

**Technical Data Sheet(Preliminary)****Side View Red SMD LEDs**

---

**57-21UWC/B003/TR8****Features**

- Fluorescence Type
- High Luminous Intensity
- High Efficiency
- Pb-free.
- The product itself will remain with RoHS compliant version

**Descriptions**

The 57-21series 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 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.

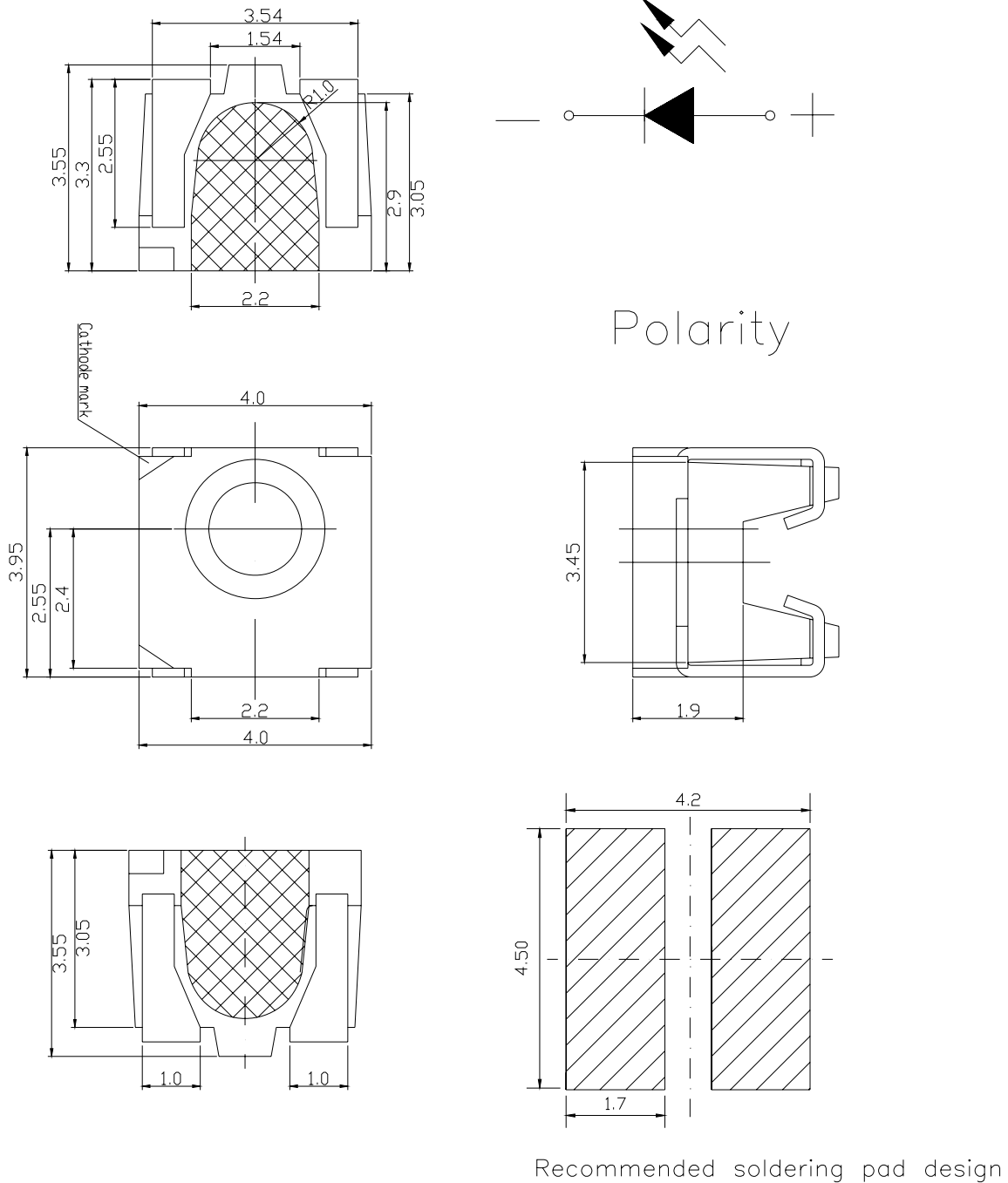
**Applications**

- OA Equipment
- Backlighting of Full Color LCD
- Automotive Equipment
- Replacement of Conventional Light Bulbs and Fluorescent Lamps

**Device Selection Guide**

Chip		Lens Color
Material	Emitted Color	
InGaN/SiC	Pure White	Water Clear

**Package Dimensions**



**Note:** The tolerances unless mentioned is  $\pm 0.1\text{mm}$  ,Unit = mm

**57-21UWC/B003/TR8**

**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
Forward Current	I <sub>F</sub>	30	mA
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C
Electrostatic Discharge(HBM)	ESD	1000	V
Power Dissipation	P <sub>d</sub>	120	mW
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	100	mA
Soldering Temperature	T <sub>sol</sub>	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 <sub>v</sub>	285	-----	715	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	-----	120	-----	deg	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	-----	3.3	3.9	V	I <sub>F</sub> =20mA

**Notes:**

1.Tolerance of Luminous Intensity ±10%

**Bin Range Of Luminous Intensity**

Bin	Min	Max	Unit	Condition
T1	285	360	mcd	I <sub>F</sub> =20mA
T2	360	450		
U1	450	565		
U2	565	715		

**Notes:**

1.Tolerance of Luminous Intensity ±10%

**57-21UWC/B003/TR8**

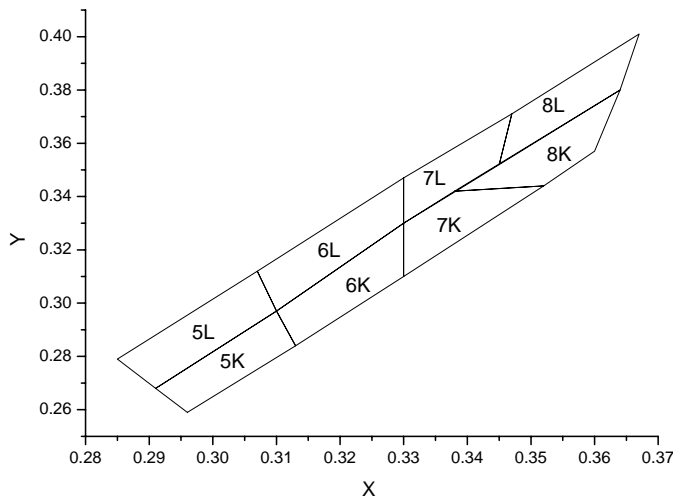
Chromaticity Coordinates Specifications for Bin Grading

$I_F=20mA$

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
5K	0.2960	0.2590	5L	0.2910	0.2680
	0.2910	0.2680		0.2850	0.2790
	0.3100	0.2970		0.3070	0.3120
	0.3130	0.2840		0.3100	0.2970
6K	0.3130	0.2840	6L	0.3100	0.2970
	0.3100	0.2970		0.3070	0.3120
	0.3300	0.3300		0.3300	0.3470
	0.3300	0.3100		0.3300	0.3300
7K	0.3300	0.3100	7L	0.3300	0.3300
	0.3300	0.3300		0.3300	0.3470
	0.3380	0.3420		0.3470	0.3710
	0.3520	0.3440		0.3450	0.3520
8K	0.3520	0.3440	8L	0.3450	0.3520
	0.3380	0.3420		0.3470	0.3710
	0.3640	0.3800		0.3670	0.4010
	0.3600	0.3570		0.3640	0.3800

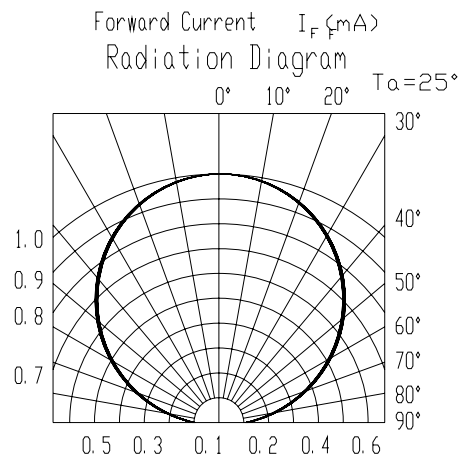
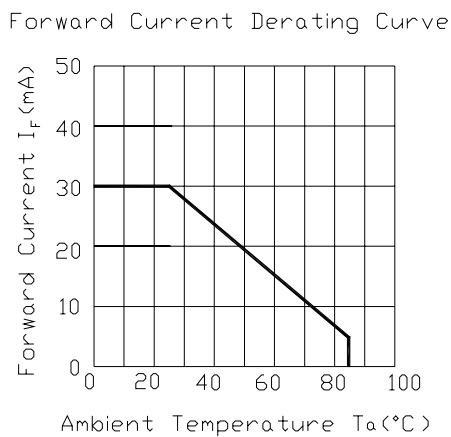
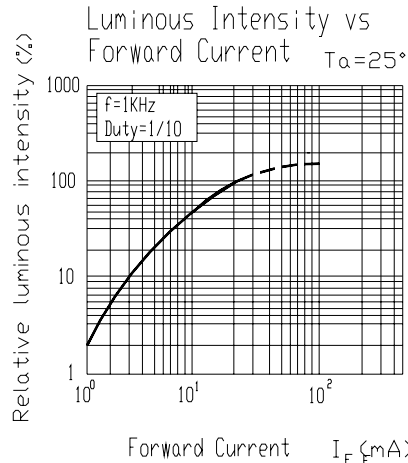
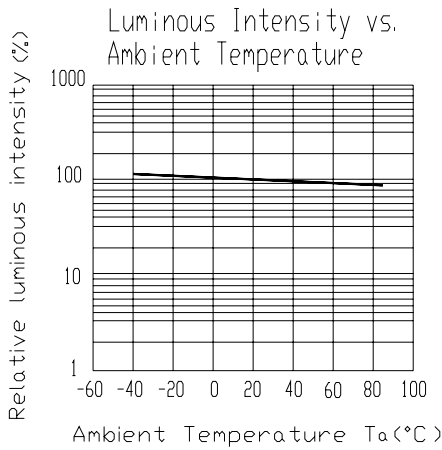
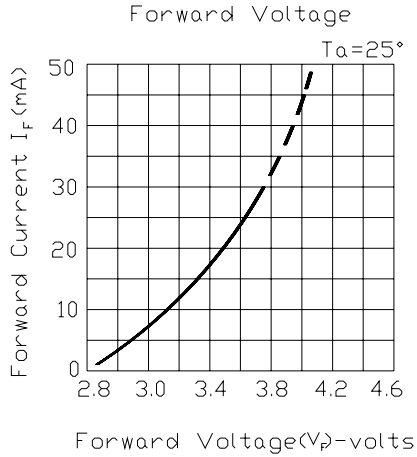
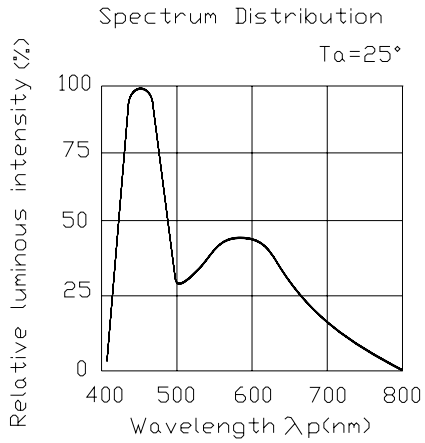
**Notes:**

1. The C.I.E. 1931 chromaticity diagram ( Tolerance  $\pm 0.01$ ).



**57-21UWC/B003/TR8**

**Typical Electro-Optical Characteristics Curves**



**Label explanation**

**CAT: Luminous Intensity Rank**

**HUE: Dom. Wavelength Rank**

**REF: Forward Voltage Rank**

EVERLIGHT

CPN: XXXXXX

P/N: XXXXXX

XXXXXXXXXXXXXXXXXXXX

QTY: XXXX

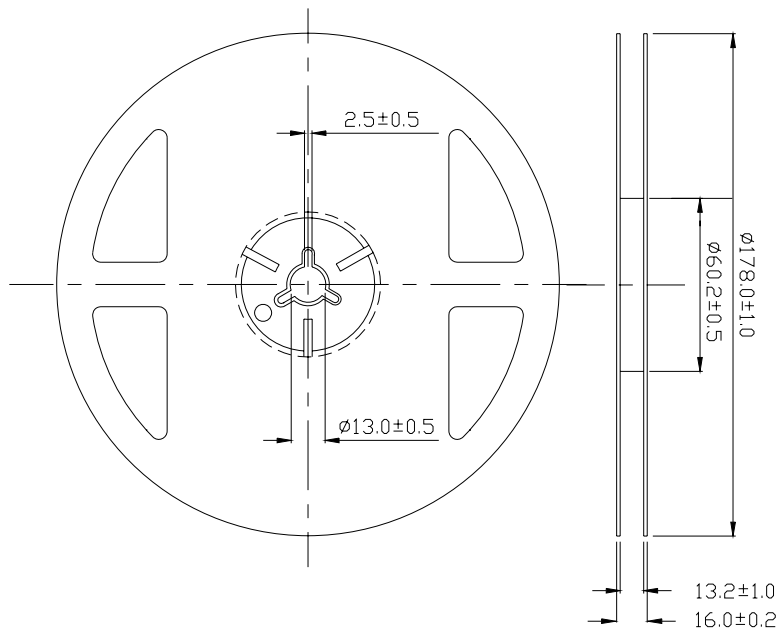
LOT NO: XXXXXXXXXXXX

MADE IN TAIWAN

RoHS

CAT:  
HUE:  
REF:

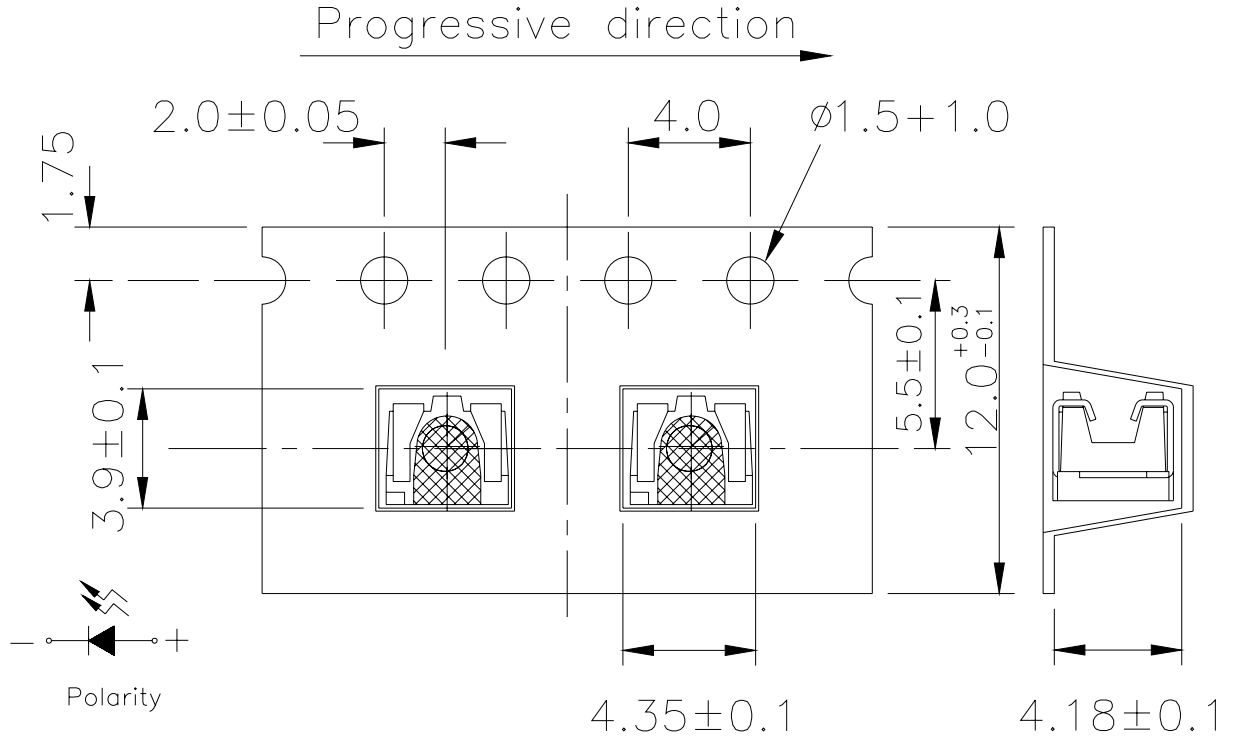
**Reel Dimensions**



**Note:** The tolerances unless mentioned is  $\pm 0.1\text{mm}$  ,Unit = mm

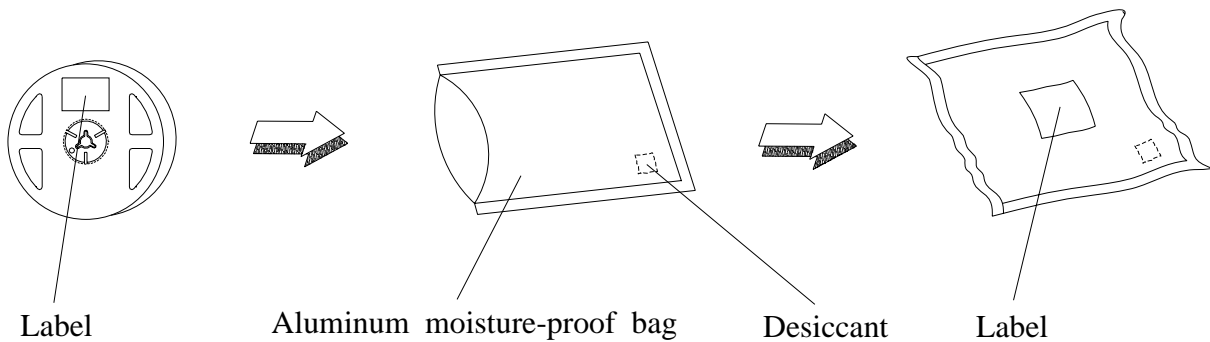
**57-21UWC/B003/TR8**

**Carrier Tape Dimensions: Loaded quantity 800 PCS per reel.**



**Note:** The tolerances unless mentioned is ±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°C±5°C Min. 5sec.	6 min	22 PCS.	0/1
2	Temperature Cycle	H : +100°C 15min § 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min § 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40°C	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	IF = 20 mA/ 25°C	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C/ 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°C or less and 90%RH or less.

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

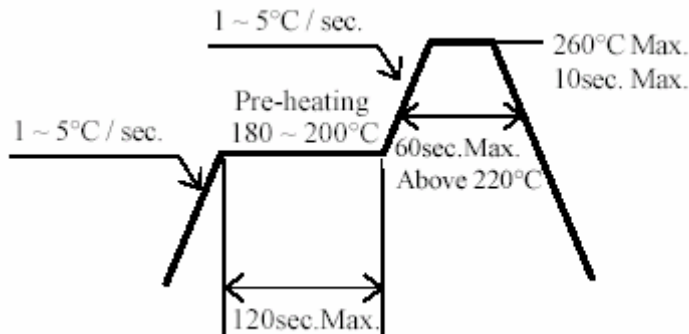
If unused LEDs remain, it should be stored in moisture proof packages.

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.

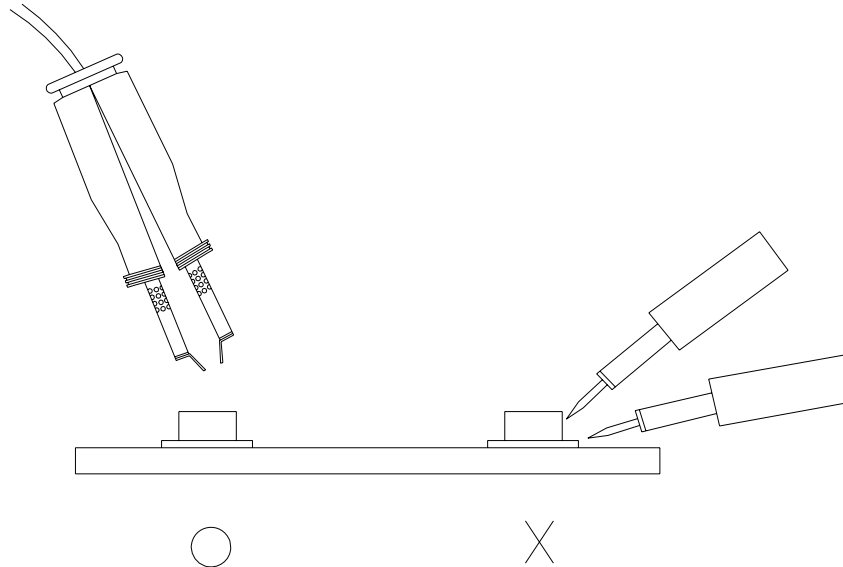
3.4 After soldering, do not warp the circuit board.

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.

**57-21UWC/B003/TR8****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>