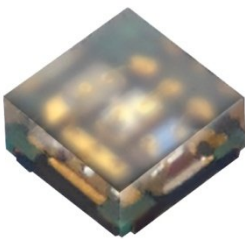


SMD ■

18-039/BDR6GAS1-S01/2T



Features

- Package in 8mm tape on 7" diameter reel
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow
- Solder process
- Full-color type
- Pb-free
- Component solderable surface finish is Gold
- Component weight is 1.0 mg
- RoHS compliant

Description

- The 18-039 SMD LED is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Moreover, with its black PCB, the 18-039 possess an ideal solution for high-contrast and high-resolution indoor signage display.

Applications

- Indoor signage display applications
- Indoor decorating and entertainment design
- Flat backlight for LCD, switch and symbol
- Indicator and backlighting for all consumer electronics

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Red	Water Clear
InGaN	Brilliant Green	
InGaN	Brilliant Blue	

Absolute Maximum Ratings (Ta=25)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	R6:10 GA:10 BD:10	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	R6:20 GA:20 BD:20	mA
Power Dissipation	P_d	R6:24 GA:35 BD:35	mW
Junction Temperature	T_j	100	
Operating Temperature	T_{opr}	-40 ~ +85	
Storage Temperature	T_{stg}	-40 ~ +90	
ESD (Classification acc. AEC Q101)	ESD_{HBM}	R:150 G:150 B:150	V
Soldering Temperature	T_{sol}	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	R6	40		150	mcd	I _F =10mA
		GA	91		336		
		BD	24		100		
Viewing Angle	2θ _{1/2}		-----	120	-----	deg	I _F =10mA
Peak Wavelength	λ _p	R6		632		nm	I _F =10mA
		GA	-----	520	-----		
		BD		461			
Dominant Wavelength	λ _d	R6	617		629	nm	I _F =10mA
		GA	512		533		
		BD	459		477		
Spectrum Radiation Bandwidth	Δλ	R6		20		nm	I _F =10mA
		GA	-----	25	-----		
		BD		25			
Forward Voltage	V _F	R6	1.7	2.0	2.4	V	I _F =10mA
		GA	2.6	3.3	3.7		
		BD	2.6	3.3	3.7		
Reverse Current	I _R		-----	-----	10	μA	V _R =5V

Note:

1. Tolerance of Luminous Intensity: ±10%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

Floating Bin(R6) Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
R0	40	55	mcd	$I_F = 10\text{mA}$
RA	55	80		
RB	80	110		
RC	110	150		

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
R1	617	620	nm	$I_F = 10\text{mA}$
R2	620	623		
R3	623	626		
R4	626	629		

Bin Range of Dominant Voltage

Bin Code	Min.	Max.	Unit	Condition
R1	1.7	2.4	v	$I_F = 10\text{mA}$

Note:

1. Tolerance of Luminous Intensity: $\pm 10\%$
2. Tolerance of Dominant Wavelength: $\pm 1\text{nm}$
3. Tolerance of Forward Voltage: $\pm 0.01\text{V}$

Floating Bin(GA) Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
GA	91	133	mcd	$I_F = 10\text{mA}$
GB	133	194		
GC	194	280		
GD	280	336		

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
G1	512	515	nm	$I_F = 10\text{mA}$
G2	515	518		
G3	518	521		
G4	521	524		
G5	524	527		
G6	527	530		
G7	530	533		

Bin Range of Dominant Voltage

Bin Code	Min.	Max.	Unit	Condition
G1	2.6	3.7	v	$I_F = 10\text{mA}$

Note:

- 1.Tolerance of Luminous Intensity: $\pm 10\%$
- 2.Tolerance of Dominant Wavelength: $\pm 1\text{nm}$
3. Tolerance of Forward Voltage: $\pm 0.01\text{V}$

Floating Bin(BD) Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
B0	24	34	mcd	$I_F = 10\text{mA}$
BA	34	48		
BB	48	70		
BC	70	100		

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
B0	459	462	nm	$I_F = 10\text{mA}$
B1	462	465		
B2	465	468		
B3	468	471		
B4	471	474		
B5	474	477		

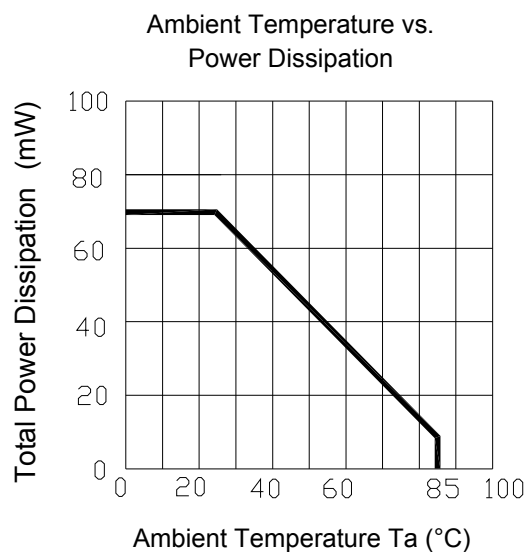
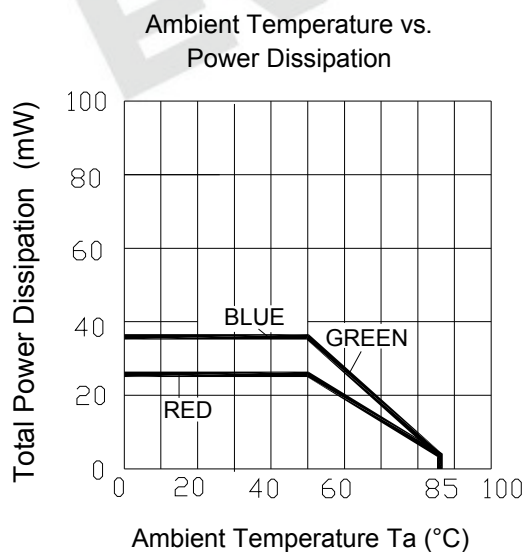
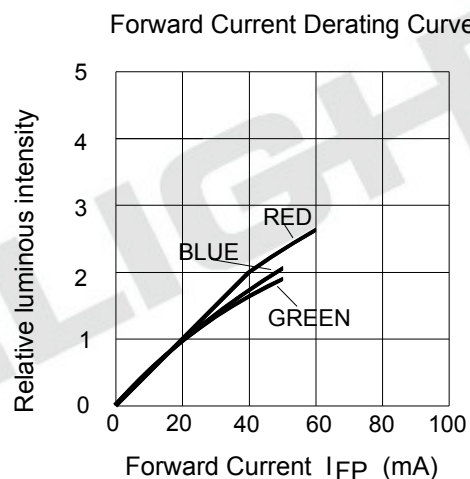
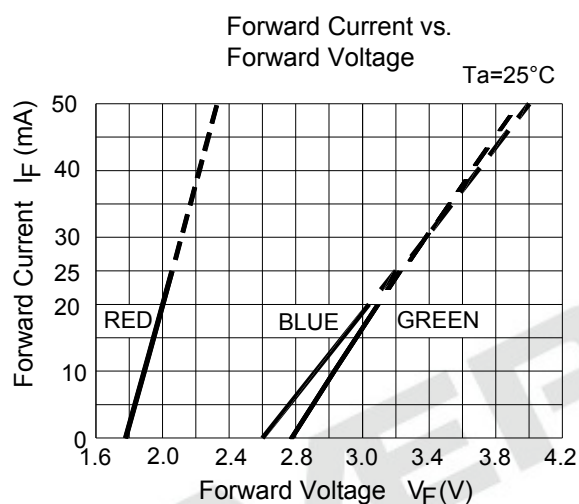
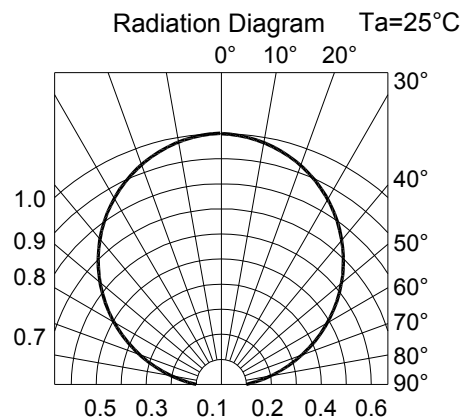
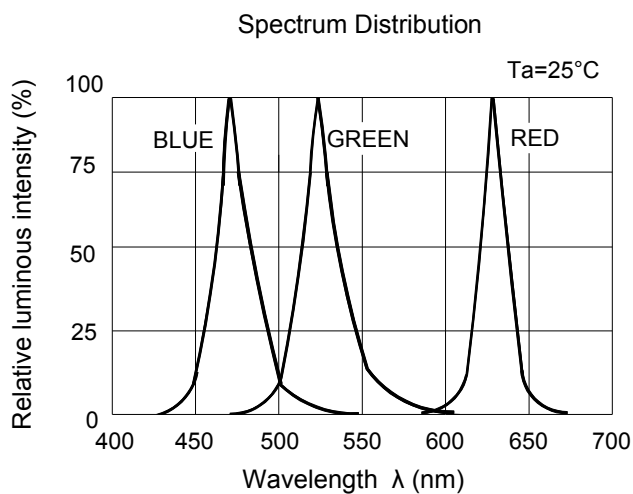
Bin Range of Dominant Voltage

Bin Code	Min.	Max.	Unit	Condition
B1	2.6	3.7	v	$I_F = 10\text{mA}$

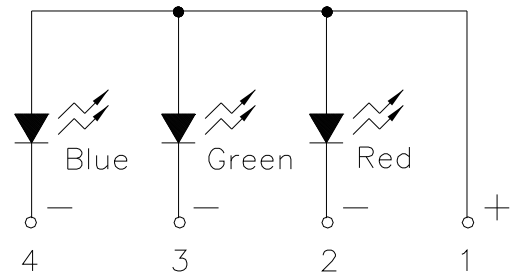
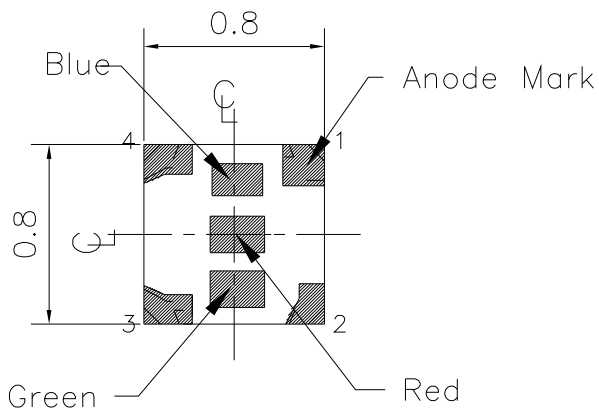
Note:

- 1.Tolerance of Luminous Intensity: $\pm 10\%$
- 2.Tolerance of Dominant Wavelength: $\pm 1\text{nm}$
3. Tolerance of Forward Voltage: $\pm 0.01\text{V}$

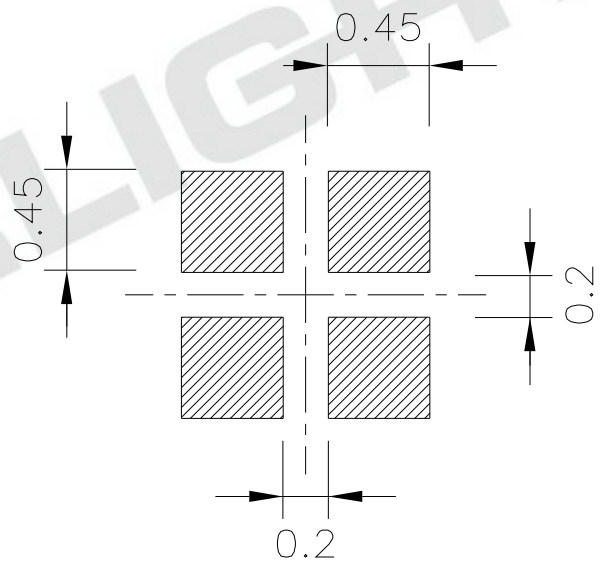
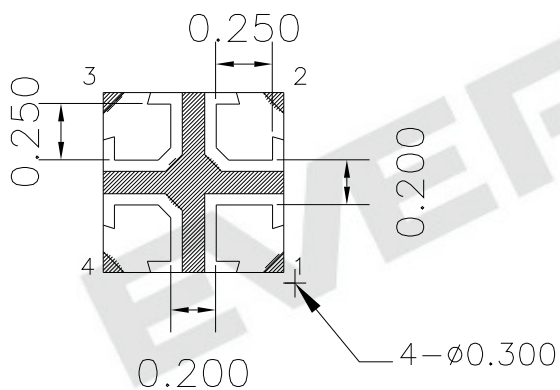
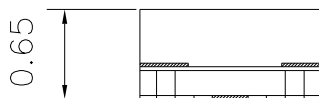
Typical Electro-Optical Characteristics Curves



Package Dimension



Polarity



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

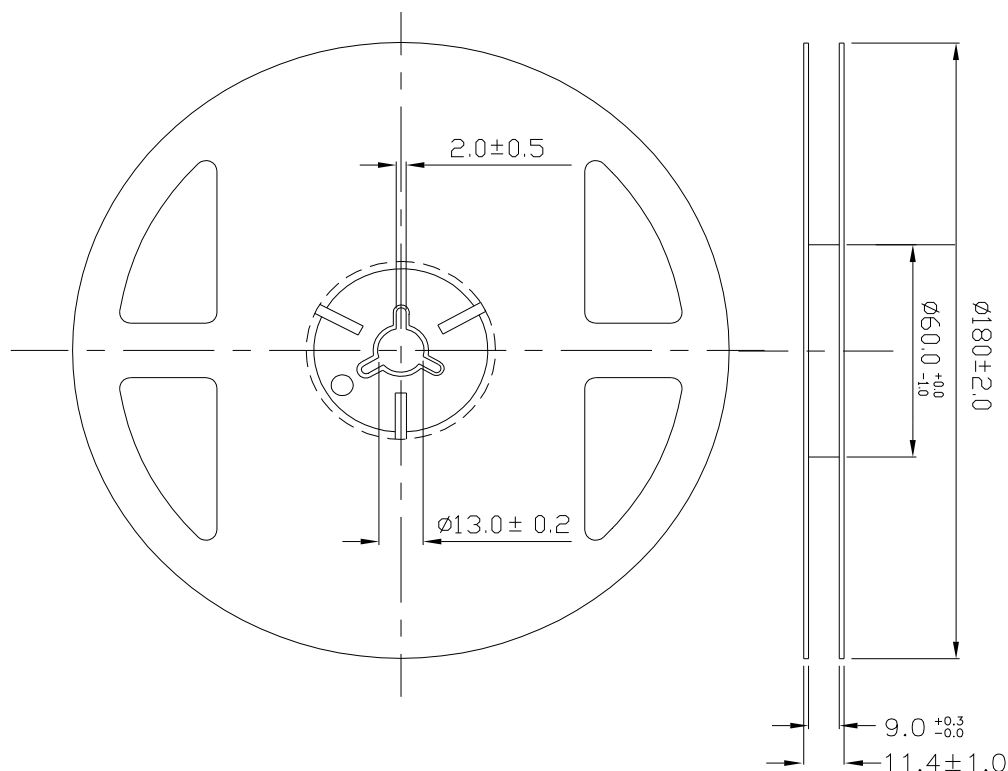
Moisture Resistant Packing Materials

Label Explanation

	EVERLIGHT	0415
CPN: XXXXXXXXXXXX		332CDD
P/N: XXXXXXXXXXXX		
		RoHS
XX-XXXXXX/XXXXXXXXXX-XXX/XXX		
QTY: XXXX		
CAT: BC(10.6~13mcd)/GD(41.5~50mcd)/RD(20~24mcd)		
HUE: B3(468~471nm)/G3(523~526nm)/R2(619~622nm)		
REF: B1(2.3~3.7V)/G1(2.3~3.7V)/R1(1.7~2.35V)		
LOT NO: XXXXXXXXXXXXXXXXXXXX		
		
REFERENCE: XXXXXXXXXXXXXXXX		
		
MADE IN TAIWAN		

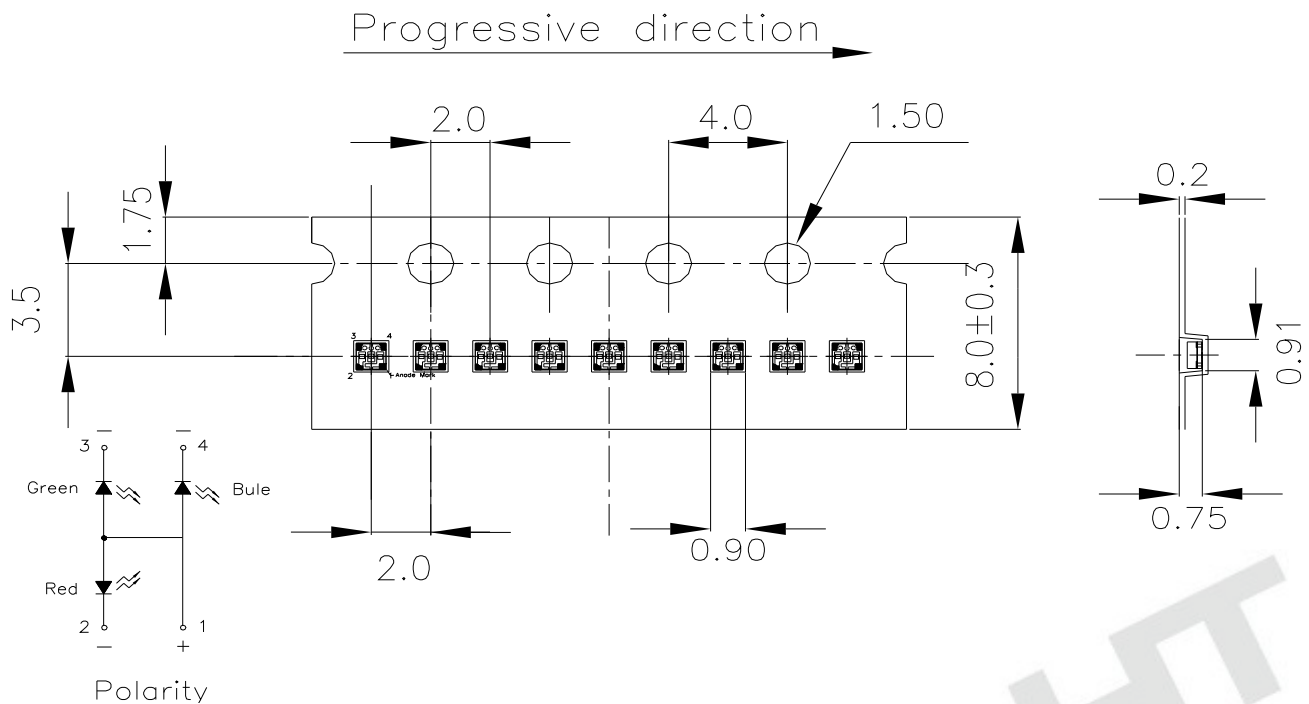
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



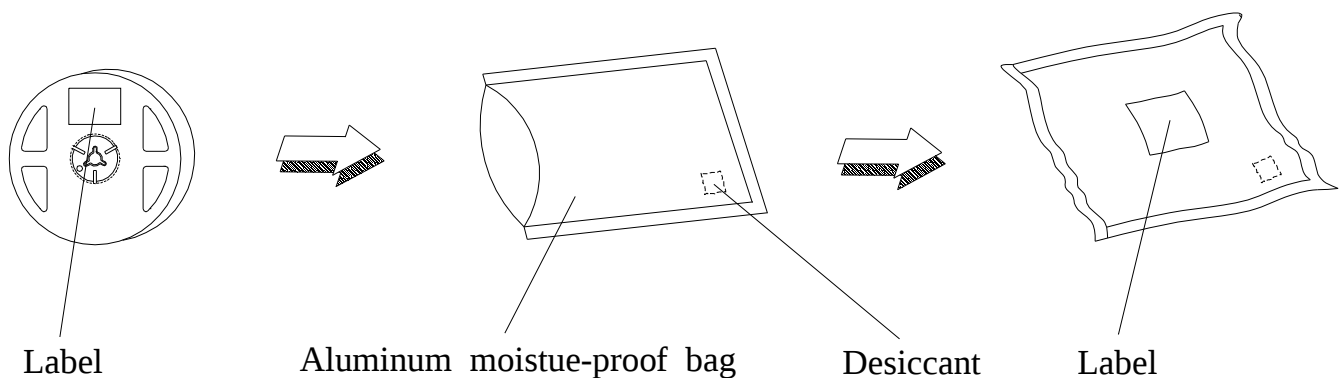
Carrier Tape Dimensions:

Minimum packing amount is 2000 pcs per reel



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

Moisture Resistant Packing Process



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

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 168Hrs under 30 °C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

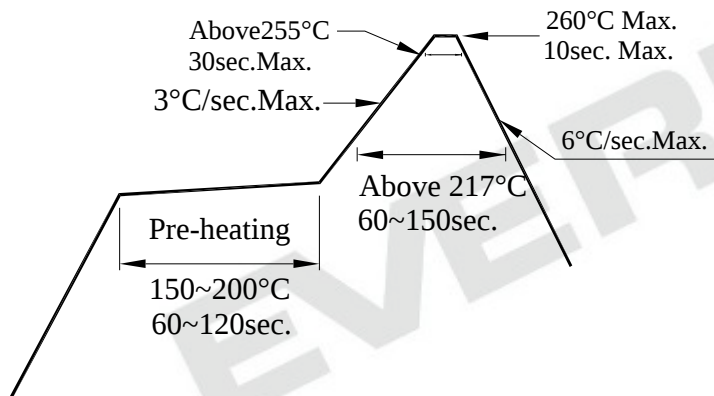
2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5 °C for 24 hours.

2.5 Before using LEDs, baking treatment should be implemented based on the following conditions: pre-curing at 60±5 °C for 24 hours or 125±5 °C for 3 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.

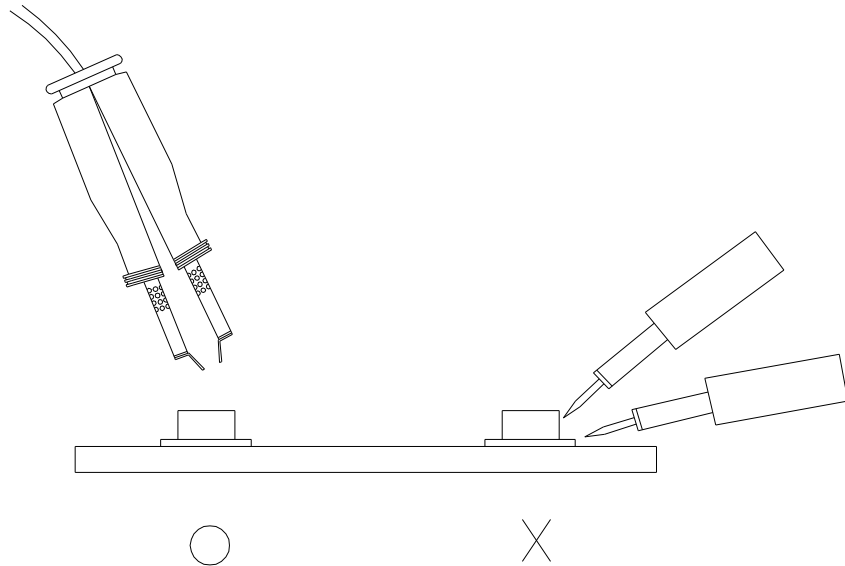
3.4 After soldering, do not warp the circuit board.

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 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.Directions for use

The LEDs should be operated with forward bias. The driving circuit must be designed so that the LEDs are not subjected to forward or reverse voltage while it is off. If reverse voltage is continuously applied to the LEDs, It may cause migration resulting in LED damage.

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