EVERLIGHT ELECTRONICS CO., LTD.

Technical Data Sheet
Power Top View LEDs

67-31E/T7C-AAW1X1MZ3/2T

Features

- PLCC-3 package.
- High flux output.
- High current capability.
- White package.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Inter reflector.
- Wide viewing angle.
- Suitable for automatic placement equipment.
- Suitable for reflow and wave solder processes.
- Available on tape and reel (8mm Tape).
- Pb-free.
- The product itself will remain within RoHS compliant version.

Descriptions

The white LED which was fabricated using a blue LED and a phosphor, and the phosphor is excited by blue light and emits yellow fluorescence.
The mixture of blue light and yellow light results in a white emission.

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 Material	Emitted Color	Resin Color
InGaN	Pure White	Water Clear

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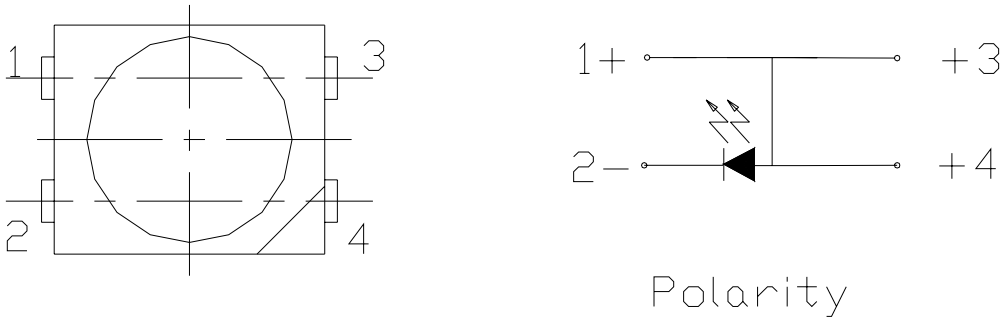
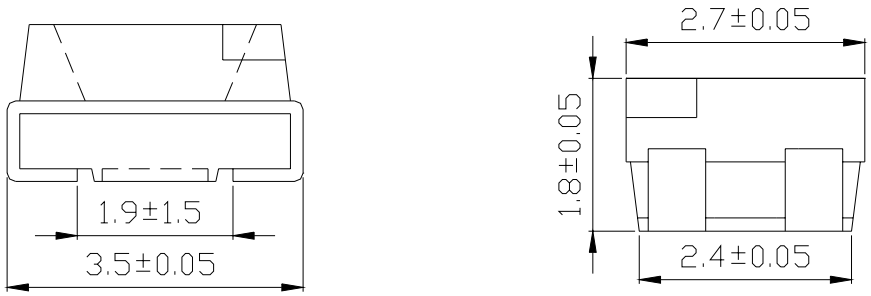
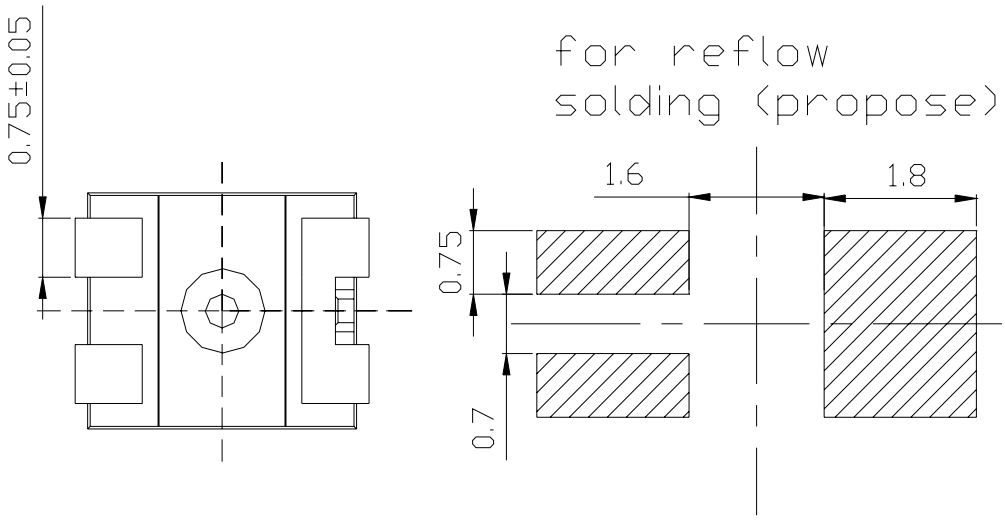
Package Dimensions







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

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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	110	mW
Electrostatic Discharge(HBM)	ESD	2000	V
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +100	℃
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.	Units	Condition
Luminous Intensity	I_V	1120	-----	2250	mcd	I_F=30mA
Viewing Angle	2θ 1/2	-----	120	-----	deg	I_F=30mA
Forward Voltage	V_F	2.75	-----	3.95	V	I_F=30mA
Reverse Current	I_R	-----	-----	50	μA	V_R=5V

Note:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Forward Voltage: ±0.1V

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Bin Range of Luminous Intensity

Bin	Min.	Max.	Unit	Condition
W1	1120	1420	mcd	I_F=30mA
W2	1420	1800		
X1	1800	2250		

Bin Range of Forward Voltage

Groups	Bin	Min.	Max.	Unit	Condition
M	5	2.75	3.05	V	I_F =30mA
	6	3.05	3.35		
	7	3.35	3.65		
	8	3.65	3.95		

Note:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Forward Voltage: ±0.1V

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Bin Range of Chromaticity Coordinates

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
AA	5K	0.2960	0.2590	5L	0.2910	0.2680
		0.2910	0.2680		0.2850	0.2790
		0.3100	0.2970		0.3070	0.3120
		0.3130	0.2840		0.3100	0.2970
	6K	0.3130	0.2840	6L	0.3100	0.2970
		0.3100	0.2970		0.3070	0.3120
		0.3300	0.3300		0.3300	0.3470
		0.3300	0.3100		0.3300	0.3300
	7K	0.3300	0.3100	7L	0.3300	0.3300
		0.3300	0.3300		0.3300	0.3470
		0.3382	0.3420		0.3470	0.3710
		0.3520	0.3440		0.3450	0.3520
	8K	0.3520	0.3440	8L	0.3450	0.3520
		0.3380	0.3420		0.3470	0.3710
		0.3640	0.3800		0.3670	0.4010
		0.3600	0.3570		0.3640	0.3800

Note:

1. Tolerance of the Chromaticity Coordinates: ±0.01

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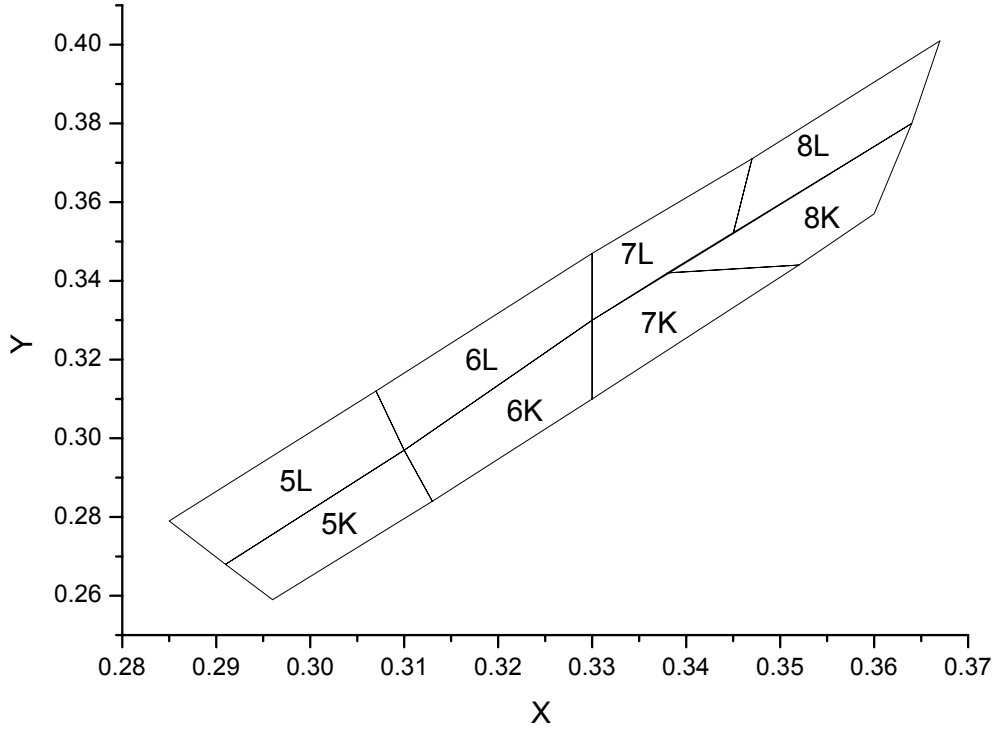
The CIE 1931 Chromaticity Diagram



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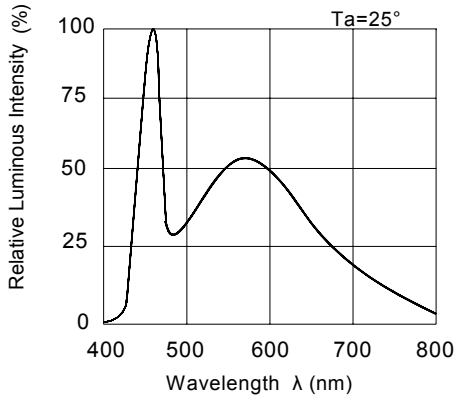
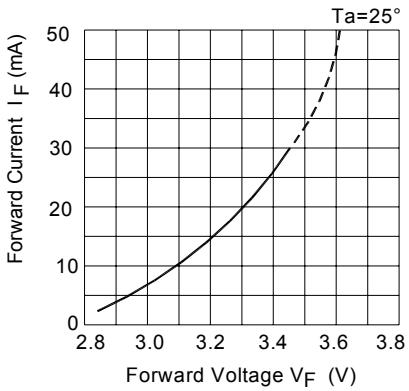
Typical Electro-Optical Characteristic Curves

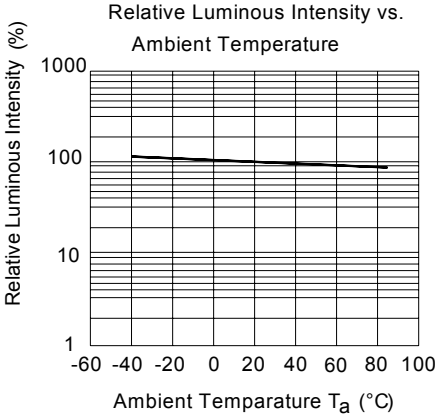
Spectrum Distribution



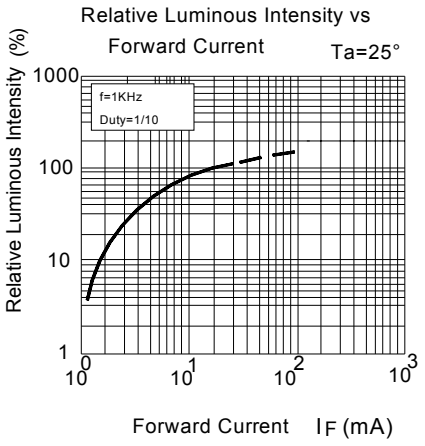
Forward Voltage



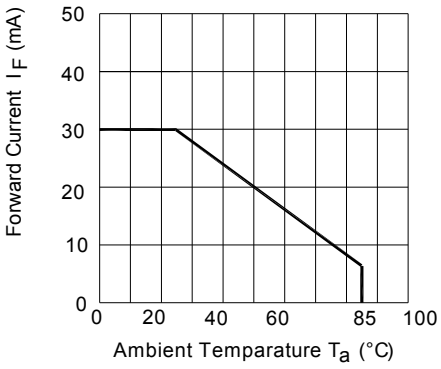
Relative Luminous Intensity vs. Ambient Temperature



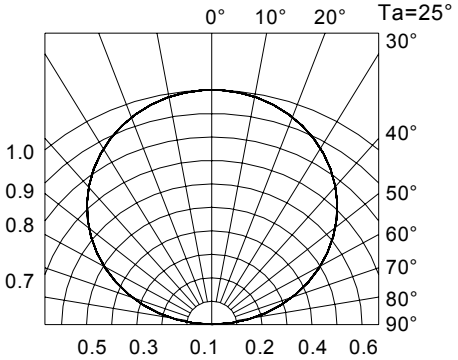
Relative Luminous Intensity vs Forward Current



Forward Current Derating Curve



Radiation Diagram



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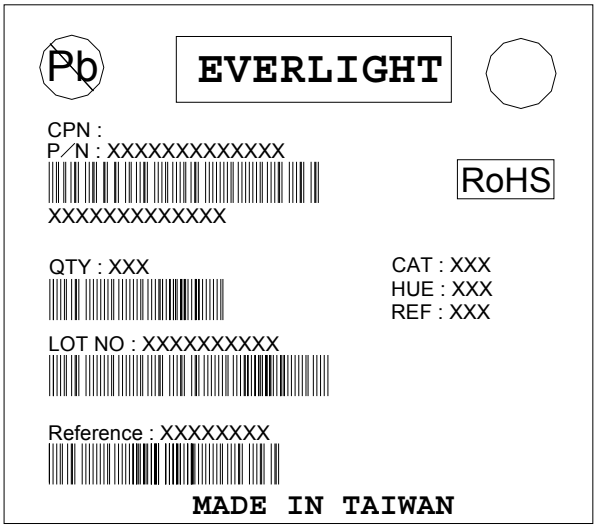
Label Explanation

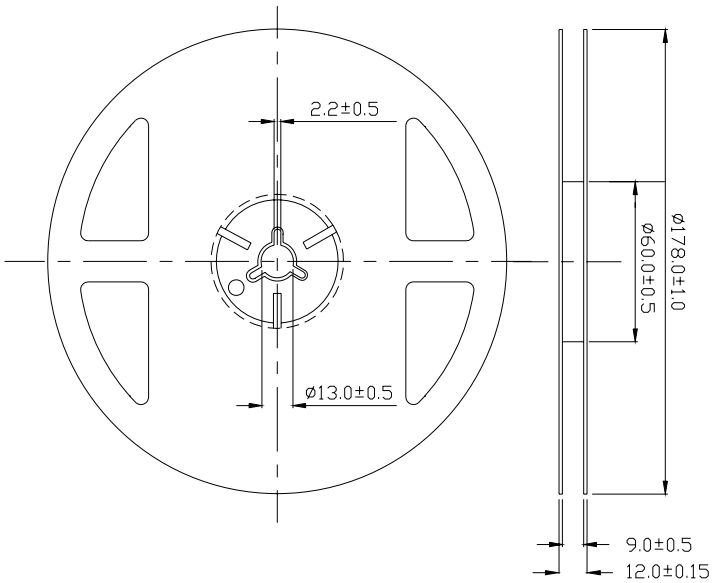
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank



Reel Dimensions



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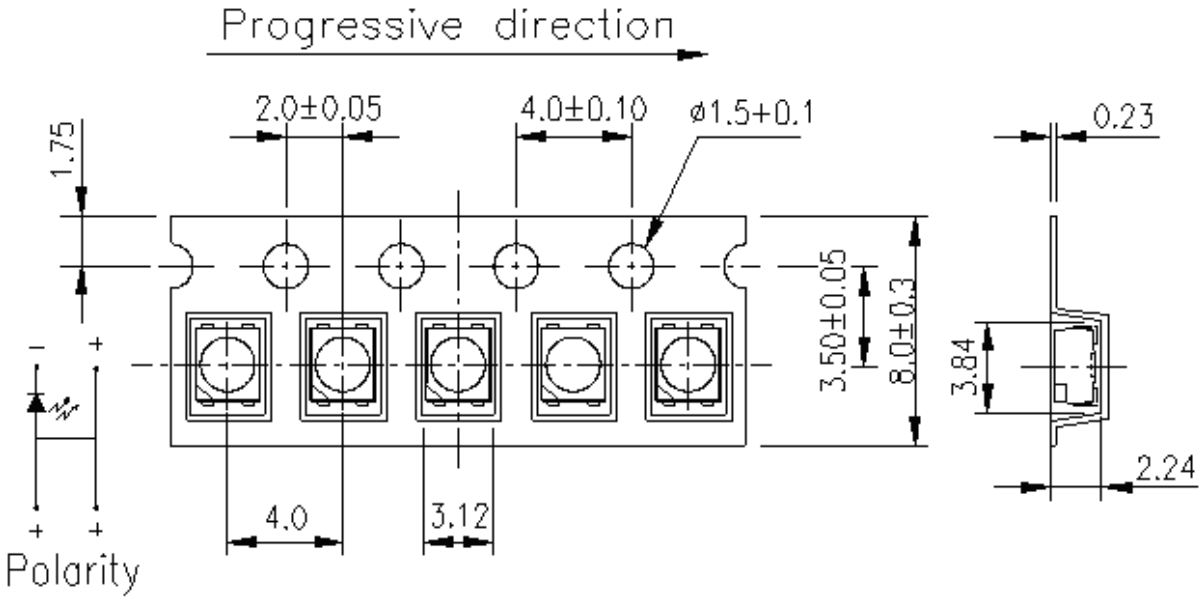
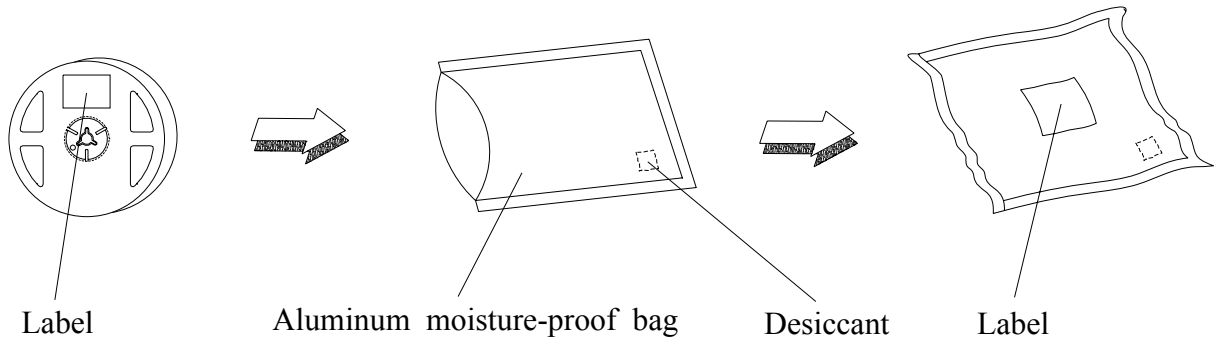
Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Note: Tolerance Unless Dimension ±0.1mm Unit = mm

Moisture Resistant Packaging



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Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.
Confidence level：90%
LTPD：10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260℃±5℃ Min. 5 sec.	6 Min.	22 PCS	0/1
2	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100℃	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40℃	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I_F = 20 mA / 25℃	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 Hrs.	22 PCS.	0/1

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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.

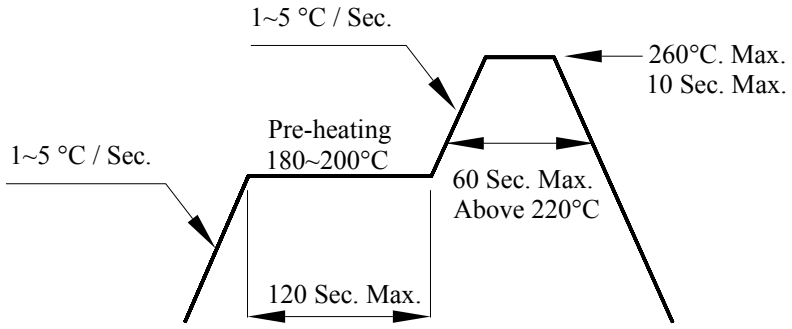
   2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

   2.3 After opening the package: The LED's floor life are 72 hours 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. 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.

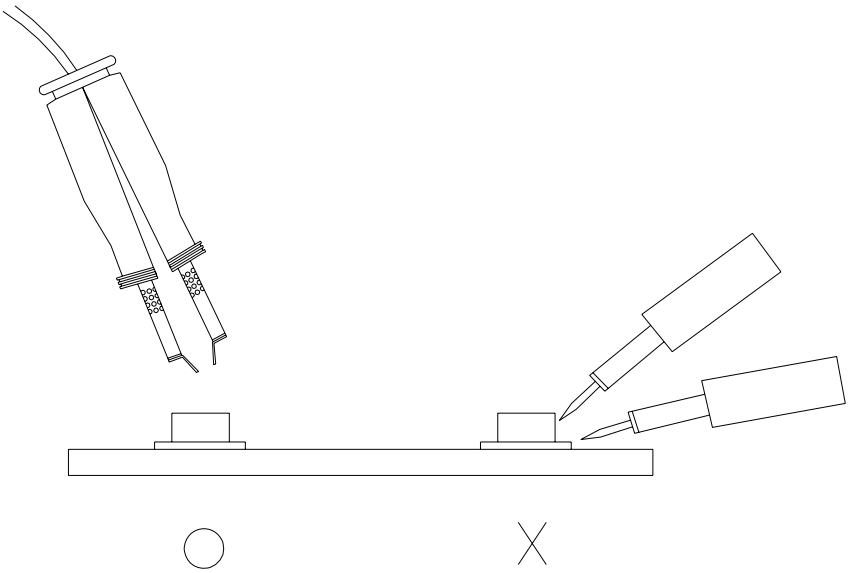
   3.4 After soldering, do not warp the circuit board.

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.



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