Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	Pure White	Yellow Diffused

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	10	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	40	mW
Electrostatic Discharge	ESD_{HBM}	150	V
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Soldering Temperature	Tsol	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	57	-----	140	mcd	I_F=5mA
Viewing Angle	$2\theta_{1/2}$	-----	130	-----	deg	
Forward Voltage	V_F	2.7	----	3.1	V	
Reverse Current	I_R	-----	-----	50	μA	V_R=5V

Note:
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Forward Voltage: ±0.05V

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
P2	57	72	mcd	I_F =5mA
Q1	72	90		
Q2	90	112		
R1	112	140		

Bin Range Of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
29	2.7	2.8	V	I_F =5mA
30	2.8	2.9		
31	2.9	3.0		
32	3.0	3.1		

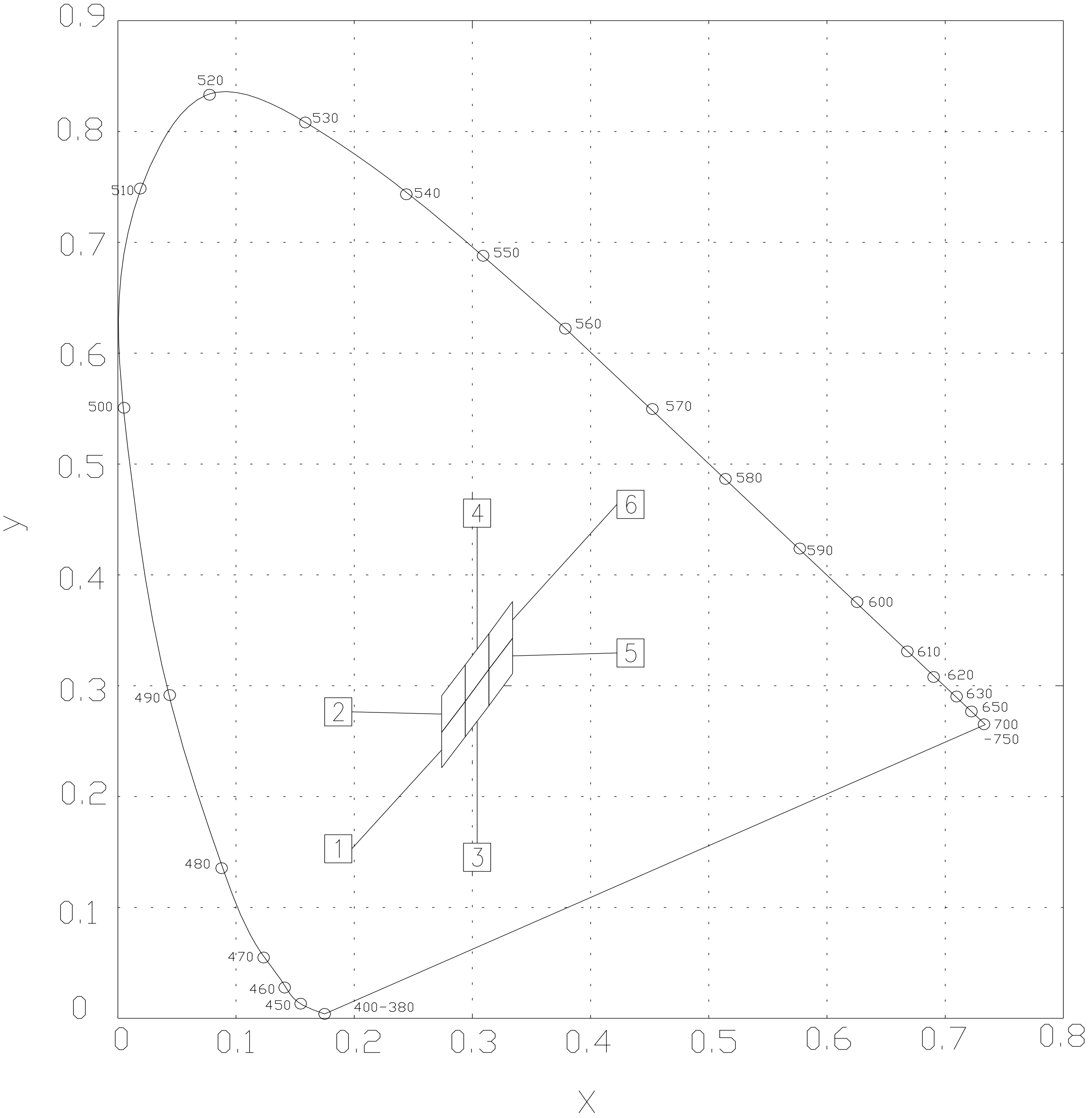
Note:
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Forward Voltage: ±0.05V

Chromaticity Coordinates Specifications for Bin Grading

Bin Code	CIE_x	CIE_y	Condition
1	0.274	0.226	I_F =5mA
	0.274	0.258	
	0.294	0.286	
	0.294	0.254	
2	0.274	0.258	
	0.274	0.291	
	0.294	0.319	
	0.294	0.286	
3	0.294	0.254	
	0.294	0.286	
	0.314	0.315	
	0.314	0.282	
4	0.294	0.286	
	0.294	0.319	
	0.314	0.347	
	0.314	0.315	
5	0.314	0.282	
	0.314	0.315	
	0.334	0.343	
	0.334	0.311	
6	0.314	0.315	
	0.314	0.347	
	0.334	0.376	
	0.334	0.343	

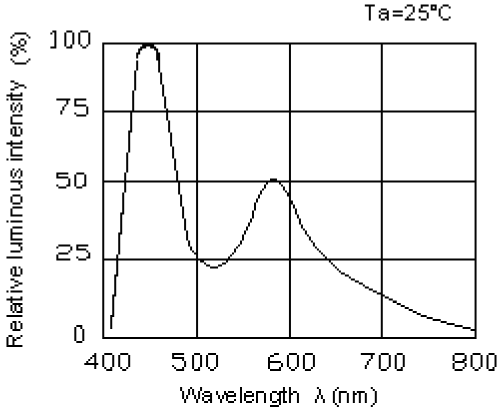
Notes:
1.The C.I.E. 1931 chromaticity diagram (Tolerance ±0.01).
2.The products are sensitive to static electricity and care must be fully taken when handling products.

CIE Chromaticity Diagram

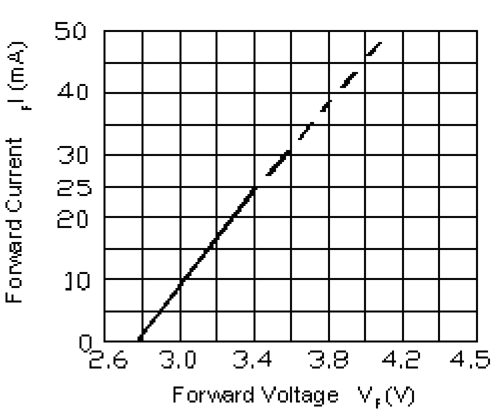


Typical Electro-Optical Characteristics Curves

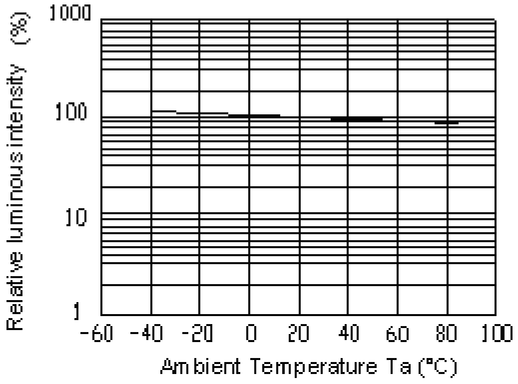
Spectrum Distribution



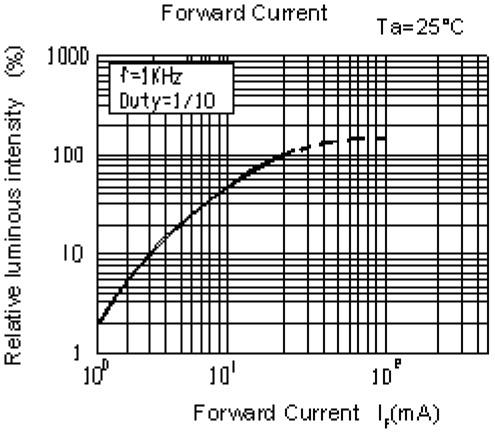
Forward Current vs. Forward Voltage



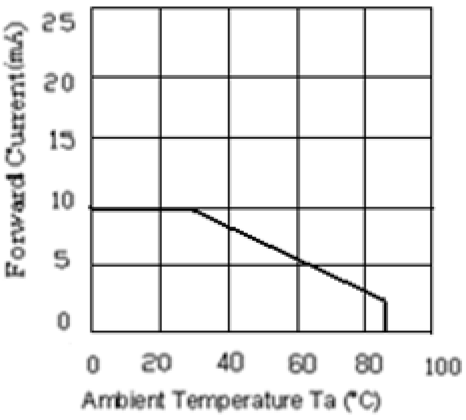
Luminous Intensity vs. Ambient Temperature



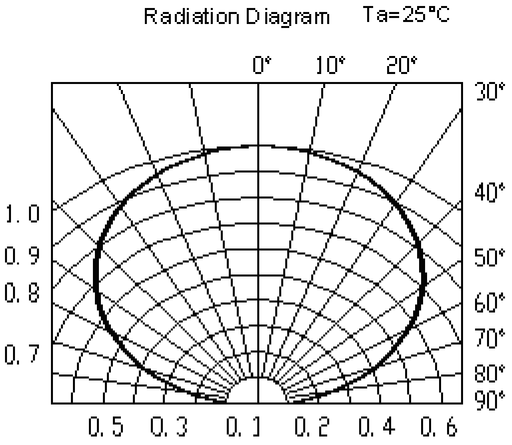
Luminous Intensity vs Forward Current



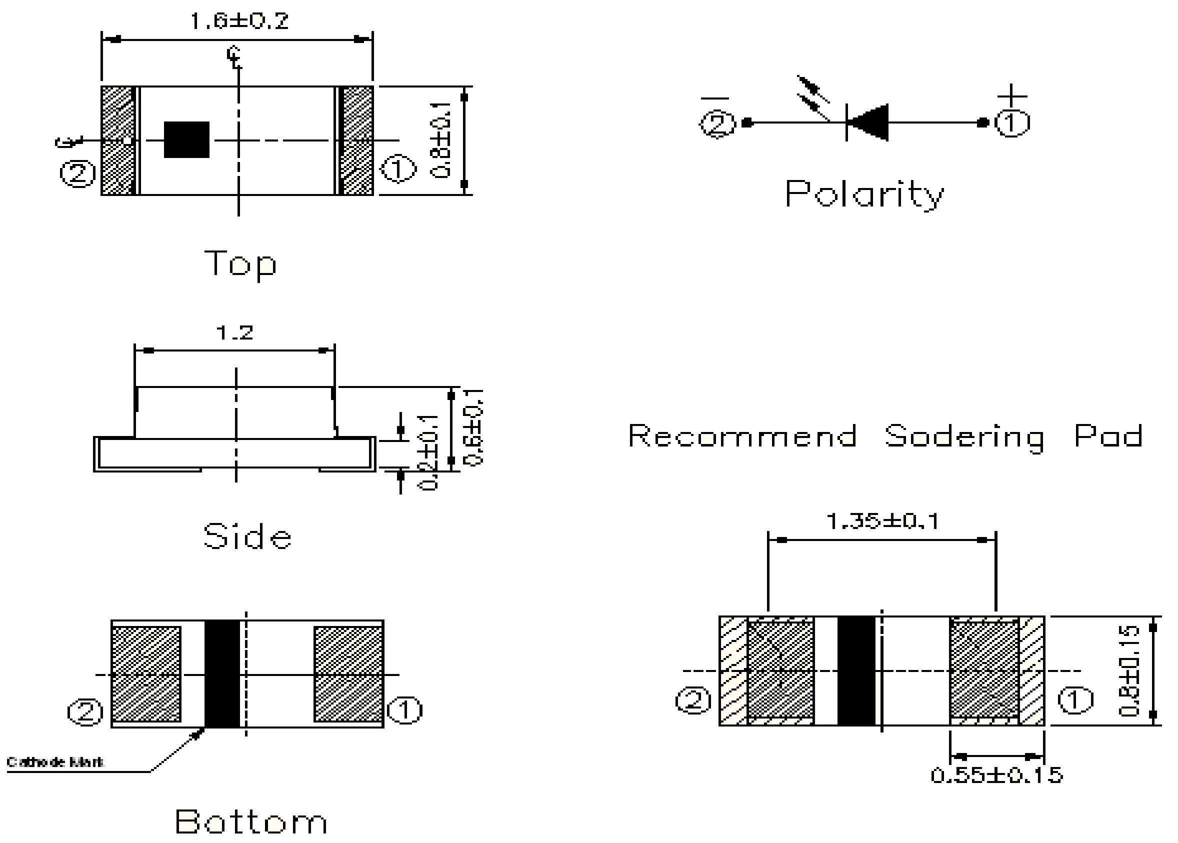
Forward Current Derating Curve



Radiation Diagram



Package Dimension



Suggested pad dimension is just for reference only.
Please modify the pad dimension based on individual need.

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

Label Explanation

RoHS Pb **EVERLIGHT** 5

CPN: XXXXXXXXXXXXXXXXXXXX測試區

XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX

P/N: XXXXXXXXXX

XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX

LOT NO:Y150716XXX-XXXXXXXXXX-XXXXXXXXXX

QTY:0123456789 HUE:XXXXXXXXXX

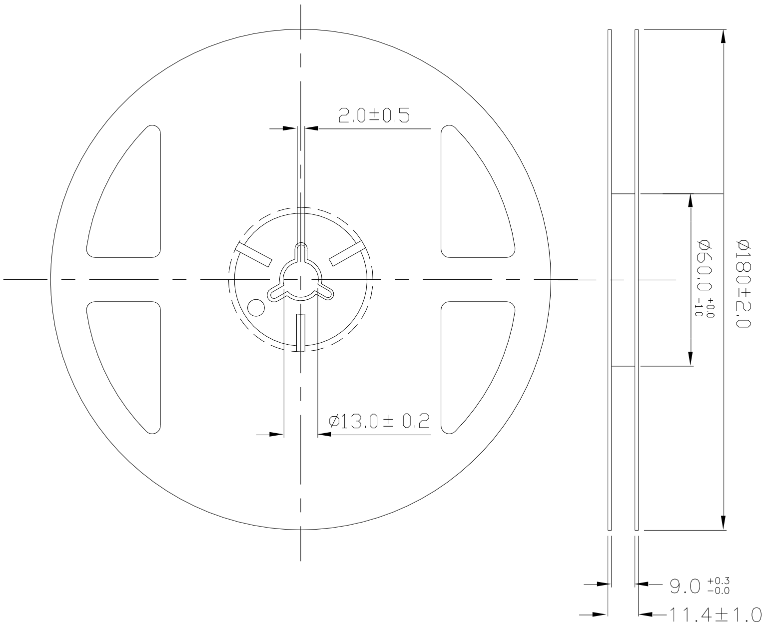
CAT:XXXXXXXXXX REF:XXXXXXXXXX

REFERENCE: BTPYYMMDDXXXXX

MSL-X MADE IN TAIWAN

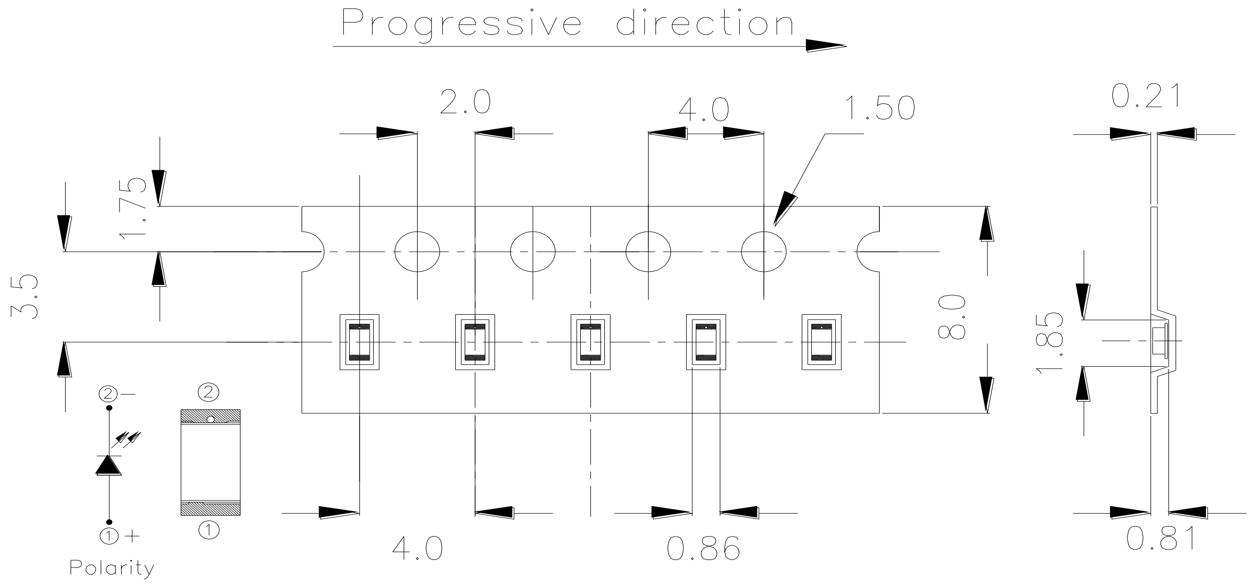
- CPN: Customer’s Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Chromaticity Coordinates & Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



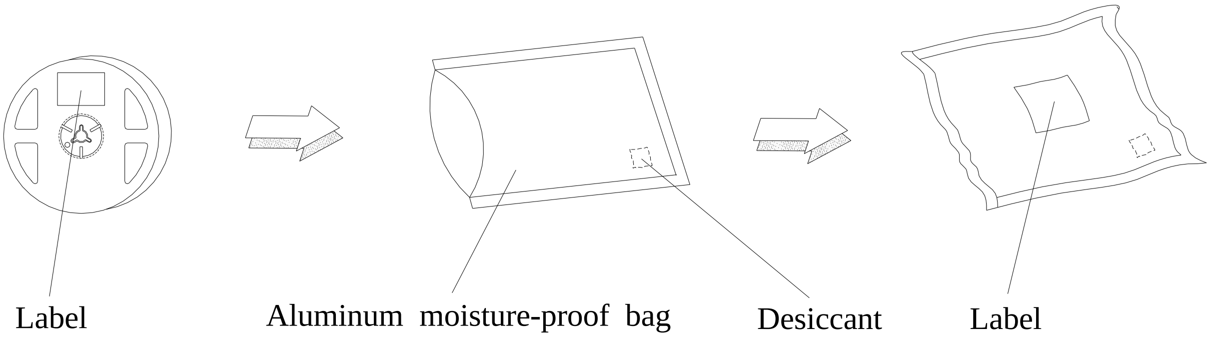
Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

Carrier Tape Dimensions: Loaded quantity 3000 PCS Per reel



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

Moisture Resistant Packaging



Precautions For Use

1. Over-current-proof

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

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

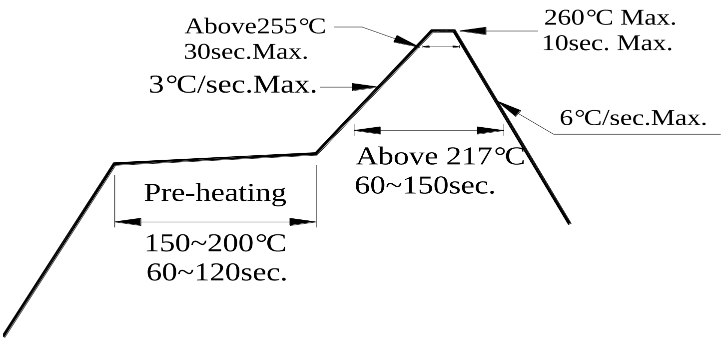
2.3 After opening the package: The LED's floor life is 1 year under 30℃ or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5℃ for 24 hours.

3.1 Pb-free solder temperature profile

3. Soldering Condition



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.

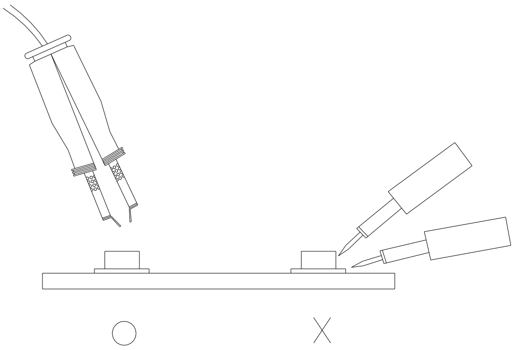
3.4 After soldering, do not warp the circuit board.

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.



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.