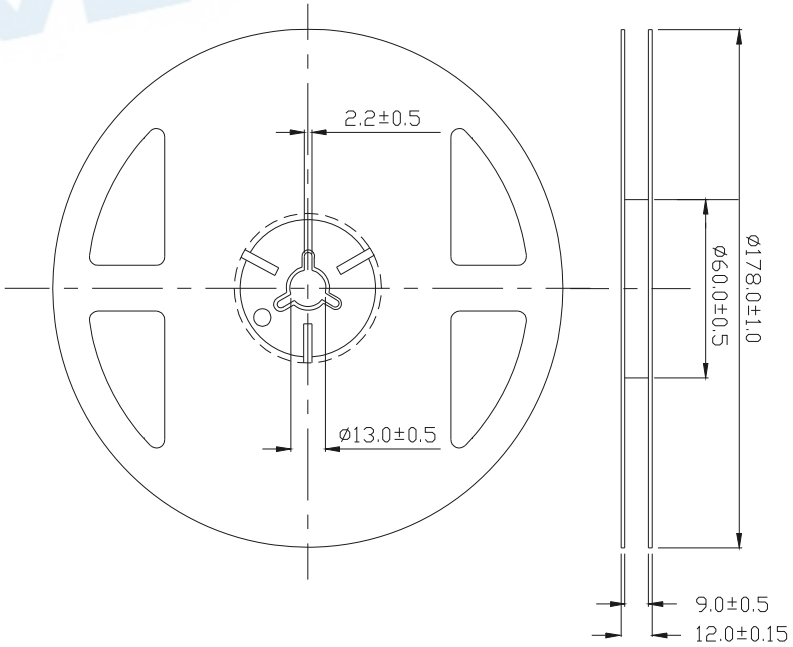
Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Moisture Resistant Packing Materials



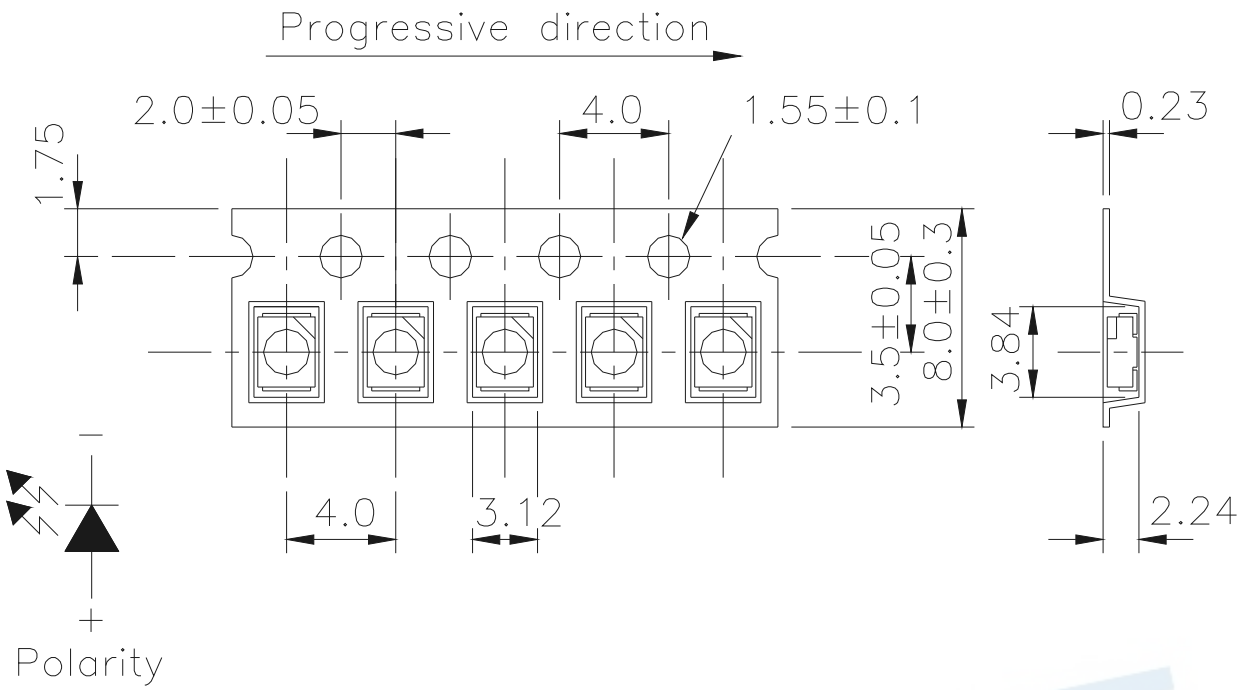
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



Note: Tolerances unless dimension ±0.1mm; Unit = mm

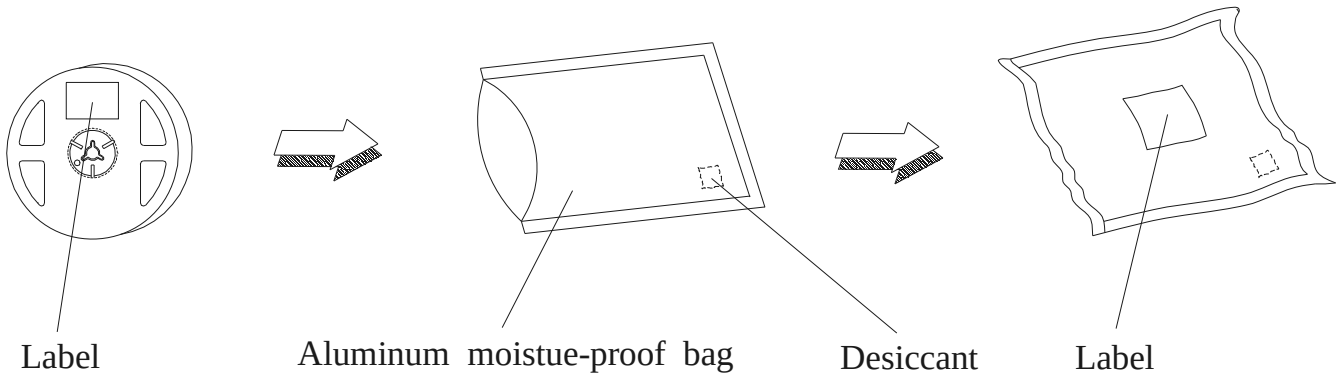
Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Notes:

1. Tolerances unless mentioned ±0.15mm. Unit = mm
2. Minimum packing amount is 250/500/1000/2000 pcs per reel.

Moisture Resistant Packing Process

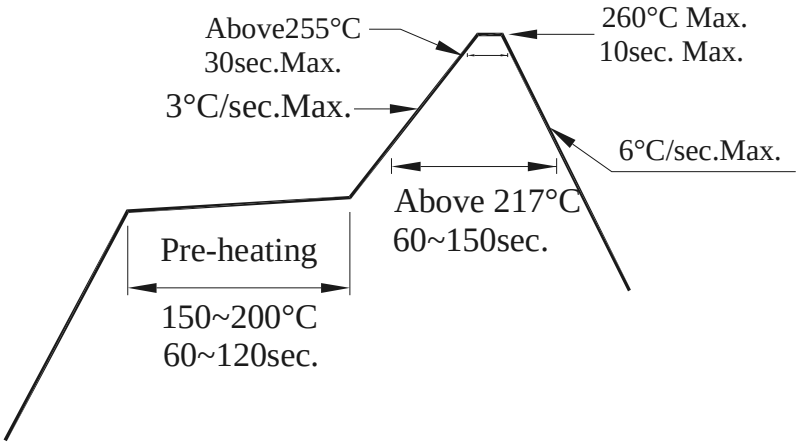


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

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 Moisture proof bag should only be opened immediately prior to usage.
2.2 Environment should be less than 30℃ 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

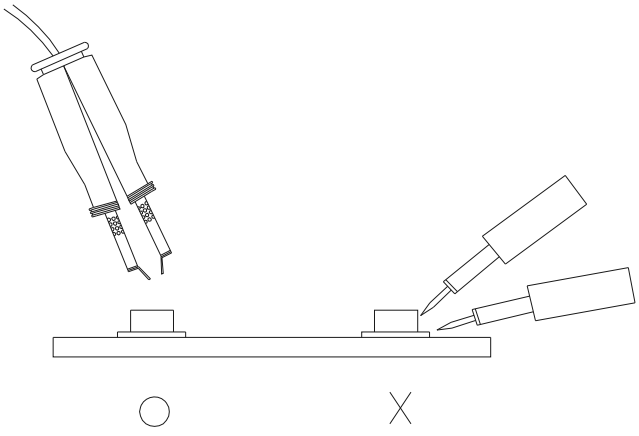
3.1 Pb-free solder temperature profile
3.2 Reflow soldering should not be done more than two times.
3.3 When soldering, do not put stress on the LEDs during heating.
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ 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.



ESD Precaution

Proper storage and handling procedures should be followed to prevent ESD damage to the devices especially when they are removed from the Anti-static bag. Electro-Static Sensitive Devices warning labels are on the packing.

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.

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.
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