

Side View LEDs (Height 0.4mm)

99-218LM2C/3842S96/TR8-T

Features

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

Descriptions

- Due to the package design, 99-218 has wide viewing angle, low power consumption and white LEDs are devices which are materialized by combing Blue LEDs and special phosphors. This feature makes the LED ideal for light guide application.

Applications

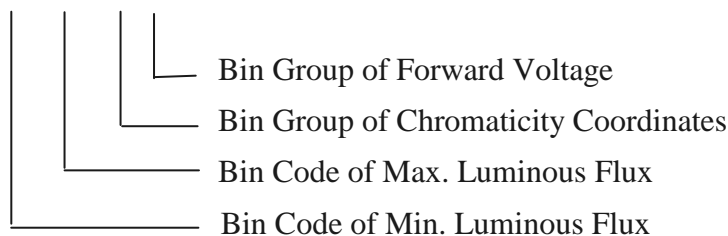
- LCD Back Light.
- Mobile phones .
- Indicators.
- Illuminations.
- Switch Lights.

Device Selection Guide

Chip	Emitted Color	Resin Color
Material		
InGaN	White	Water Clear

Coding:

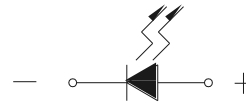
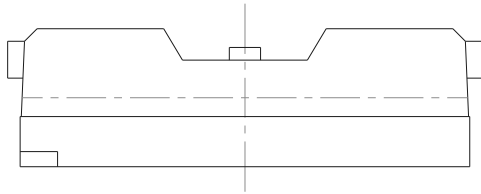
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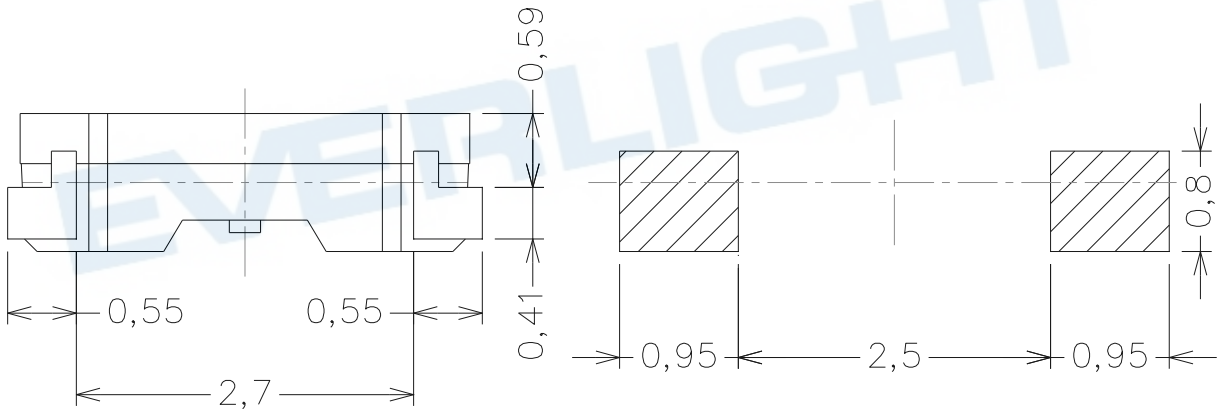
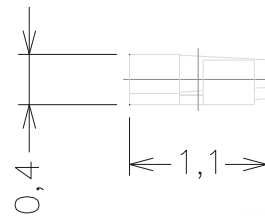
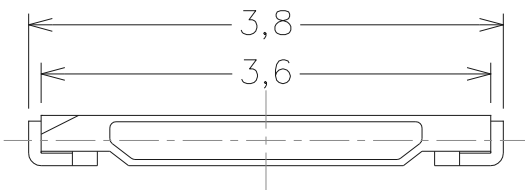
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Package Outline Dimensions



Polarity



Note:

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

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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 @10ms)	I _{FP}	100	mA
Power Dissipation	P _d	110	mW
Electrostatic Discharge(HBM) ^{*1}	ESD	2000	V
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Soldering Temperature	T _{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

Note: 1. The products are sensitive to static electricity and care must be fully 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	2θ _{1/2}	-----	110	-----	deg	
Forward Voltage	V _F	2.95	-----	3.45	V	
Reverse Current	I _R	-----	-----	50	μA	V _R =5V

Notes:

1. Tolerance of Luminous Intensity : ±7%
2. Tolerance of Forward Voltage : ±0.05V

Technical Data Sheet



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Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
38	2000	2050	mcd	I _F =20mA
39	2050	2100		
40	2100	2150		
41	2150	2200		
42	2200	2300		

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
6-1	2.95	3.05	V	I _F =20mA
6-2	3.05	3.15		
7-1	3.15	3.25		
7-2	3.25	3.35		
8-1	3.35	3.45		

Notes:

- 1.Tolerance of Luminous Intensity : $\pm 7\%$
- 2.Tolerance of Forward Voltage : $\pm 0.05V$

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Bin Range of Chromaticity Coordinates

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
NB5-3-1	0.2935	0.2815	NB5-3-2	0.2975	0.2885
	0.2910	0.2870		0.2950	0.2940
	0.2950	0.2940		0.2990	0.3010
	0.2975	0.2885		0.3015	0.2955
NB5-3-3	0.2960	0.2760	NB5-3-4	0.3000	0.2830
	0.2935	0.2815		0.2975	0.2885
	0.2975	0.2885		0.3015	0.2955
	0.3000	0.2830		0.3040	0.2900
NB5-4-1	0.3015	0.2955	NB5-4-2	0.3055	0.3025
	0.2990	0.3010		0.3030	0.3080
	0.3030	0.3080		0.3070	0.3150
	0.3055	0.3025		0.3095	0.3095
NB5-4-3	0.3040	0.2900	NB5-4-4	0.3080	0.2970
	0.3015	0.2955		0.3055	0.3025
	0.3055	0.3025		0.3095	0.3095
	0.3080	0.2970		0.3120	0.3040

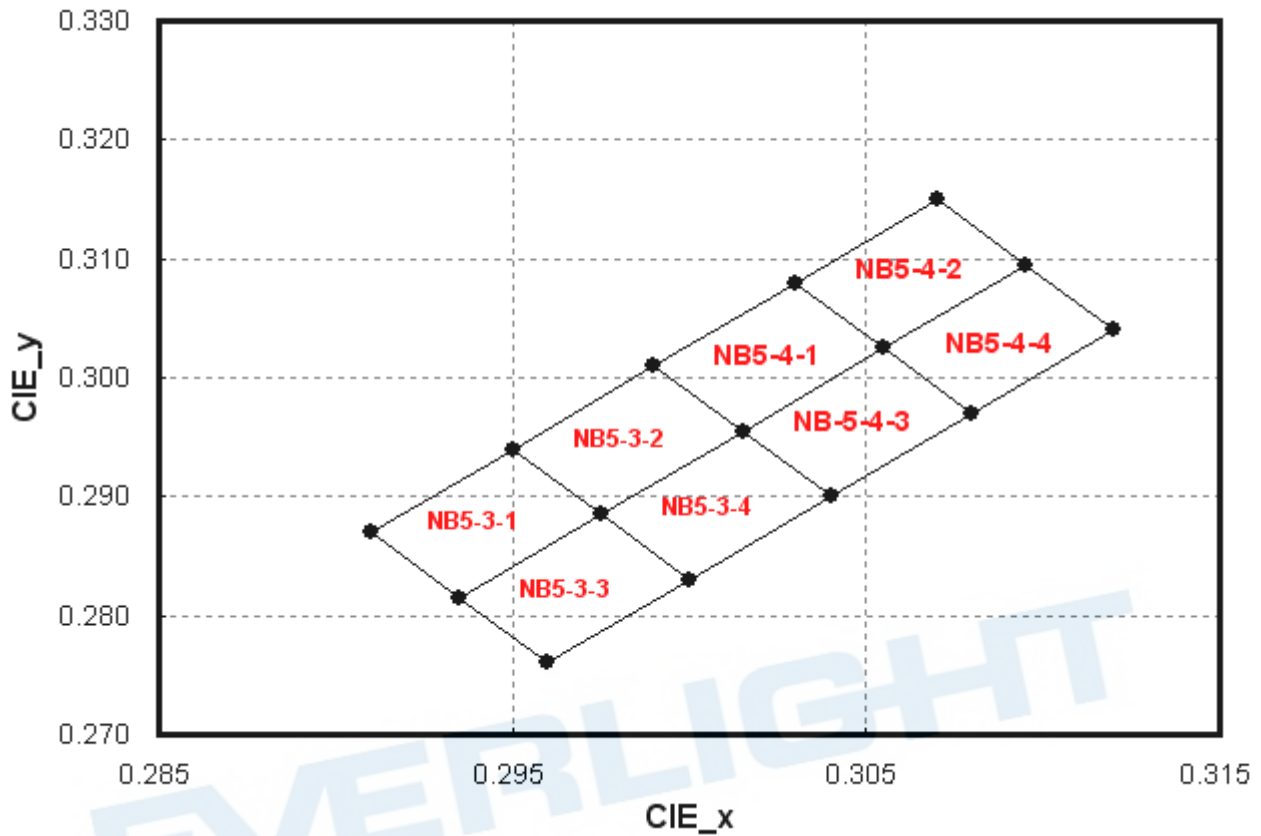
Note:

Tolerance of Chromaticity Coordinates : ±0.01

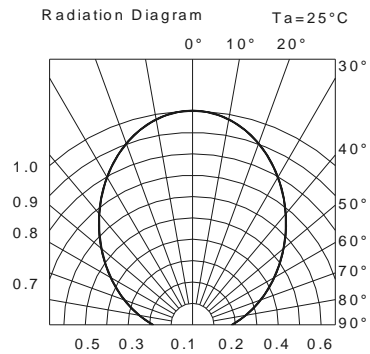
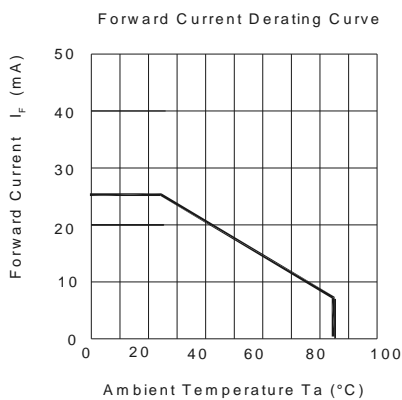
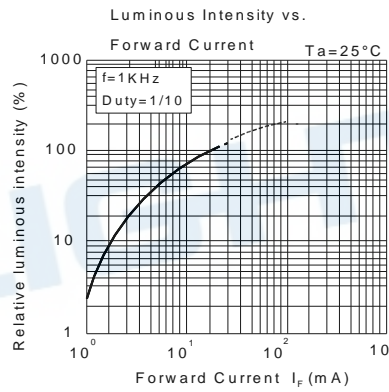
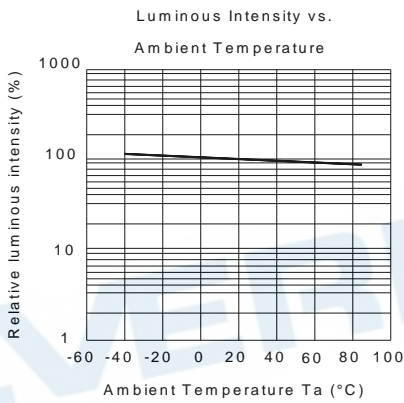
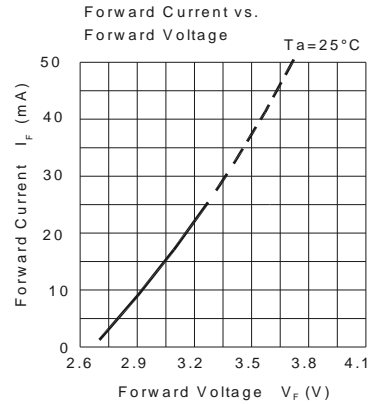
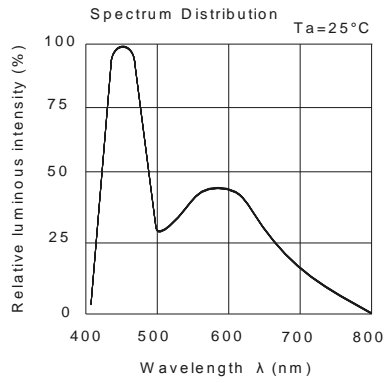
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The C.I.E. 1931 Chromaticity Diagram



Typical Electro-Optical Characteristics Curves



Technical Data Sheet

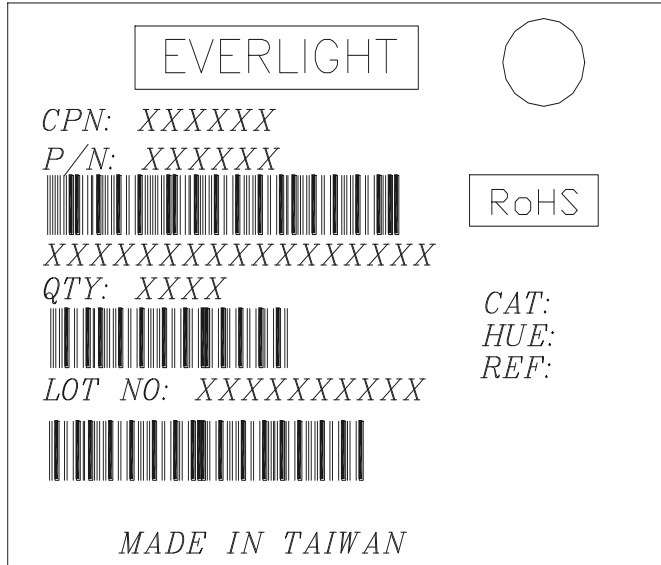


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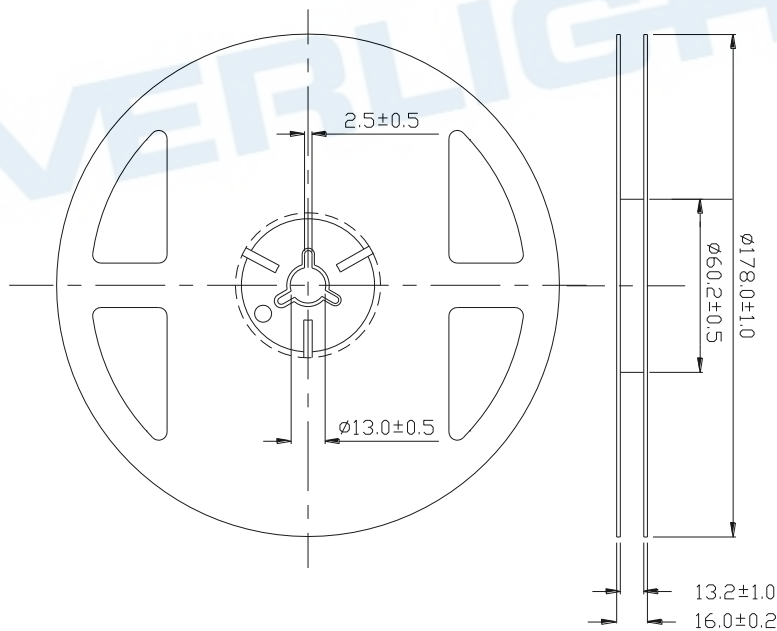
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Label Explanation

CAT: Luminous Intensity Rank
HUE: Chromaticity Coordinates
REF: Forward Voltage Rank



Reel Dimensions



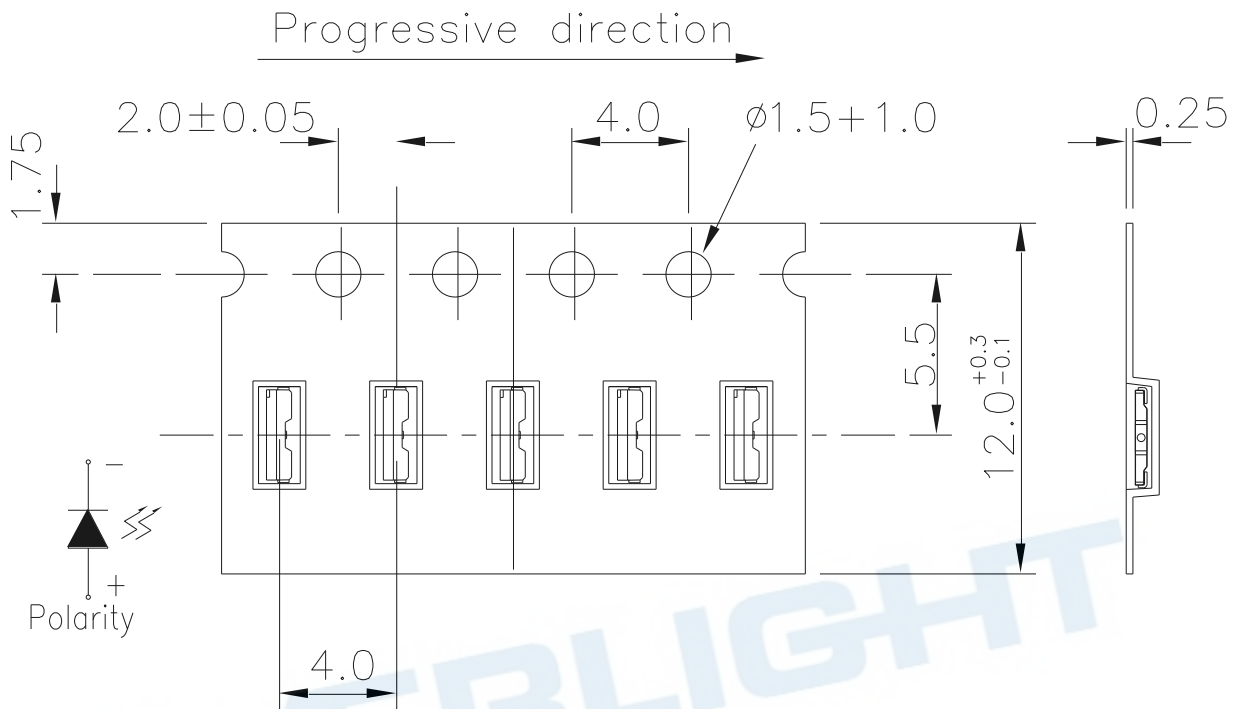
Note:

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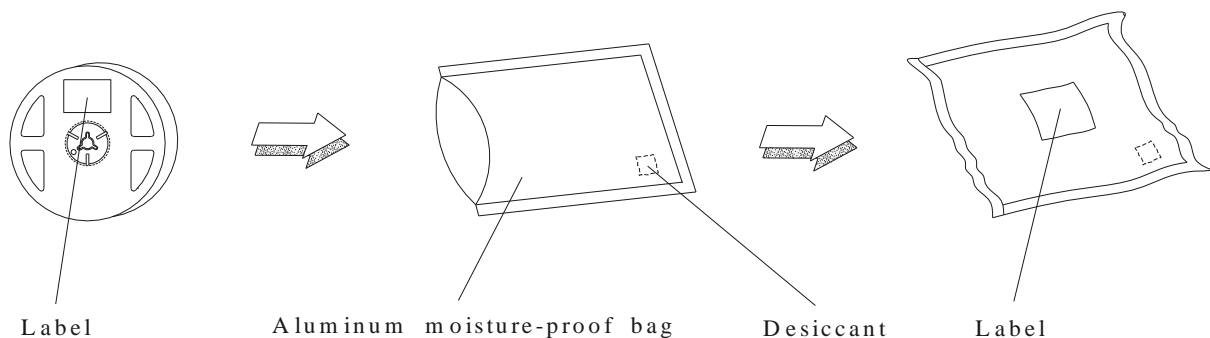
Carrier Tape Dimensions: Loaded Quantity 250 up/500/1000/2000 pcs per reel.



Note:

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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 Condition		Test Hours / Times	Criteria	
		Temp./ Humidity	I _F (mA)		I _v @ 20mA	V _F @ 20mA
1	Reflow Soldering	TSlid = 260°C, Max. 10sec.		2 times	<±10%	<±10%
2	Thermal Cycle	-40°C 30min.	~ (5min.)	100°C 30min.	200 cycles	I _v > 70%, V _F < 110%,
3	Thermal Shock	-10°C 20min.	~ (<15sec.)	100°C 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 Humidity	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		

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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°C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less.

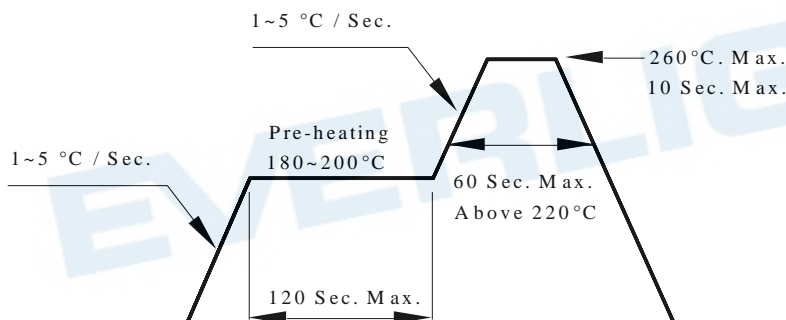
If unused LEDs remain, it should be stored in moisture proof packages.

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.

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 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.

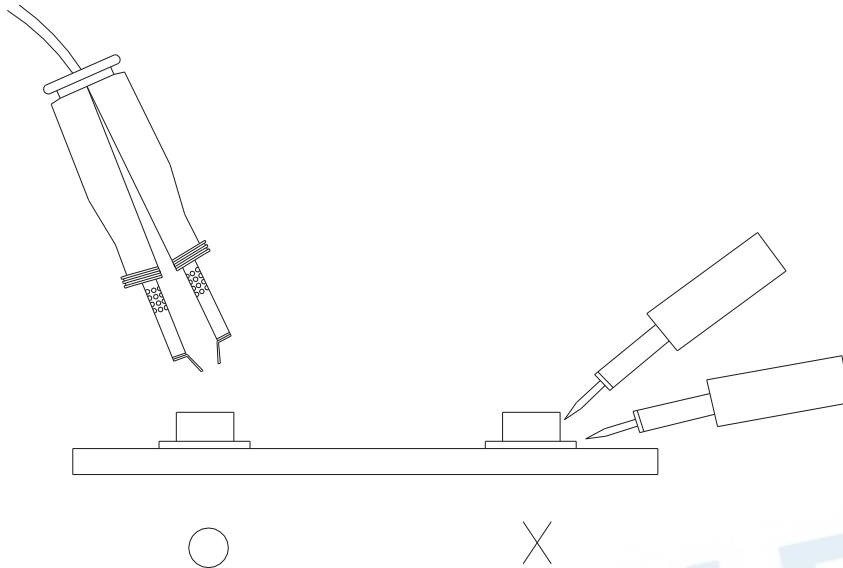
5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a

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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.



6. Handling Indications

During processing, mechanical stress on the surface should be minimized as much as possible. Sharp objects of all types should not be used to pierce the sealing compound

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