



Technical Data Sheet

TOP View LEDs

67-21SURC/S530-A2/S610/TR8(AM)

Features

- P-LCC-2 package.
- White package.
- Optical indicator.
- Colorless clear window.
- 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.
- Pre-condition: refer to JEDEC Level 2



Descriptions

- The 67-21 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 it 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

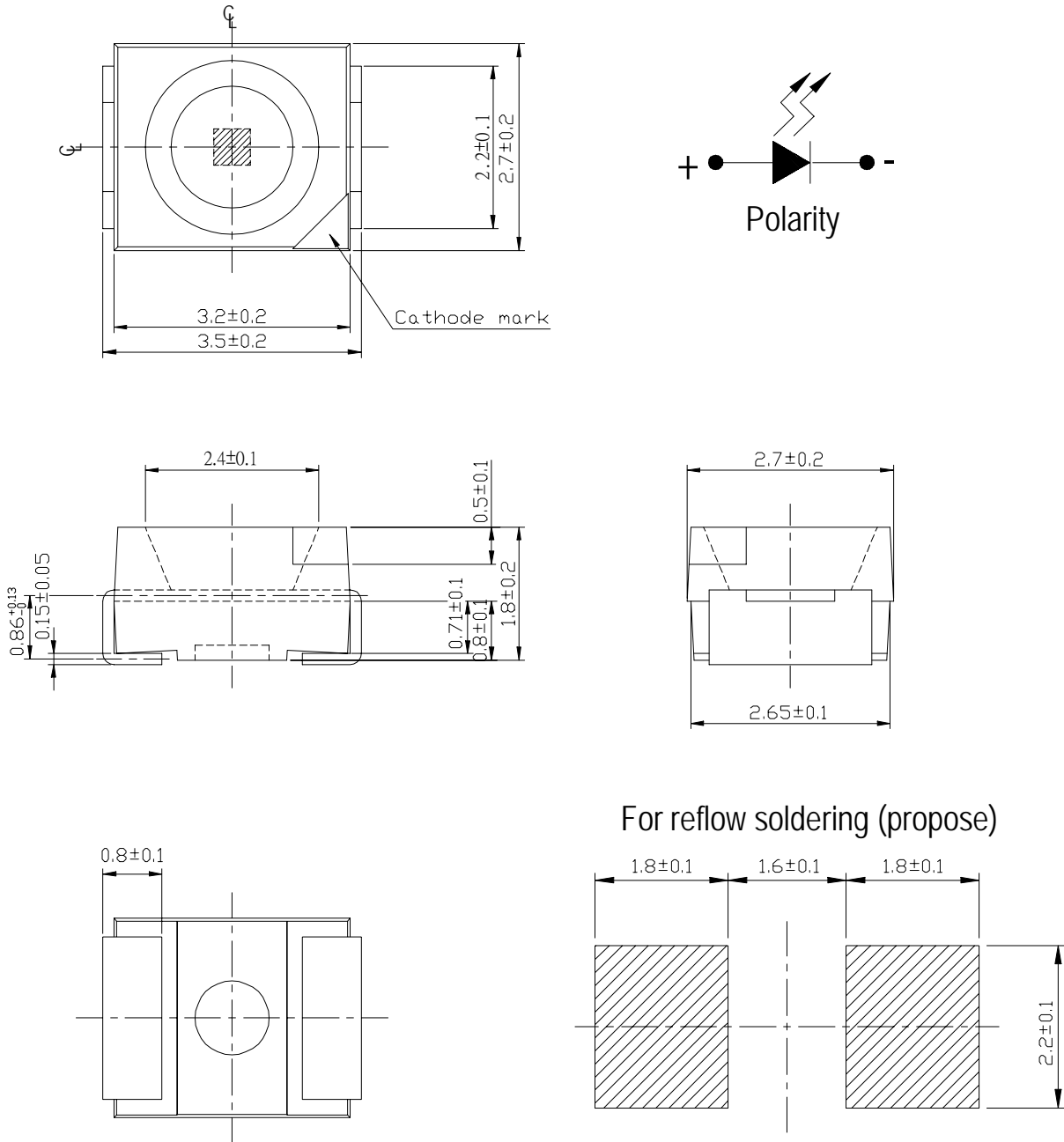
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- Light pipe application.
- General use.

Device Selection Guide

Chip		Lens Color
Material	Emitted Color	
AlGaInP	Hyper Red	Water Clear

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Package Dimensions



Notes: All dimensions are in millimeters.

67-21SURC/S530-A2/S610/TR8(AM)
Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	25	mA
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40~ +100	°C
Soldering Temperature	T _{sol}	260 (for 5 second)	°C
Electrostatic Discharge	ESD	2000	V
Power Dissipation	P _d	60	mW
Peak Forward Current(Duty 1/10 @ 1KHz)	I _{FP}	60	mA

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	32	-----	160	mcd	I _F =20mA
Viewing Angle	2θ _{1/2}	-----	120	-----	deg	I _F =20mA
Peak Wavelength	λ _p	-----	632	-----	nm	I _F =20mA
* Dominant Wavelength	λ _d	618	-----	630	nm	I _F =20mA
Spectrum Radiation Bandwidth	Δλ	-----	20	-----	nm	I _F =20mA
Forward Voltage	V _F	1.6	2.0	2.4	V	I _F =20mA
Reverse Current	I _R	-----	-----	10	μA	V _R =5V

*Tolerance ± 1nm



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Bin Range of Luminous Intensity and Dominant wavelength $I_F=20mA$

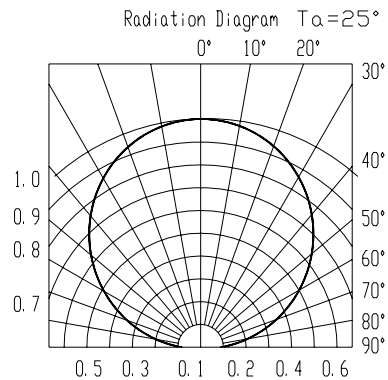
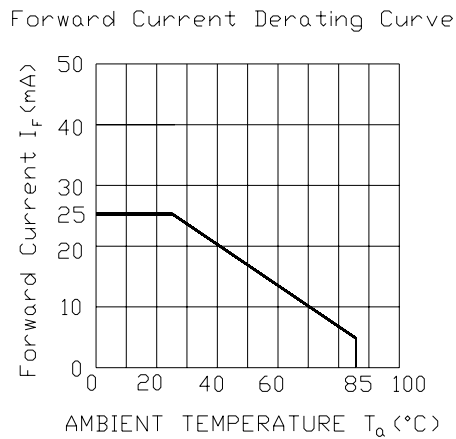
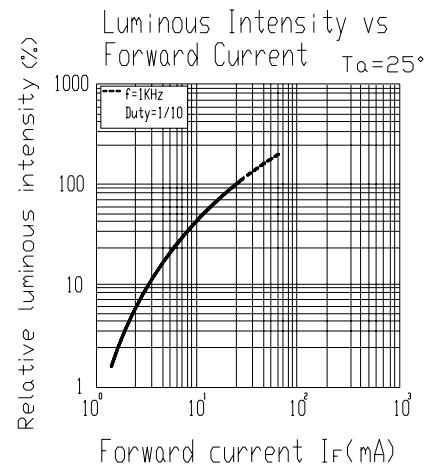
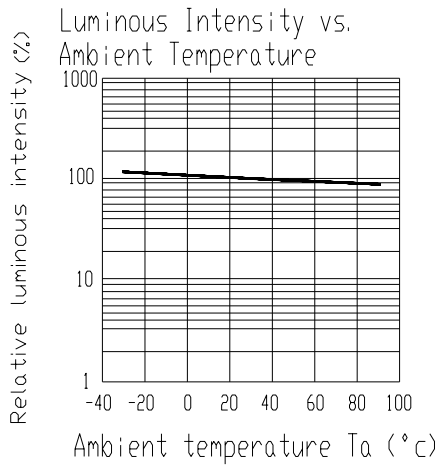
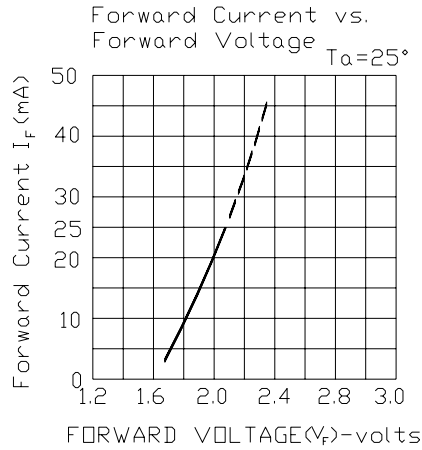
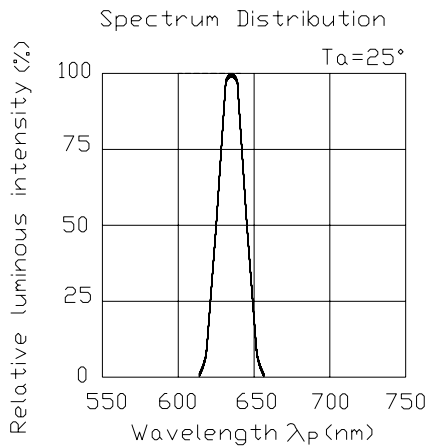
Rank	Luminous intensity(mcd)	
	Min.	Max.
N2	32.0	50.0
P1	40.0	63.0
P2	50.0	80.0
Q1	63.0	100.0
Q2	80.0	125.0
R1	100.0	160.0

Rank	Dominant wavelength(nm)	
	Min.	Max.
1	618.0	625.0
2	623.0	630.0

Rank	Forward current(v)	
	Min.	Max.
VF1	1.60	2.10
VF2	1.95	2.40

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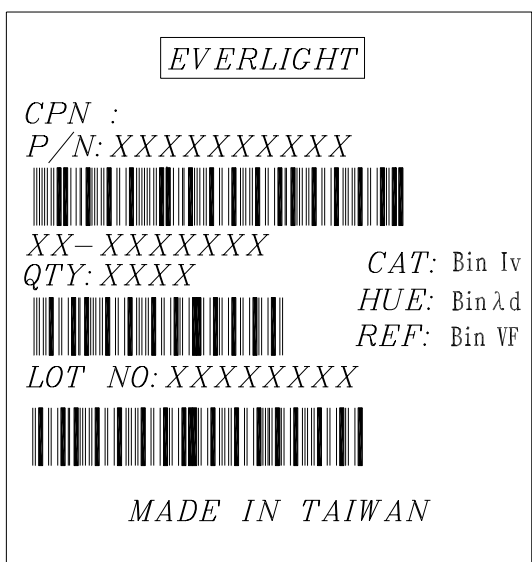
Typical Electro-Optical Characteristics Curves



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Label explanation

- CAT: Luminous Intensity Rank**
- HUE: Dom. Wavelength Rank**
- REF: Forward Voltage Rank**




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CPN :
P/N: XXXXXXXXXXXX



XX-XXXXXXXX CAT: Bin Iv
QTY: XXXX HUE: Bin λ d
REF: Bin V F

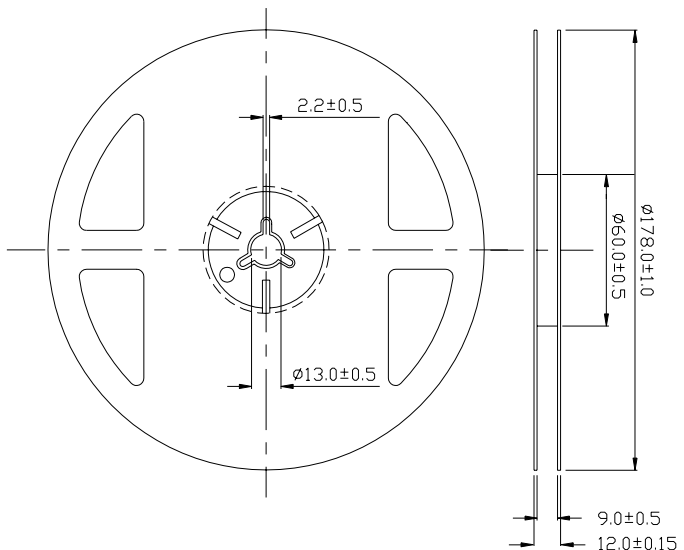


LOT NO: XXXXXXXXXXX



MADE IN TAIWAN

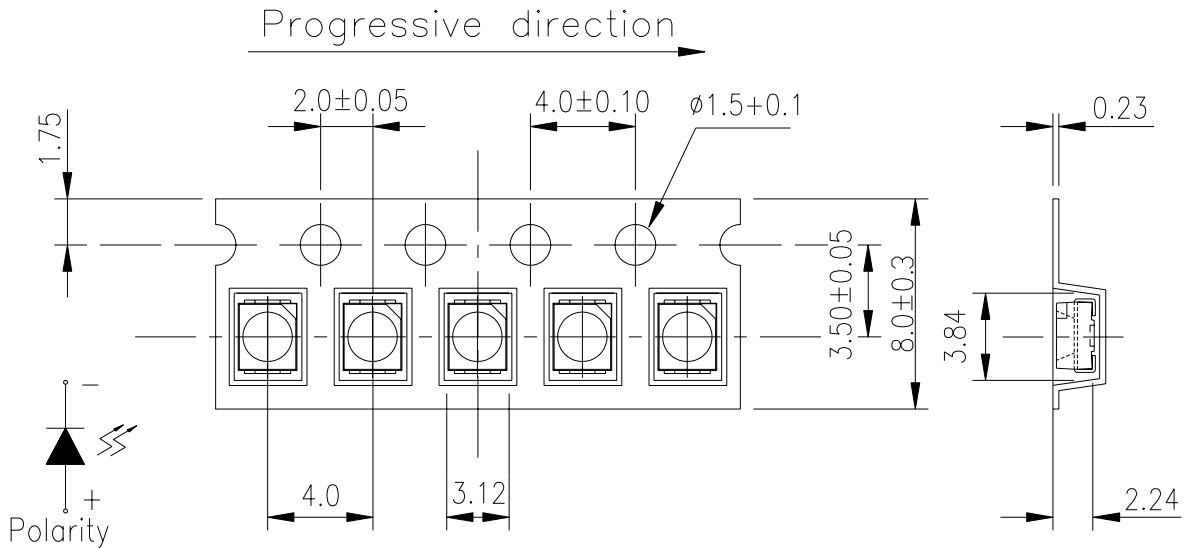
Reel Dimensions



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

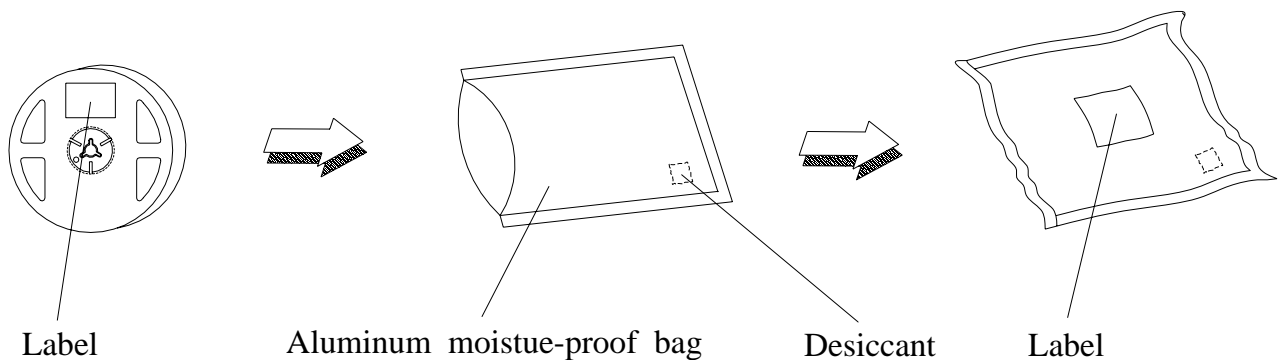
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Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



Note: Tolerances Unless Dimension $\pm 0.1\text{mm}$, Unit = mm

Moisture Resistant Packaging



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Reliability Test Items and Conditions:

Classification	Test Item	Test condition	Size
Physical	Solderability	T Sol=245 °C , Dwell time= 10 seconds	30
	Resistance to Solder Heat	Tsol=260 °C ,Dwell time=10sec, 5 times	100
Environmental	Thermal Shock	100 °C ~ -40 °C ,5min Dwell time ,<5sec transfer time, 500cycles	200
	Temperature Cycle	100 °C ~ -40 °C ,Dwell time=15min, transfer time=5min, air-to-air, 1000cycles.	231
	Wet high temp operation life	85 °C , RH=85% , 1000hr, 20mA	116
	High Temperature/Humidity Reverse Bias	85 °C , RH85% , 1000hr, -5 V	231
Aging	High Temperature Storage	100 °C , 1000hr	200
	Low Temperature Storage	-40 °C , 1000hr	200
Life Test	High Temperature Pulsed	Ta=55 °C ,1000hr. Duty cycle 1/5, Peak current 100mA, 1000Hz	50
	High Temperature Operation Life # 1	Ta=55 °C , 1000hr, 30mA	50
	High Temperature Operation Life # 2	Ta=85 °C , 1000hr, 20mA	50
	Low Temperature Operation Life	Ta= - 40 °C , 1000hr, 20 mA	50
Strife	Power Temperature Cycle	-40 °C ~ 85 °C , 20 mA Dwell/transfer time=15min, 2 min on/off, 1000 cycles	50
ESD Susceptibility	Human Body Model	2000V, 3 time, interval: 0.5sec	50
	Machine Model	200V, 3 time, interval: 0.5sec	30

Failure conditions:

Measuring Terms	Failure Criteria
Luminous Intensity (Iv)	Results < Initial value ×50%
Forward Voltage (Vf)	Results > Initial value ×120%

67-21SURC/S530-A2/S610/TR8(AM)**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 The LEDs should be used within a year.

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

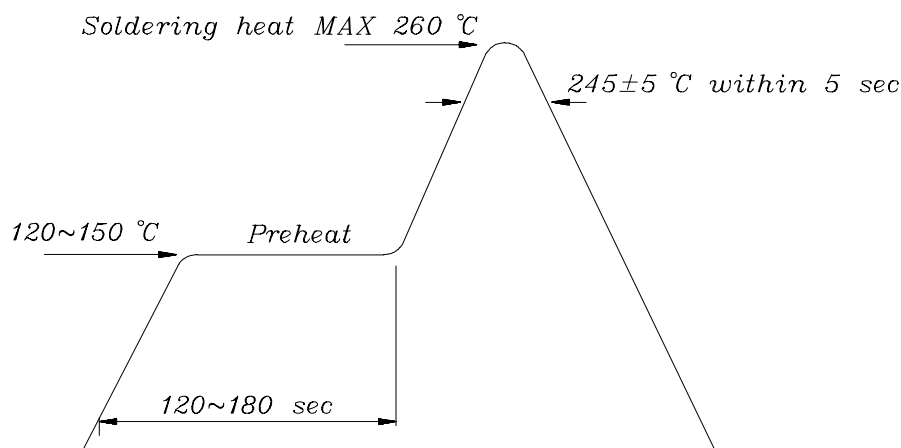
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

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°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.

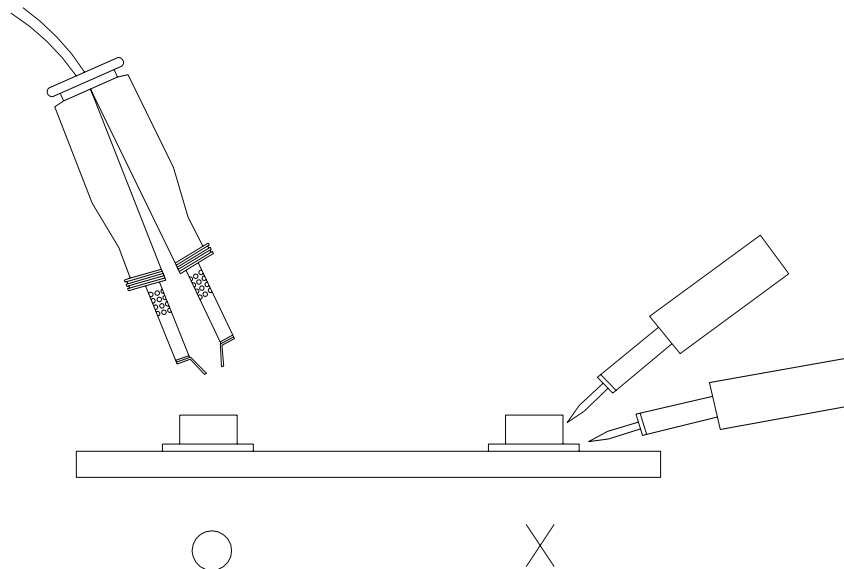
3.4 After soldering, do not warp the circuit board.

67-21SURC/S530-A2/S610/TR8(AM)**4.Soldering Iron**

Each terminal is to go to the tip of soldering iron temperature less than 280°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.



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