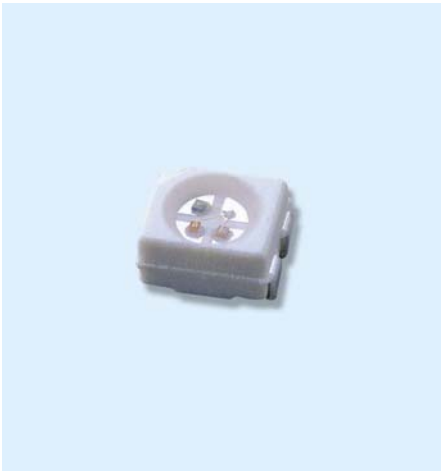
EVERLIGHT ELECTRONICS CO.,LTD.

Technical Data Sheet (Preliminary)

Full Color Top View LEDs

67-23/R6GHBHC-B02/2T



Features

- P-LCC-4 package.
- White package.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Inter reflector.
- Wide viewing angle.
- Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- Computable with automatic placement equipment.
- Available on tape and reel (8mm Tape).
- Pb-free.

Descriptions

- The 67-23 series is available in soft orange, green,blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the LED ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

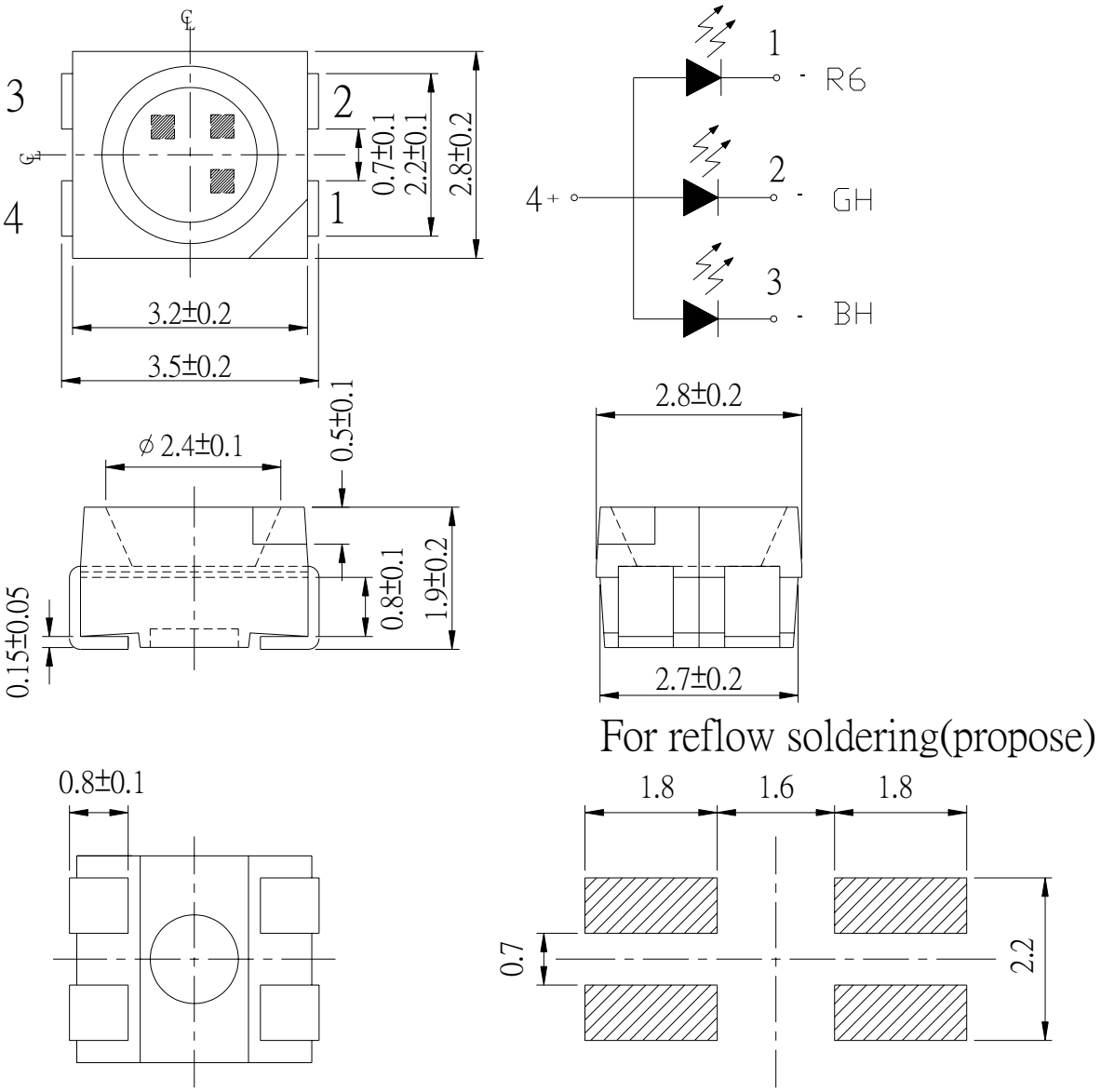
Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use.

Device Selection Guide

Chip			Lens Color
Type	**Material**	**Emitted Color**	
R6	AlGaInP	Brilliant Red	Water Clear
GH	InGaN	Brilliant Green	
BH	InGaN	Blue	

Package Outline Dimensions



Notes: All dimensions are in millimeters.

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol		Rating	Unit
Operating Temperature	Topr		-40 ~ +85	℃
Storage Temperature	Tstg		-40~ +100	℃
Soldering Temperature	Tsol		260 (for 5 Sec.)	℃
Electrostatic Discharge	ESD	R6	2000	V
		GH	150	
		BH	150	
Reverse Voltage	V_R		5	V
Power Dissipation	Pd	R6	60	mW
		GH	110	
		BH	110	
Forward Current	I_F	R6	25	mA
		GH		
		BH		
Peak Forward Current(Duty 1/10 @ 1KHz)	I_{FP}	R6	60	mA
		GH	100	
		BH	100	

67-23/R6GHBHC-B02/2T

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol		Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_V	R6	90	-----	225	mcd	I_F=20mA
		GH	360	-----	900		
		BH	90	-----	225		
Peak Wavelength	λ p	R6	-----	632	-----	nm	I_F=20mA
		GH	-----	518	-----		
		BH	-----	468	-----		
Dominant Wavelength	λ d	R6	-----	624	-----	nm	I_F=20mA
		GH	-----	525	-----		
		BH	-----	470	-----		
Spectrum Radiation Bandwidth	△ λ	R6	-----	20	-----	nm	I_F=20mA
		GH	-----	35	-----		
		BH	-----	35	-----		
Forward Voltage	V_F	R6	-----	2.0	2.4	V	I_F=20mA
		GH	-----	3.5	3.9		
		BH	-----	3.5	3.9		
Viewing Angle	2θ 1/2		-----	120	-----	deg	I_F=20mA
Reverse Current	I_R	R6	-----	-----	10	μA	V_R=5V
		GH	-----	-----	50		
		BH	-----	-----	50		

*The luminous intensity data did not including ±10% testing tolerance.

67-23/R6GHBHC-B02/2T

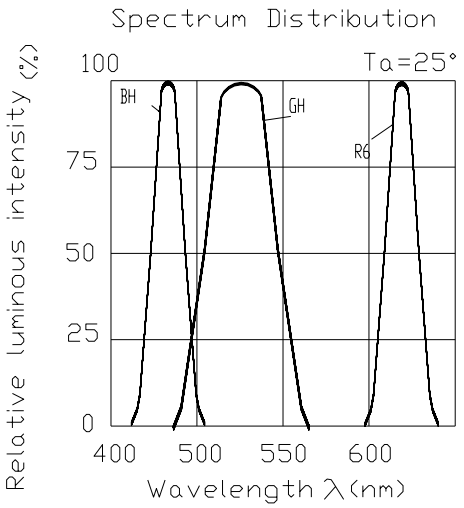
Bin Range Of Luminous Intensity

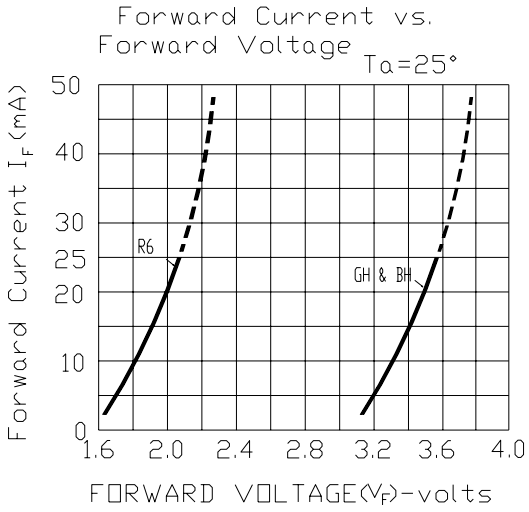
Symbol		Bin Code	Min.	Max.	Unit	Condition
Iv	R6	Q2	90	112	mcd	I_F =20mA
		R1	112	140		
		R2	140	180		
		S1	180	225		
	GH	T2	360	450		
		U1	450	565		
		U2	565	715		
		V1	715	900		
	BH	Q2	90	112		
		R1	112	140		
		R2	140	180		
		S1	180	225		

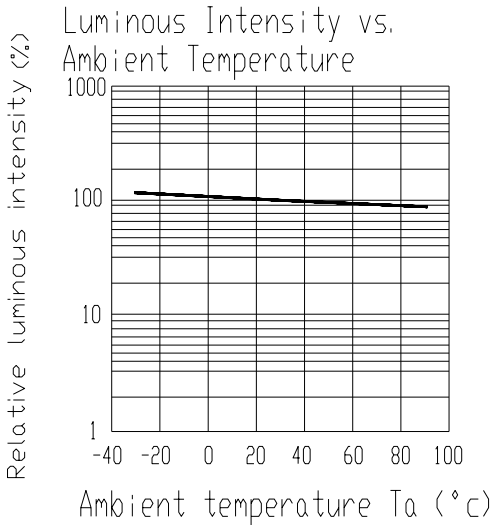
Notes:

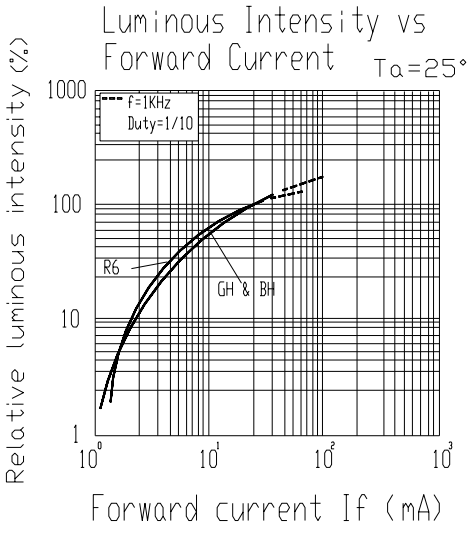
1.Tolerance of Luminous Intensity ±10%

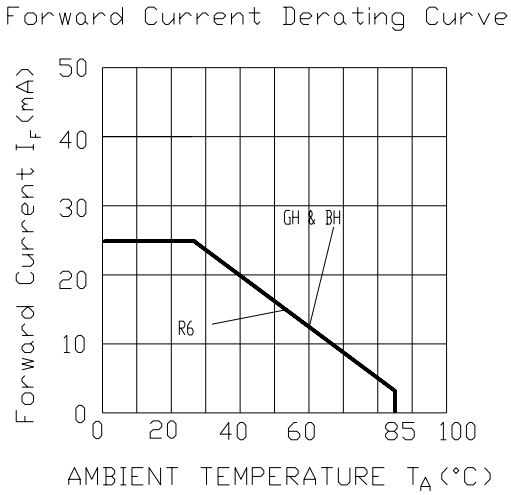
Typical Electro-Optical Characteristics Curves

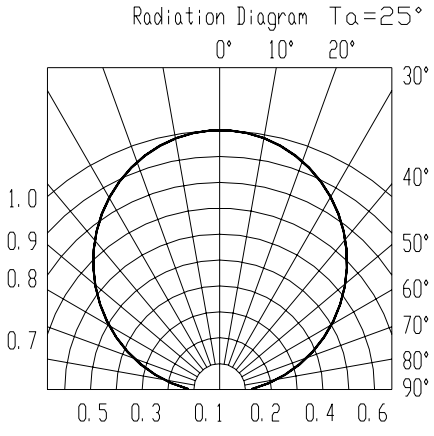










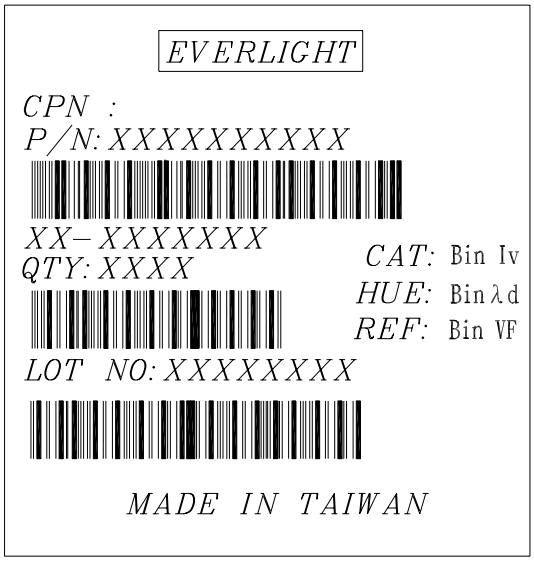


Label explanation

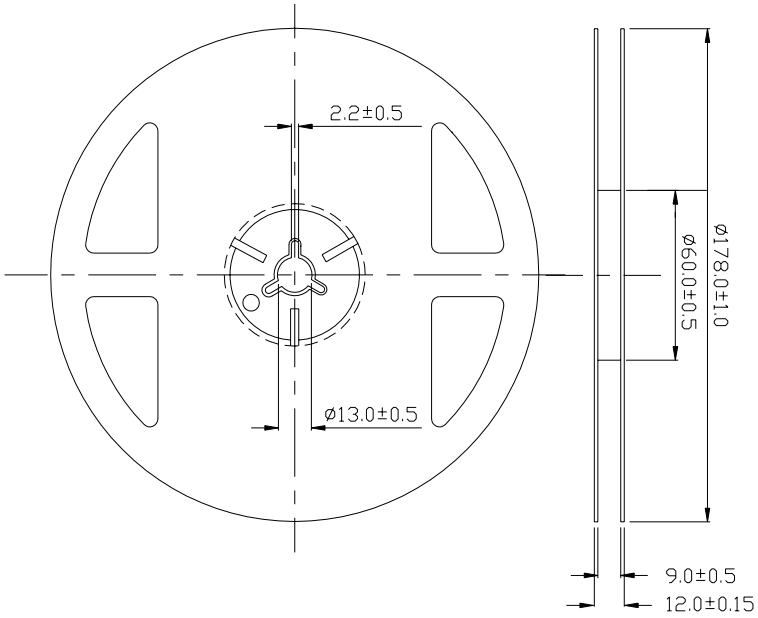
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

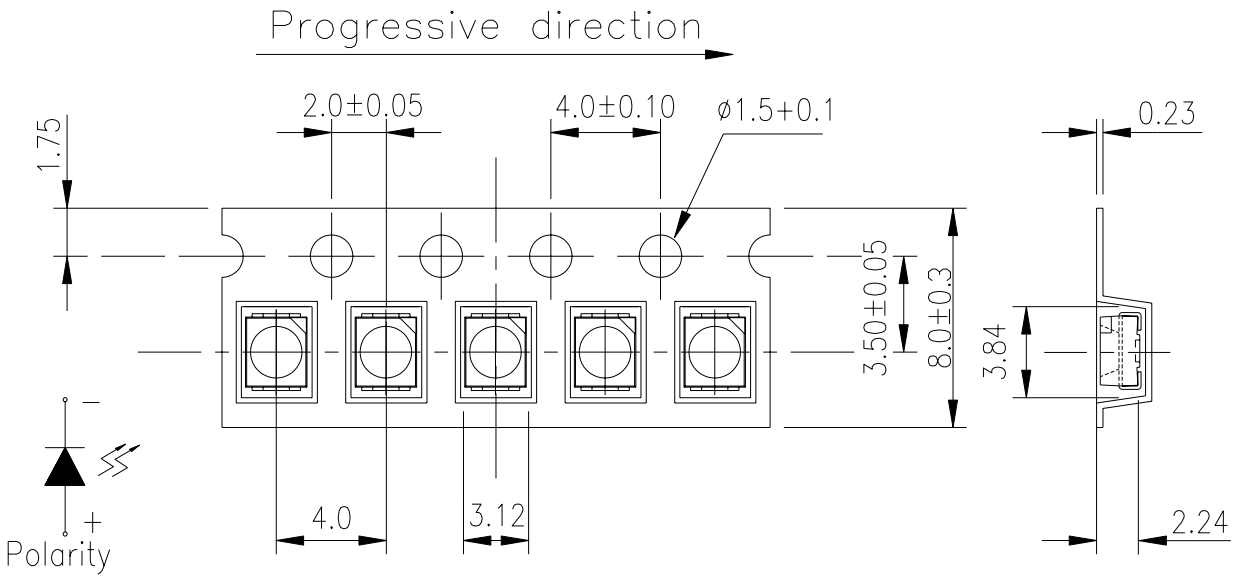


Reel Dimensions



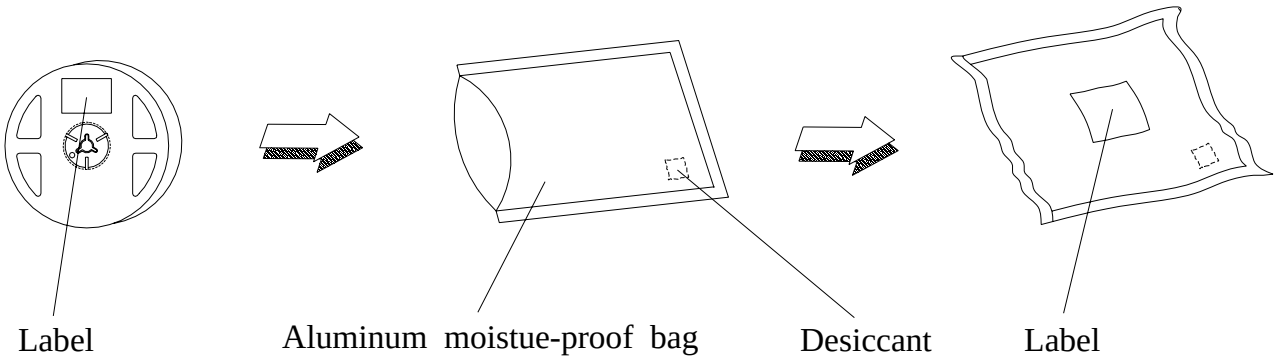
Note: Tolerances Unless Dimension ±0.1mm ,Unit = mm

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel.



Note: Tolerances Unless Dimension ±0.1mm , Unit = mm

Moisture Resistant Packaging



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 5sec.	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	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 Hrs.	22 PCS.	0/1

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 The LEDs should be used within a year.

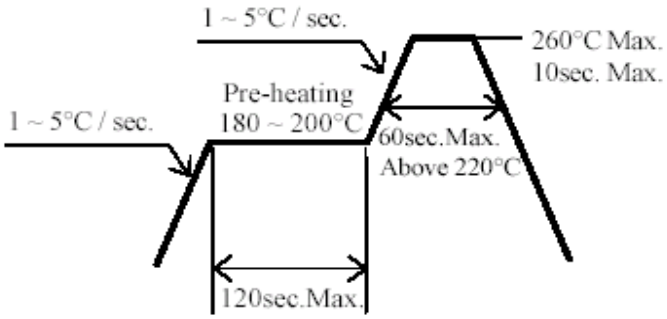
2.4 After opening the package, the LEDs should be kept at 30℃ or less and 70%RH or less.

2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

2.6 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.

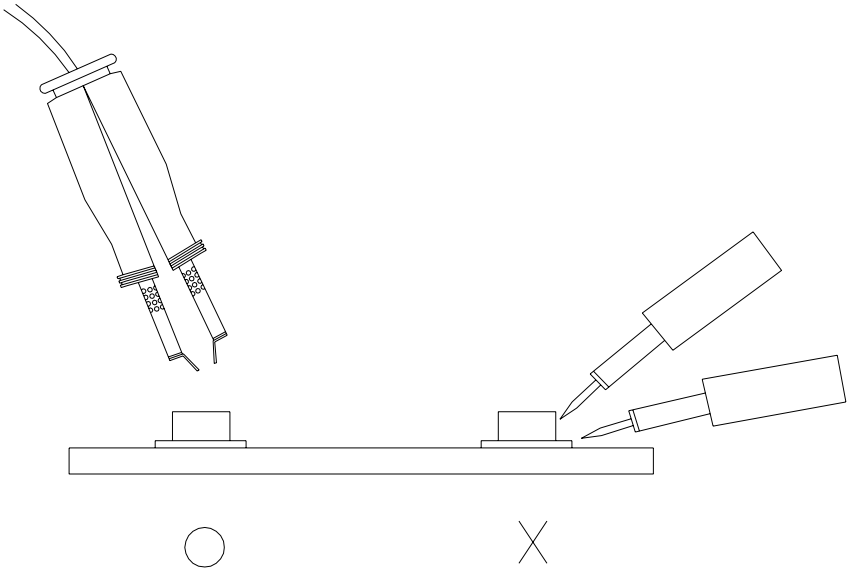
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 280℃ 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 25, Lane 76, Sec 3, Chung Yang Rd,
Tucheng, Taipei 236, Taiwan, R.O.C
Tel: 886-2-2267-2000, 2267-9936
Fax: 886-2267-6244, 2267-6189, 2267-6306
http://www.everlight.com