

SMD ■ Mini Top View LEDs 65-21UWC-S400-A6-TR8-EU



Features

- White SMT package.
- Optical indicator.
- Wide viewing angle.
- Soldering methods: IR reflow soldering
- Available on tape and reel (8mm Tape).
- Pb-free.
- The product itself will remain within RoHS compliant version.
- Precondition: Bases on JEDEC J-STD 020D Level 3
- Compliance with EU REACH.
- Compliance Halogen Free .(Br<900ppm,Cl<900ppm,Br+Cl<1500ppm).

Description

- The 65-21 series 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 the ideal for light pipe application.

Applications

- Optical indicators.
- Coupling into light guides.
- Backlighting (LCD, cellular phones, switches, keys, displays, illuminated advertising, general lighting).
- Coupling into light guides; Interior automotive lighting (e.g. dashboard backlighting, etc.).

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	White	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	P_d	110	mW
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
ESD	ESD	2000	V
Soldering Temperature	T_{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C 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°C)

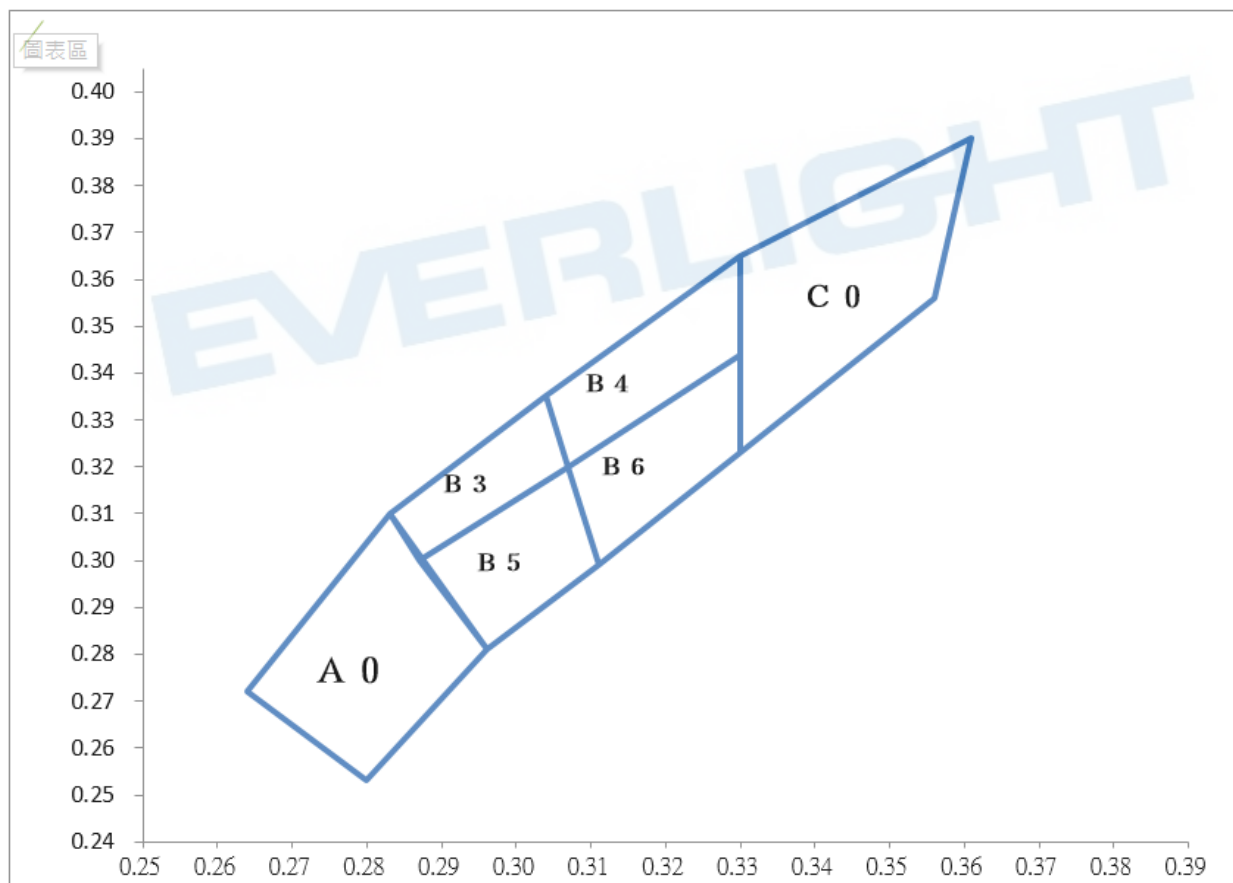
Parameter	Symbol	*Chip Rank	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	A4	106	120	-----	mcd	I _F =20mA
		A5	133	150			
		A6	160	250			
		X7	380	420			
		X8	460	515			
		X9	552	617			
Viewing Angle	2θ _{1/2}	-----	-----	120	-----	deg	I _F =20mA
Forward Voltage	V _F	-----	2.7	3.3	3.7	V	I _F =20mA
Reverse Current	I _R	-----	-----	-----	50	μA	V _R =5V

Notes:

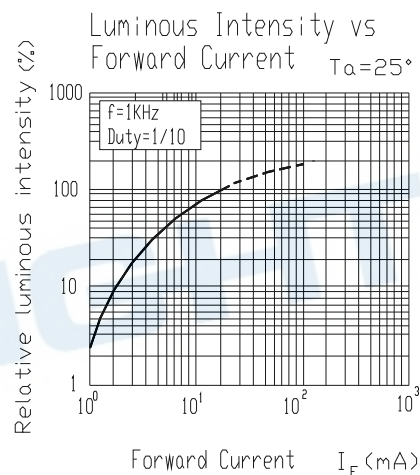
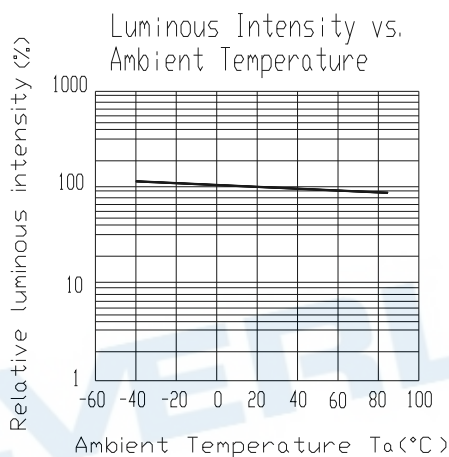
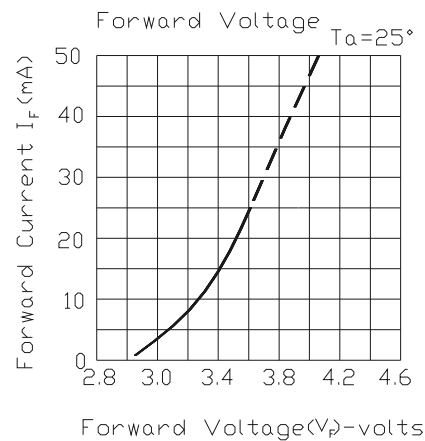
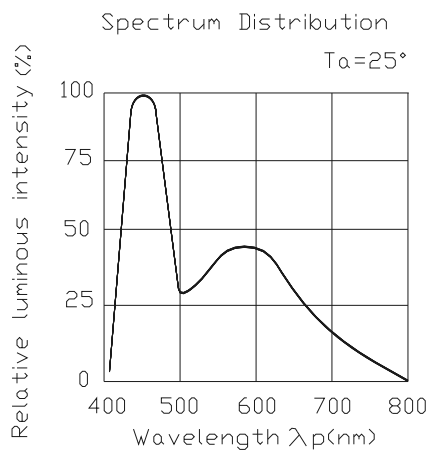
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Forward Voltage: ±0.1V
3. All reliability item are tested under good thermal management. Dynamic reliability are tested at 20mA.
4. LED components are not supposed to be reverse operated.

A0	CIE_x	CIE_y	B5	CIE_x	CIE_y	B4	CIE_x	CIE_y
	0.280	0.248		0.296	0.276		0.307	0.315
	0.264	0.267		0.287	0.295		0.304	0.330
	0.283	0.305		0.307	0.315		0.330	0.360
	0.296	0.276		0.311	0.294		0.330	0.339
B3	CIE_x	CIE_y	B6	CIE_x	CIE_y	C0	CIE_x	CIE_y
	0.287	0.295		0.311	0.294		0.330	0.318
	0.283	0.305		0.307	0.315		0.330	0.360
	0.304	0.330		0.330	0.339		0.361	0.385
	0.307	0.315		0.330	0.318		0.356	0.351

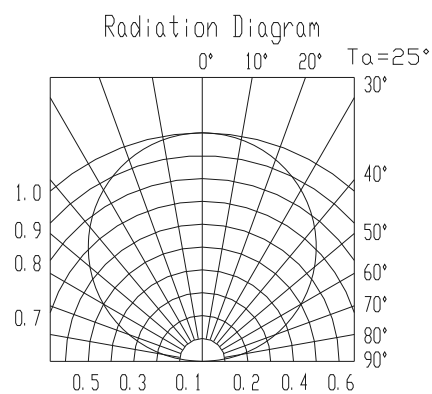
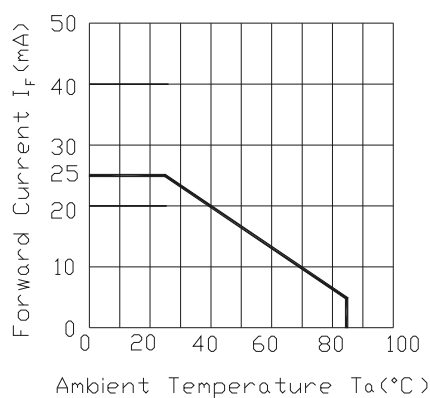
The CIE 1931 Chromaticity Diagram



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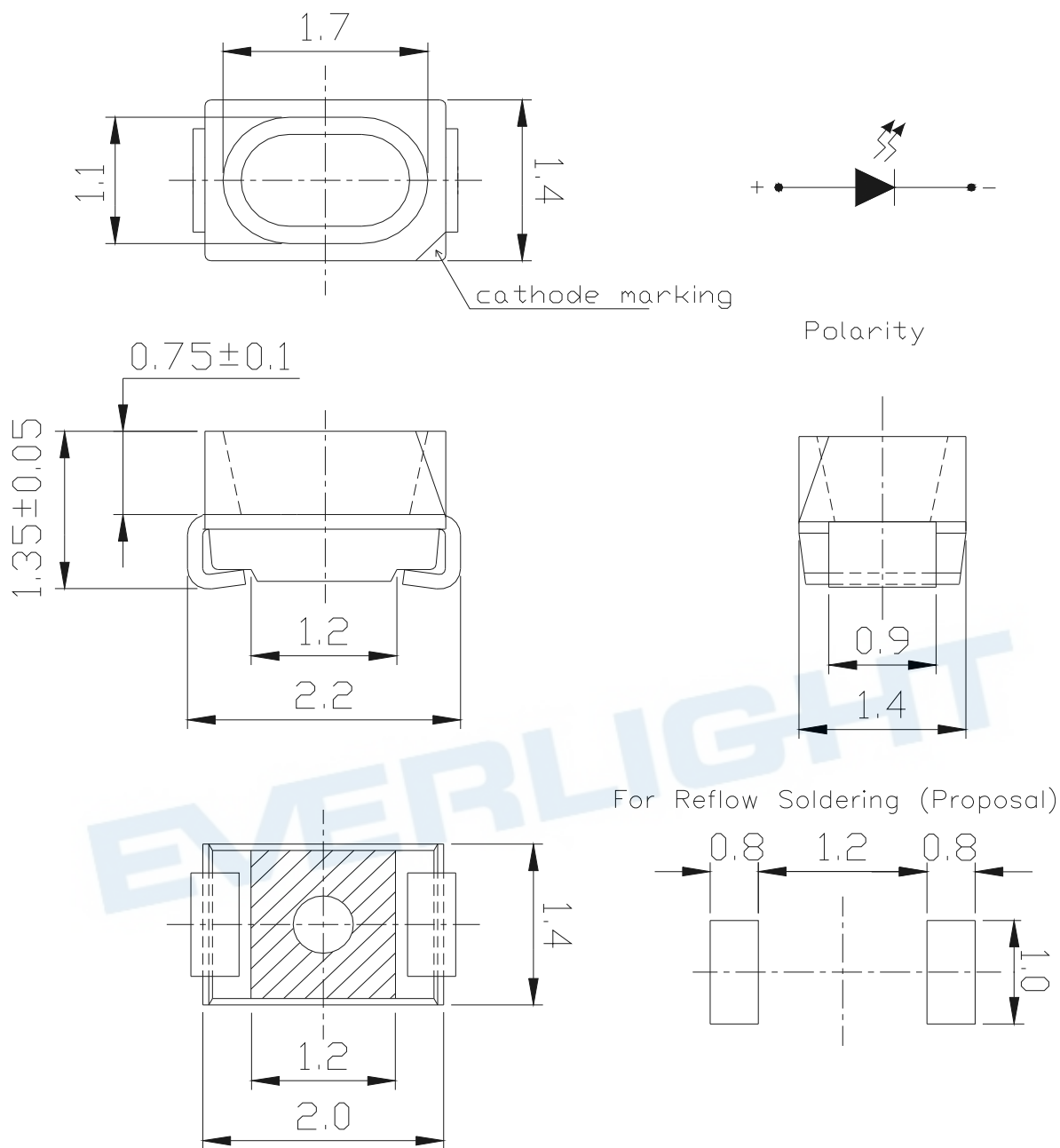


Forward Current Derating Curve



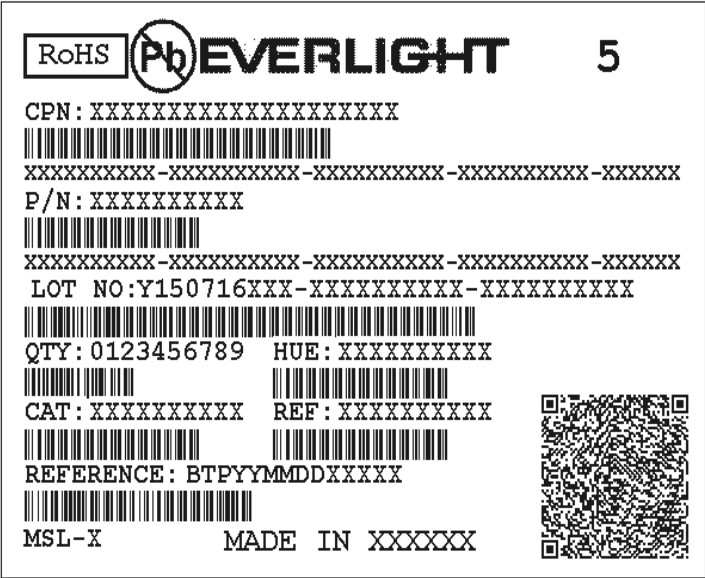
Notes: The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.

Package Dimension



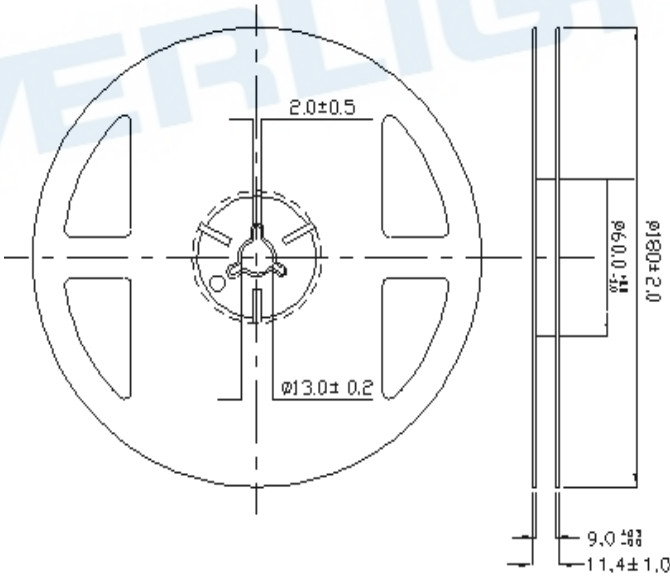
Note: Tolerances unless mentioned $\pm 0.1\text{mm}$. Unit = mm

Moisture Resistant Packing Materials
Label Explanation

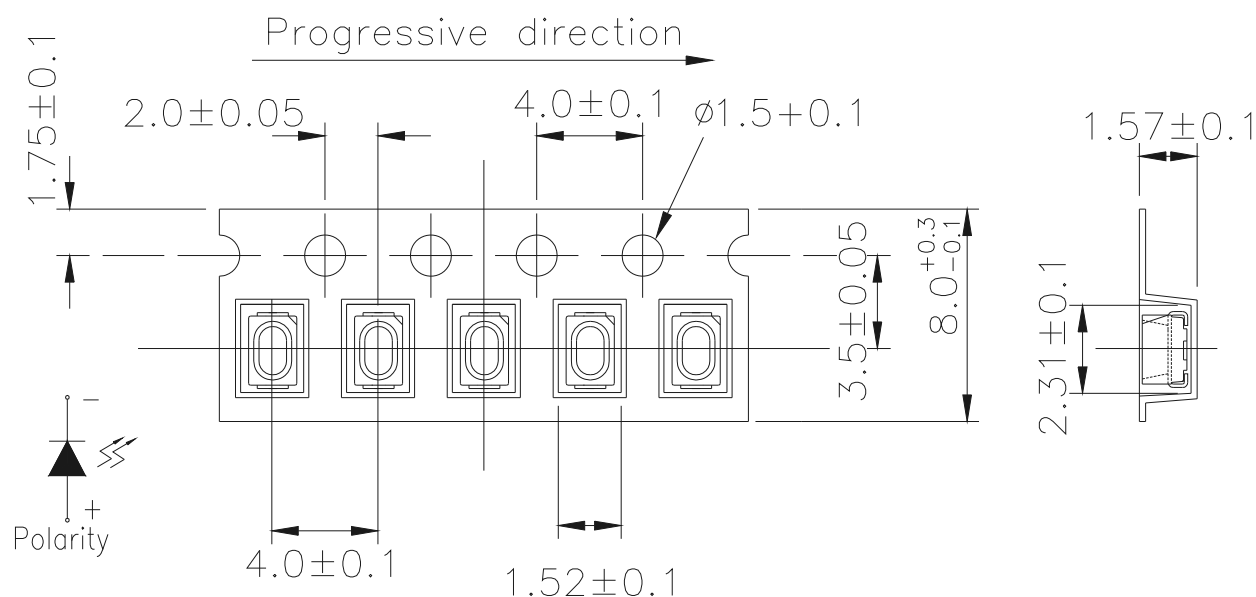


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



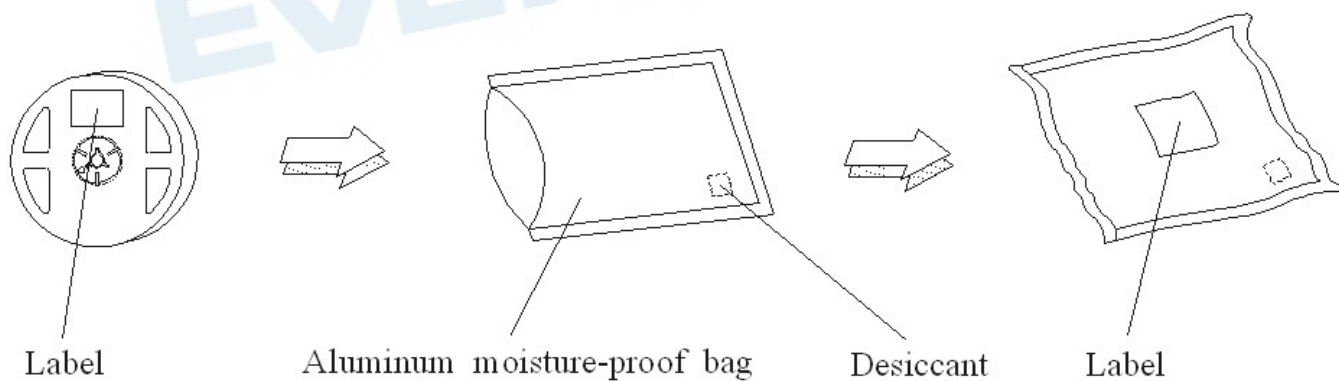
Carrier Tape Dimensions: Loaded Quantity 3000 pcs Per Reel



Notes:

1. Tolerances unless mentioned ± 0.1 mm. Unit = mm
2. Minimum packing amount is 3000 pcs per reel

Moisture Resistant Packing Process



Note: Tolerances unless mentioned ± 0.1 mm. 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°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

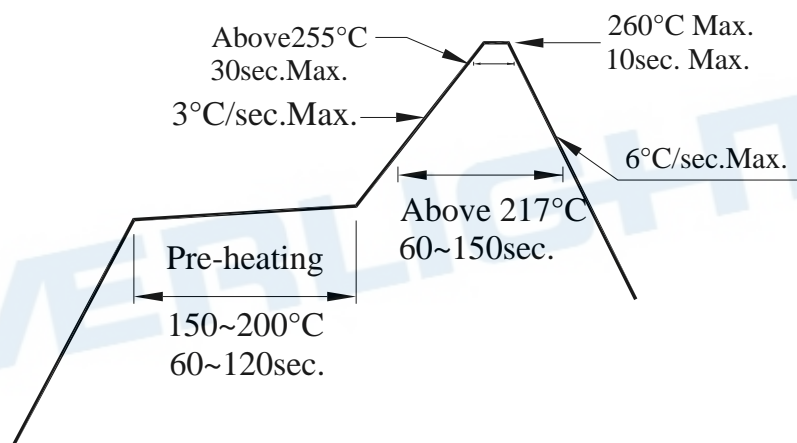
3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

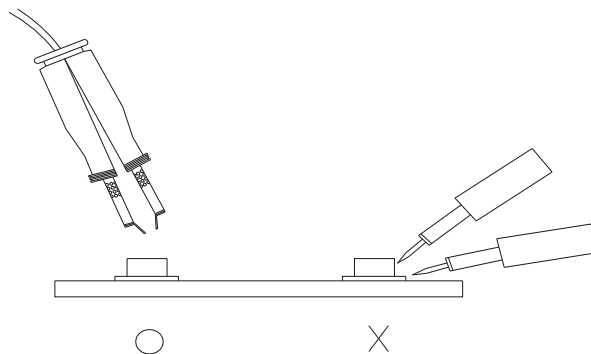
4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds. 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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