

Technical Data Sheet

Top View LEDs (Height 1.2mm)

50-115BUMC/3842NBE/TR8-T

Features

- Top view white LED
- White SMT package
- Lead frame package with individual 2 pins
- Wide viewing angle
- Soldering methods: IR reflow soldering
- Pb-free
- ESD protection
- The product itself will remain within RoHS compliant version.



Descriptions

- Due to the package design, 50-115B has wide viewing angle, low power consumption and white LEDs are devices that are materialized by combing blue chips and special phosphor. This feature makes the LED ideal for light guide application.

Applications

- LCD Back Light
- Mobile Phones
- Indicators
- Illuminations
- Switch Lights

Device Selection Guide

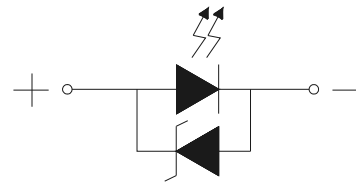
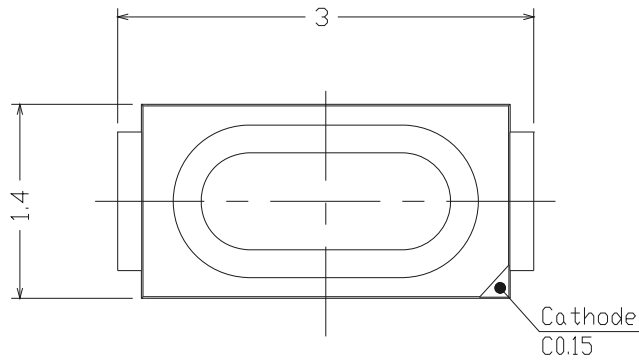
Chip	Emitted Color	Resin Color
Material		
InGaN	Pure White	Water Clear

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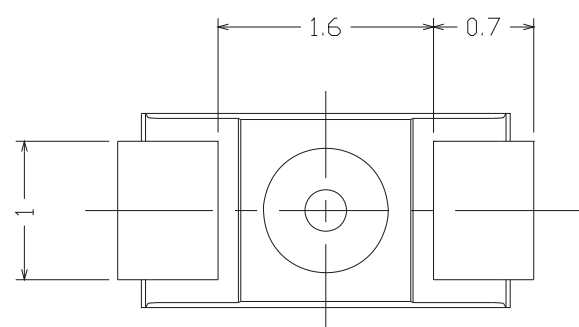
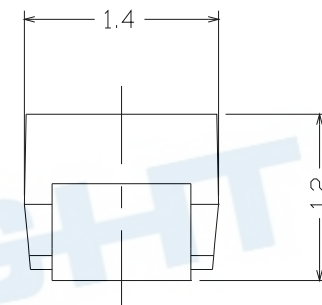
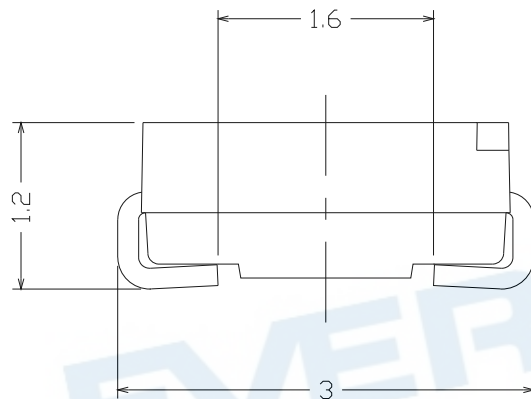
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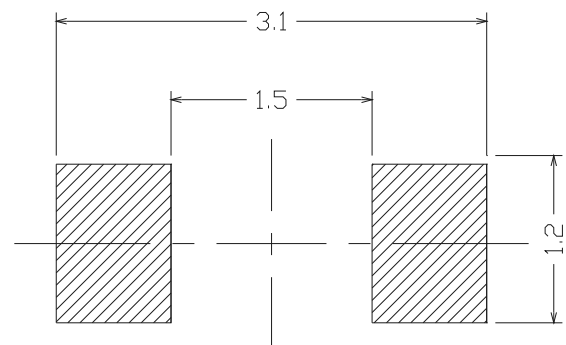
Package Outline Dimensions



PAD output



Bot. view



Soldering patterns

Note: The tolerances unless dimension are $\pm 0.1\text{mm}$.

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Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
DC Forward Current	I_F	30	mA
Pulse Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Operating Temperature	T_{opr}	-30 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Soldering Temperature	T_{sol}	Reflow Soldering: 260°C for 10sec. Hand Soldering: 350°C for 3sec.	

Note*1:

The products are sensitive to static electricity and must be carefully taken when handling products.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_V	2000	---	2300	mcd	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	$I_F=20mA$
Forward Voltage	V_F	2.9	---	3.4	V	$I_F=20mA$

Notes:

1. Tolerance of Luminous Intensity: $\pm 8\%$
2. Tolerance of Forward Voltage: $\pm 0.05V$
3. Estimated lifetime, I_V decay ratio reaches 50% comparing to initial luminous intensity, is based on Everlight internal test result.

Technical Data Sheet**Top View LEDs (Height 1.2mm)****50-115BUMC/3842NBE/TR8-T****Bin Range of Luminous Intensity**

Bin Code	Min.	Max.	Unit	Condition
38	2000	2050	mcd	$I_F=20\text{mA}$
39	2050	2100		
40	2100	2150		
41	2150	2200		
42	2200	2300		

Note: Tolerance of Luminous Intensity: $\pm 8\%$ **Bin Range of Forward Voltage**

Group	Bin Code	Min.	Max.	Unit	Condition
E	5-2-3	2.9	3.0	V	$I_F=20\text{mA}$
	6-1-3	3.0	3.1		
	6-2-3	3.1	3.2		
	7-1-3	3.2	3.3		
	7-2-3	3.3	3.4		

Note: Tolerance of Forward Voltage: $\pm 0.05\text{V}$

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Bin Range of Chromaticity Coordinates ($I_F = 20 \text{ mA}$)

Bin code	CIE_x	CIE_y	Bin code	CIE_x	CIE_y	Condition
NB5-3-4	0.3000	0.2830	B5-3b-2	0.3021	0.2782	$I_F=20\text{mA}$
	0.2975	0.2885		0.3000	0.2830	
	0.3015	0.2955		0.3040	0.2900	
	0.3040	0.2900		0.3062	0.2853	
NB5-4-3	0.3040	0.2900	B5-4b-1	0.3062	0.2853	
	0.3015	0.2955		0.3040	0.2900	
	0.3055	0.3025		0.3080	0.2970	
	0.3080	0.2970		0.3102	0.2923	
NB5-4-4	0.3080	0.2970	B5-4b-2	0.3102	0.2923	
	0.3055	0.3025		0.3080	0.2970	
	0.3095	0.3095		0.3120	0.3040	
	0.3120	0.3040		0.3142	0.2993	
NB6-3-3	0.3120	0.3040	B6-3b-1	0.3142	0.2993	
	0.3095	0.3095		0.3120	0.3040	
	0.3135	0.3165		0.3160	0.3110	
	0.3160	0.3110		0.3182	0.3063	

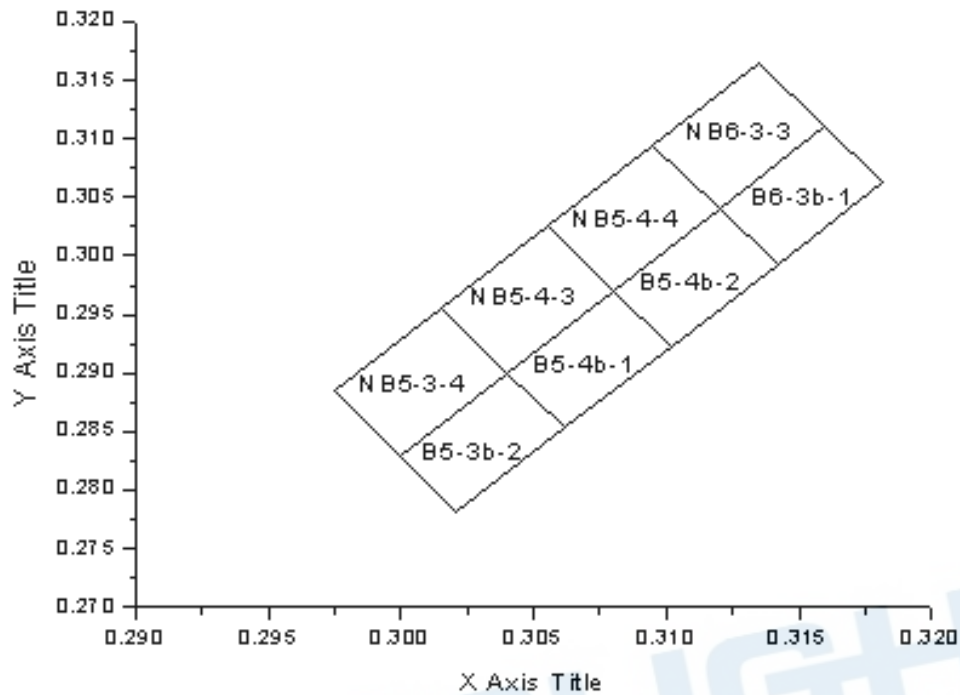
Note: Tolerance of Chromaticity Coordinates: ± 0.007

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The C.I.E. 1931 Chromaticity Diagram

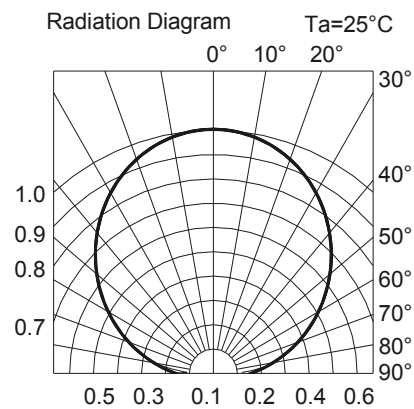
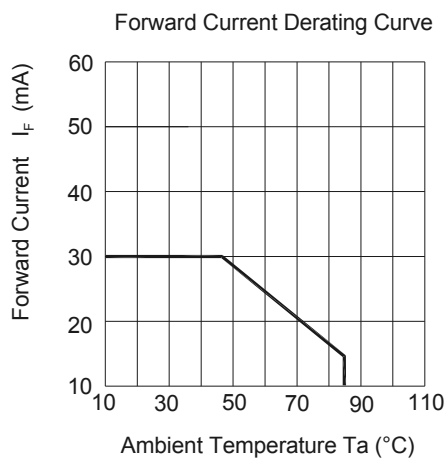
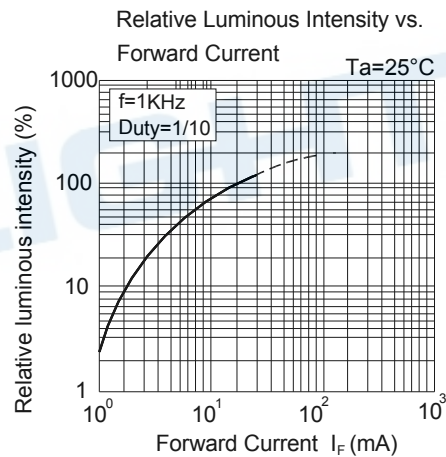
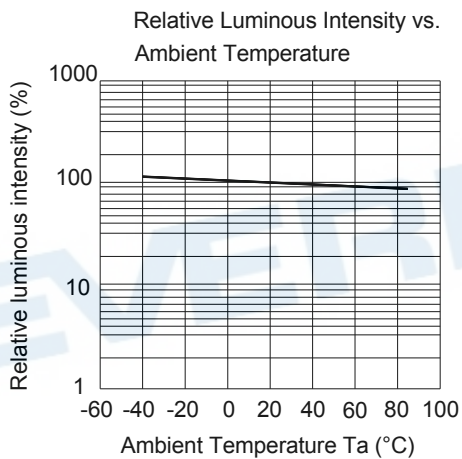
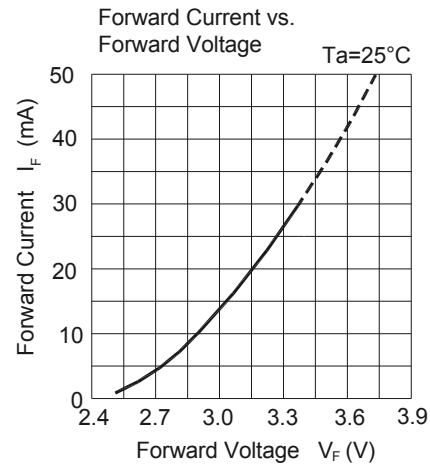
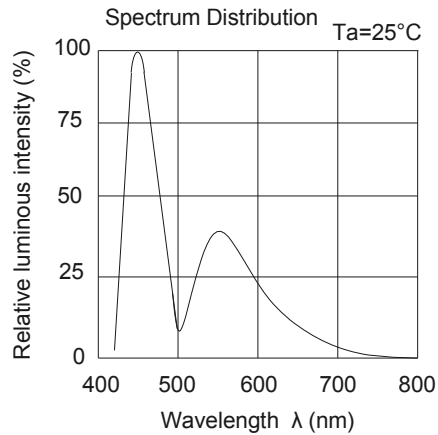


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Typical Electro-Optical Characteristics



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Label Explanation

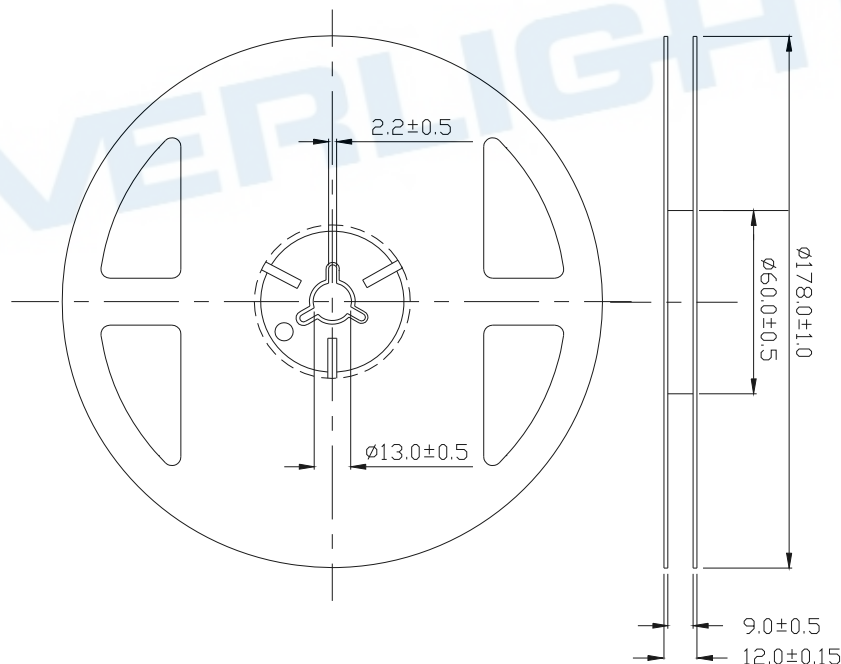
CAT: Luminous Intensity Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank

	EVERLIGHT	
CPN : P/N : XXXXXXXXXXXX  XXXXXXXXXXXX		RoHS
QTY : XXX  LOT NO : XXXXXXXXXX 		CAT : XXX HUE : XXX REF : XXX
Reference : XXXXXXXX  MADE IN TAIWAN		

Reel Dimensions



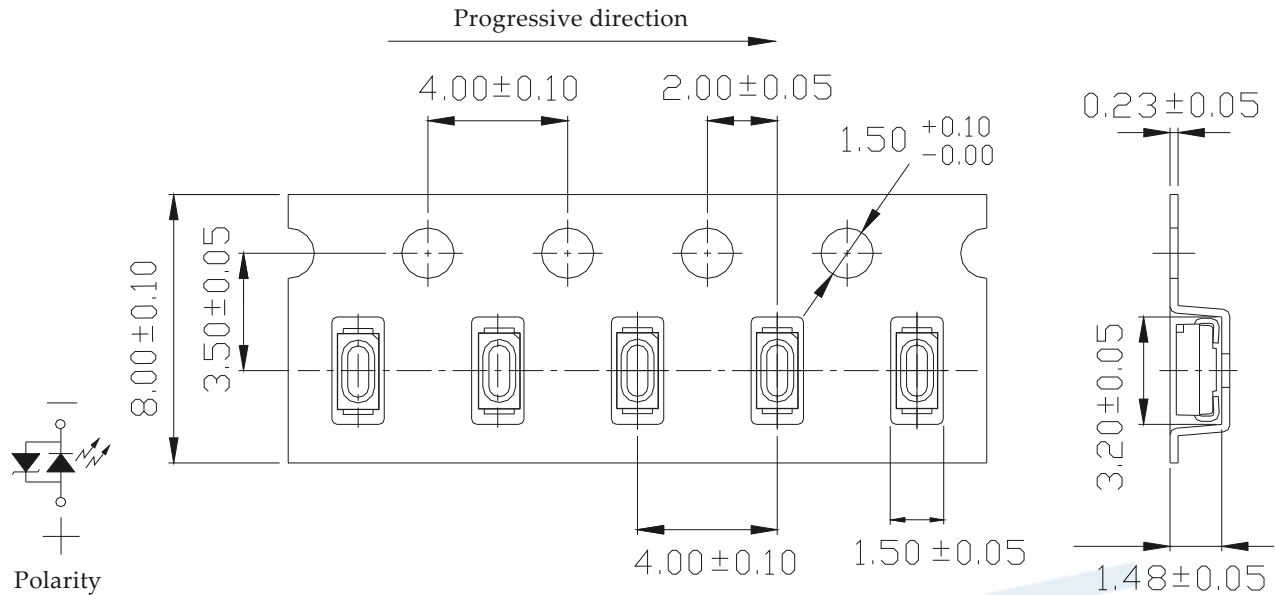
Note: The tolerances unless dimension are ± 0.1 mm.

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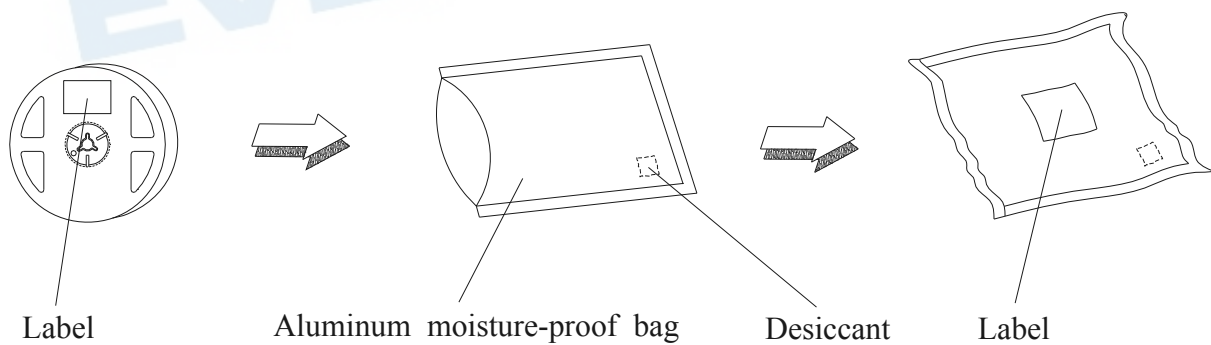
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Carrier Tape Dimensions: Loaded Quantity 250 up/500/1000/2000 pcs. Per Reel



Note: The tolerances unless dimension are ± 0.1mm.

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.	Item	Test Conition		Test Hours/ Times	Criteria (at std. IF)
		Temp./ Humidity	IF (mA)		
1	Reflow Soldering	Temp.: 260°C ±5°C Max. 10 sec.		2 time	△Iv < ±10% △VF < ±10%
2	Thermal Cycle	-40°C ~ 100°C 30min. (5min.) 30min.		200 cycles	Iv > 70%, VF < 110%,
3	Thermal Shock	-10°C ~ 100°C 20min. (<15sec.) 20min.		200 cycles	
4	Low Temp. Storage	TA=-40°C	--	1000 hrs	
5	High Temp. Storage	TA=100°C	--	1000 hrs	
6	Temp. Humidity Storage	TA=60°C / 90%RH	--	1000 hrs	
7	Steady State Operating Life of Low Temp.	TA=-40°C	20	1000 hrs	
8	Steady State Operating Life Condition 1	TA=25°C / Room Hum.	20	1000 hrs	
9	Steady State Operating Life Condition 2	TA=60°C	20	1000 hrs	
10	Steady State Operating Life of High Temp.	TA=85°C	5	1000 hrs	
11	Steady State Operating Life of High Humidity Heat	TA=60°C / 90%RH	20	1000 hrs	

※ Sampling for each test item: 22 (pcs.)

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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 used within one year and kept at 30°C or less and 70%RH or less.

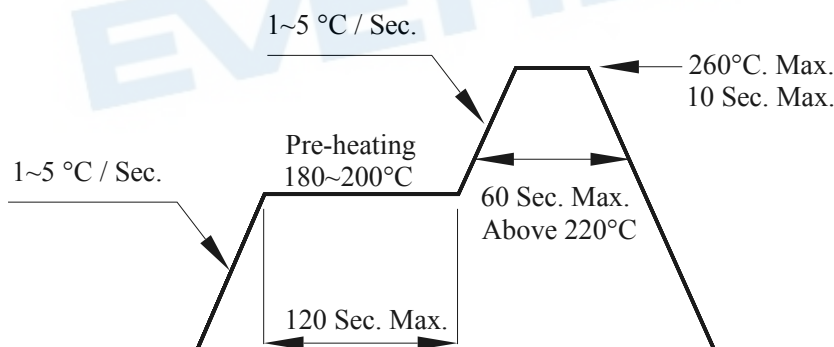
2.3 After opening the package: We recommend that the LED should be soldered quickly (within 3 days). The soldering condition is 30°C or less and 60%RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

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°C for 24 hours. (One time only)

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.

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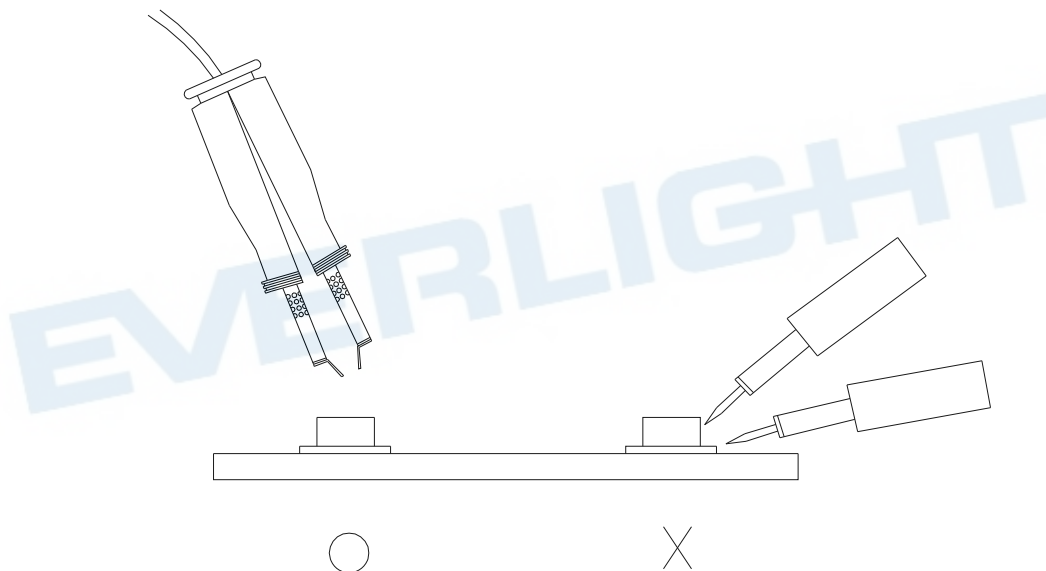
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4. Soldering Iron

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.



EVERLIGHT ELECTRONICS CO., LTD.
Office: No.6-8, Zhonghua Rd.
Shulin Dist., New Taipei City, Taiwan, R.O.C.

Tel: +886-2 2685-6688
Fax: +886-2 2685-6898
<http://www.everlight.com>