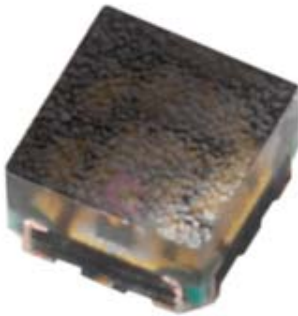


DATASHEET

SMD ■ B
EAST0808RGBA1



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 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 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	Black Surface Diffused
InGaN	Brilliant Green	
InGaN	Brilliant Blue	

Absolute Maximum Ratings (Ta=25°C)

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	°C
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +90	°C
ESD (Classification acc. AEC Q101)	ESD_{HBM}	R:150 G:150 B:150	V
Soldering Temperature	T_{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol		Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	R6	25		63	mcd	I _F =10mA
		GA	41		104		
		BD	11.5		29		
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		632	nm	I _F =10mA
		GA	512		533		
		BD	458		476		
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
RA	25	30	mcd	$I_F = 10\text{mA}$
RB	30	36		
RC	36	44		
RD	44	52		
RE	52	63		

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		
R5	629	632		

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	41	50	mcd	$I_F = 10\text{mA}$
GB	50	60		
GC	60	72		
GD	72	87		
GE	87	104		

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
BA	11.5	14.0	mcd	$I_F = 10\text{mA}$
BB	14.0	16.8		
BC	16.8	20.2		
BC	20.2	24.2		
BE	24.2	29.0		

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
B1	458	461	nm	$I_F = 10\text{mA}$
B2	461	464		
B3	464	467		
B4	467	470		
B5	470	473		
B6	473	476		

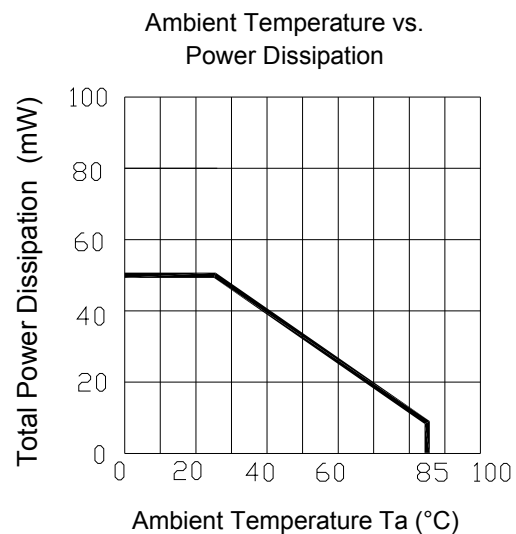
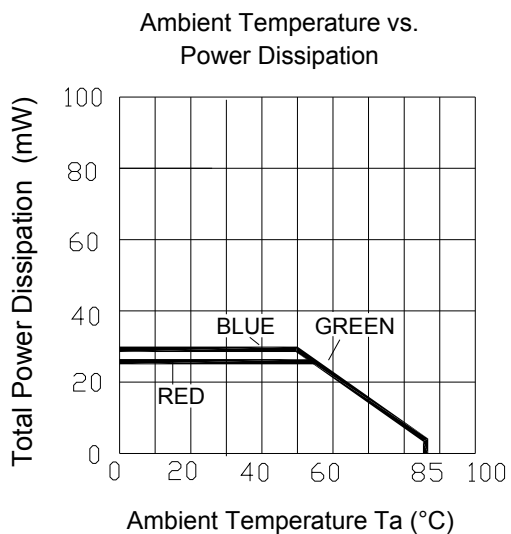
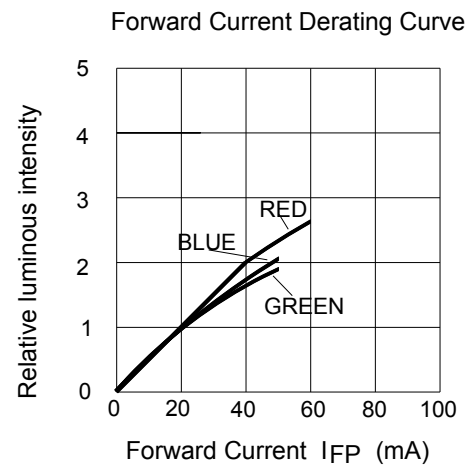
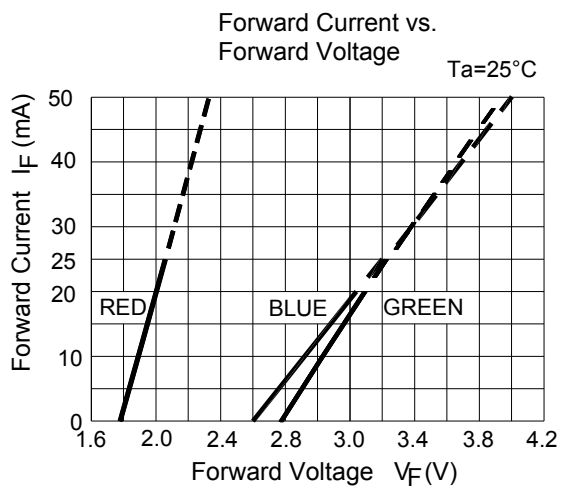
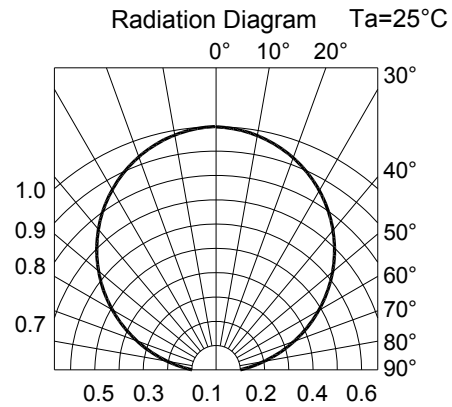
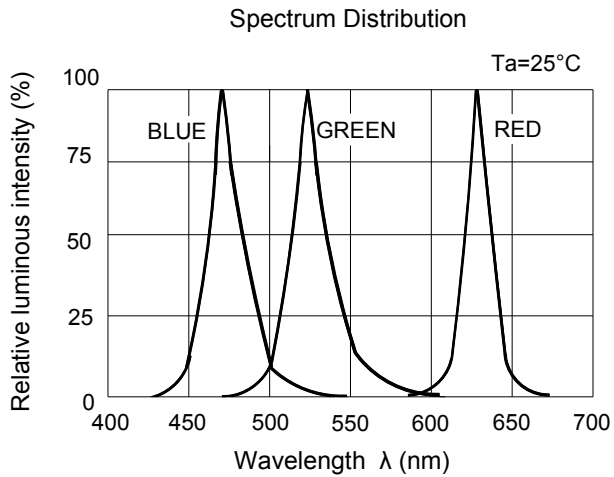
Bin Range of Dominant Voltage

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

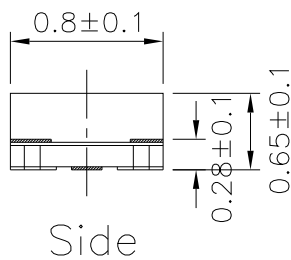
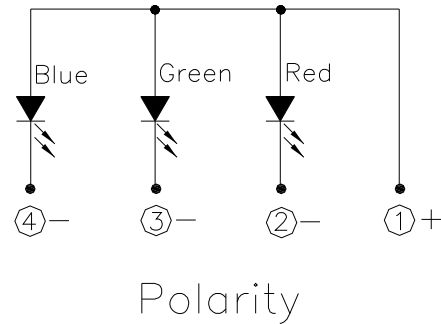
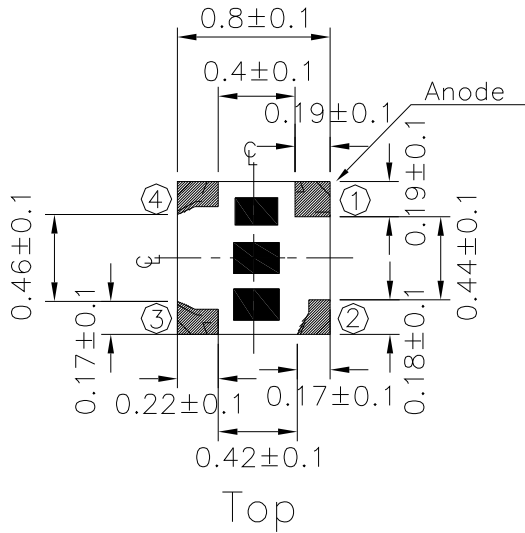
Note:

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

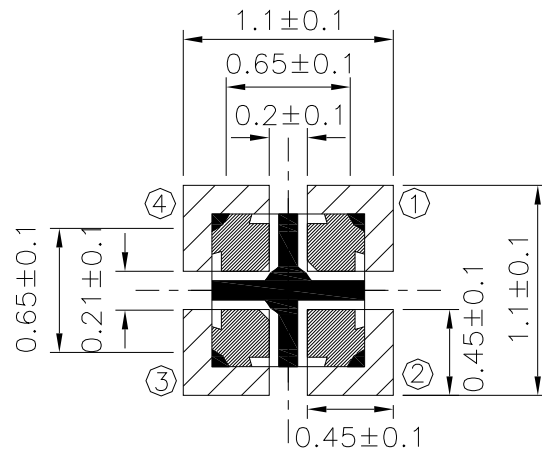
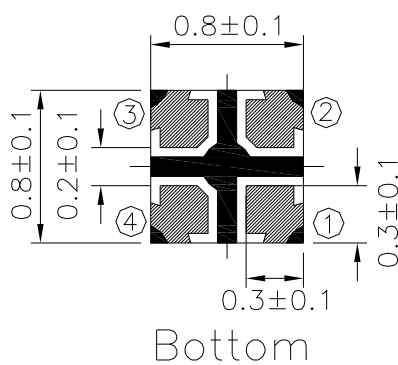
Typical Electro-Optical Characteristics Curves



Package Dimension



Recommend soldering pad

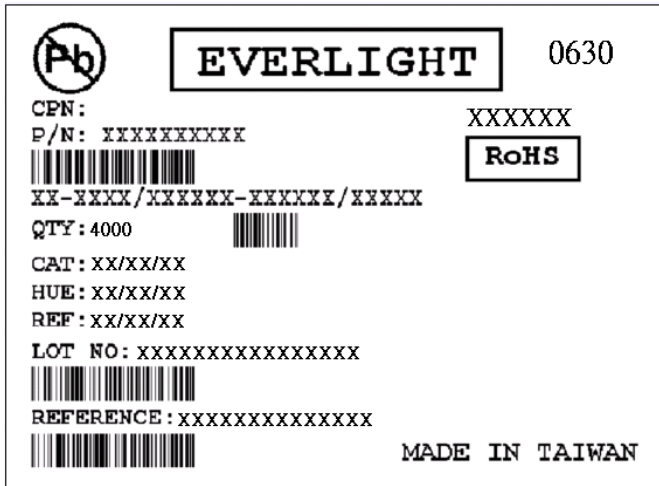


Suggested pad dimension is just for reference only.
Please modify the pad dimension based on individual need.

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

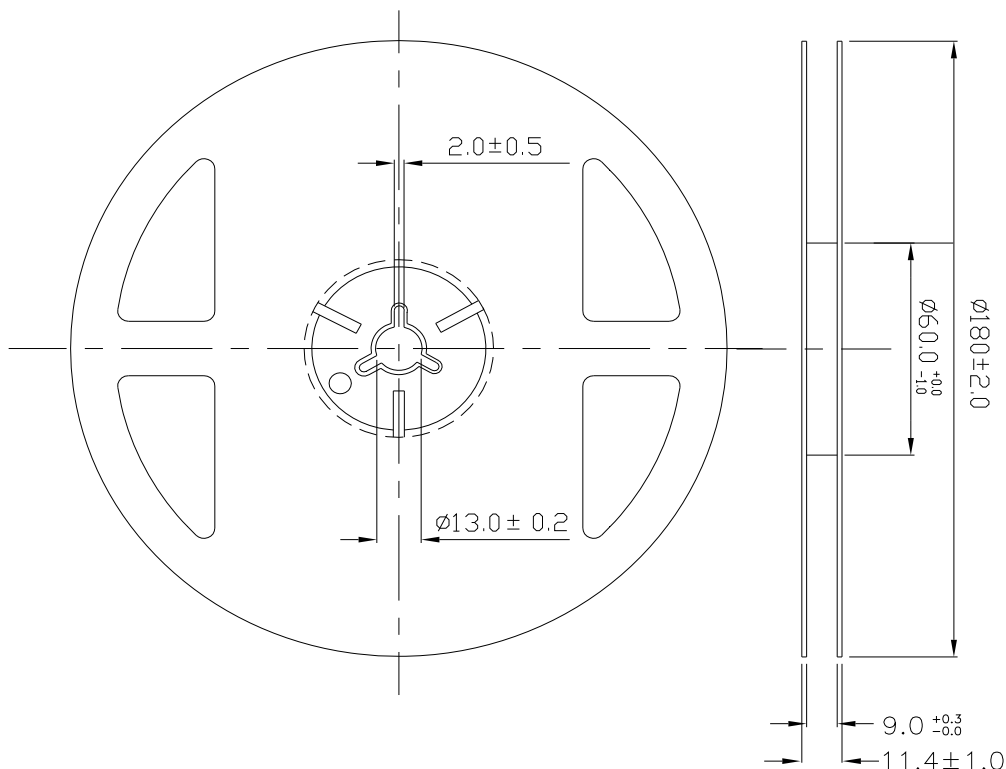
Moisture Resistant Packing Materials

Label Explanation



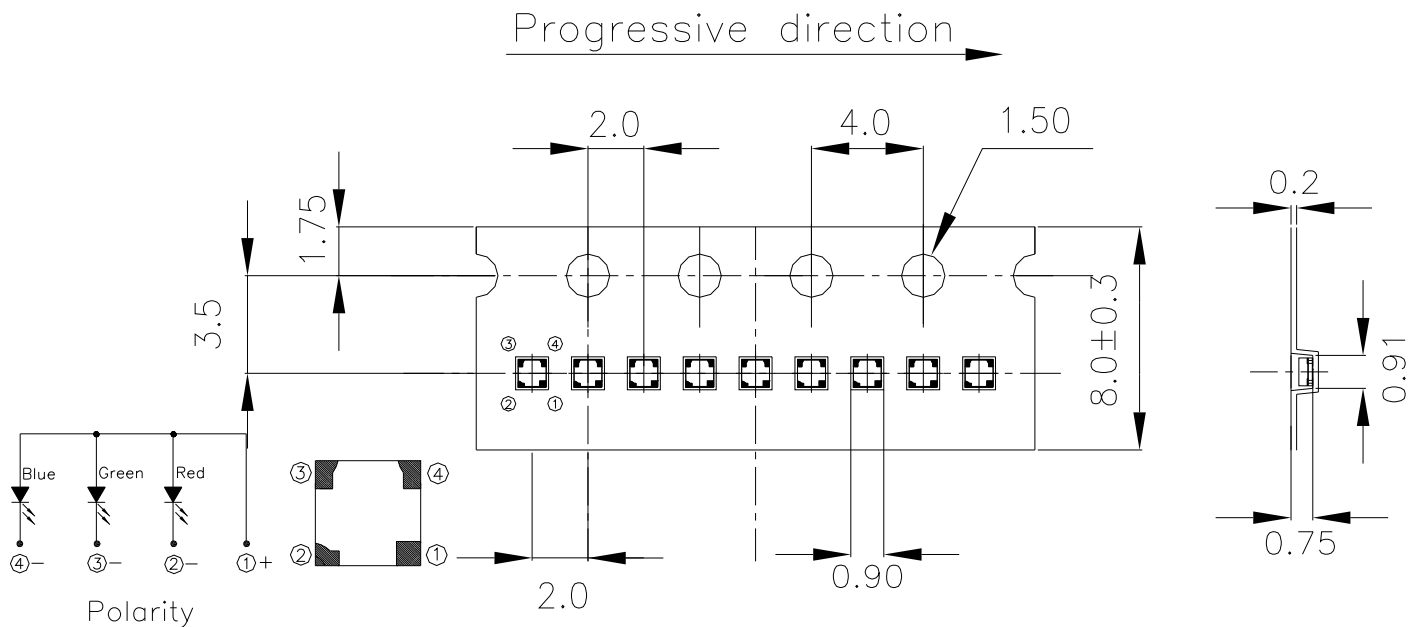
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



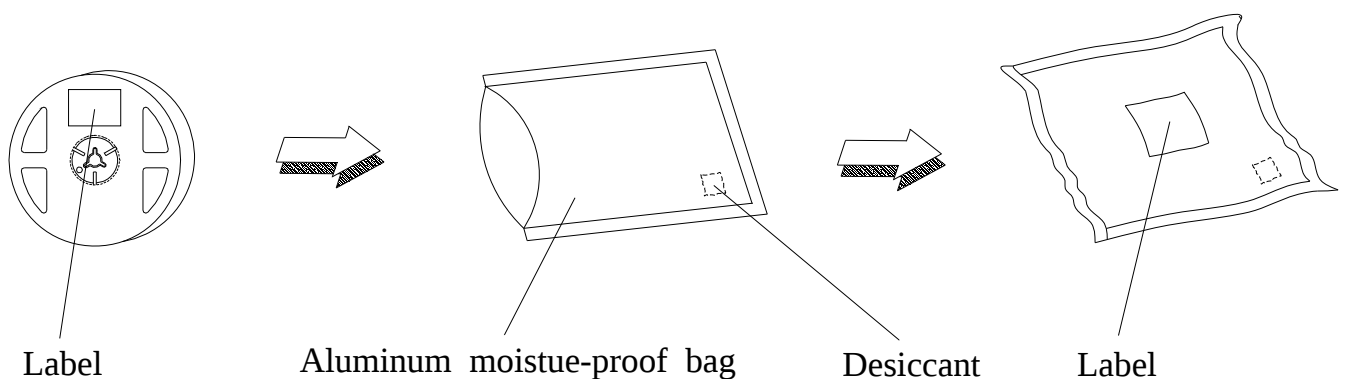
Carrier Tape Dimensions:

The minimum quantity of packing is 4000 pcs per reel. The rest quantity which could not reach 4000 pcs per reel will go to 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.

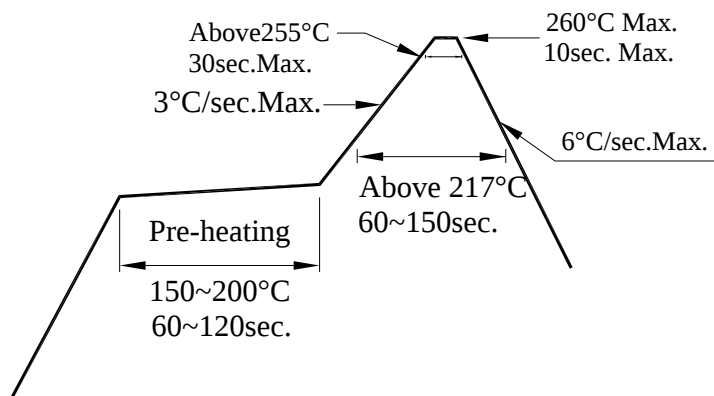
2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

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.

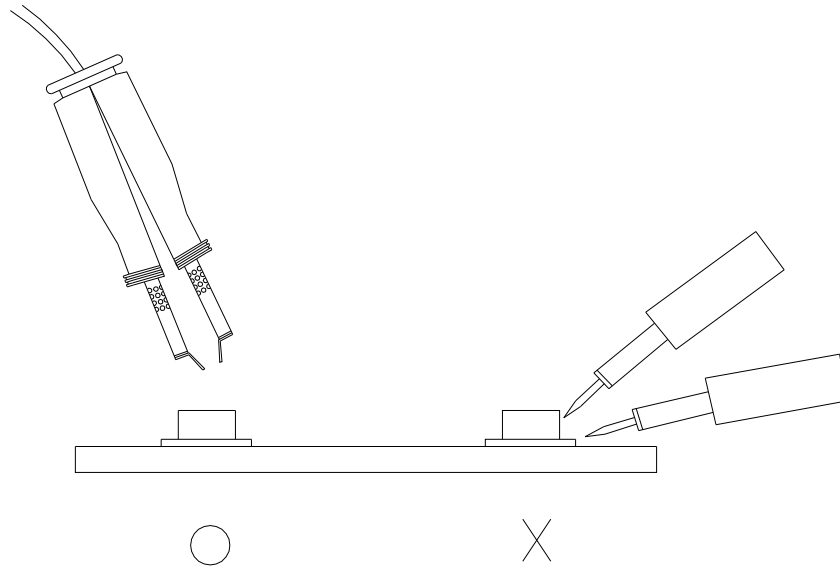
3.4 After soldering, do not warp the circuit board.

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.

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 Americas 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.