

Technical Data Sheet**Top View LEDs****67-21/T2C-ZV1W2E/2T****Features**

- P-LCC-2 package.
- Fluorescence Type
- High Luminous Intensity
- High Efficiency

Pb-free.

The product itself will remain within RoHS compliant version.

Compliance with EU REACH

Compliance Halogen Free .(Br<900ppm,CI<900ppm,Br+CI<1500ppm)

Precondition: Bases on JEDEC J-STD 020D Level 3

**Descriptions**

The white LED which was fabricated using a blue LED and a phosphor, and the phosphor is excited by blue light and emits yellow fluorescence. The mixture of blue light and yellow light results in a white emission.

Applications

- OA equipment
- Backlighting of full color LCD
- Automotive equipment
- Replacement of conventional light bulbs and fluorescent lamps

Device Selection Guide

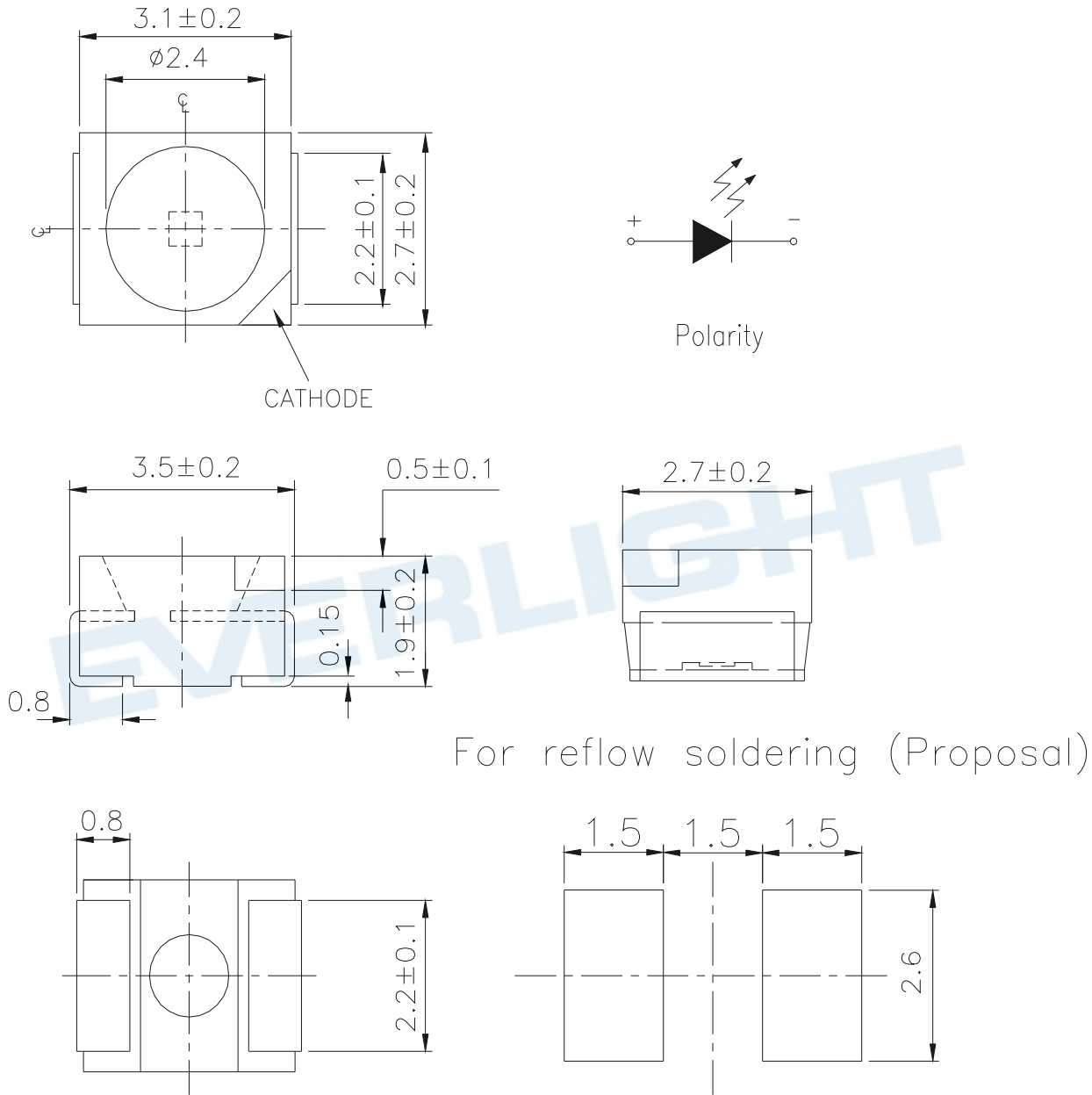
Chip	Emitted Color	Resin Color
Material		
InGaN	White	Water Clear

Technical Data Sheet

Top View LEDs

67-21/T2C-ZV1W2E/2T

Package Dimensions



Note: Tolerance unless mentioned is: ± 0.1 mm; Unit = mm

Technical Data Sheet**Top View LEDs****67-21/T2C-ZV1W2E/2T****Absolute Maximum Ratings (Ta=25℃)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	30	mA
Peak Forward Current (Duty 1/10 @1KHz)	I _{FP}	100	mA
Power Dissipation	P _d	110	mW
Electrostatic Discharge(HBM)	ESD	1000	V
Operating Temperature	T _{opr}	-40 ~ +85	℃
Storage Temperature	T _{stg}	-40 ~ +90	℃
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.	Units	Condition
Luminous Intensity	I _v	715	--	2240	mcd	I _F =20mA
Viewing Angle	2θ _{1/2}	--	120	--	deg	I _F =20mA
Forward Voltage	V _F	2.75	--	3.65	V	I _F =20mA
Reverse Current	I _R	--	--	50	μA	V _R =5V

Notes:

- 1.Tolerance of Luminous Intensity: ±11%
- 2.Tolerance of Forward Voltage: ±0.05V

Technical Data Sheet**Top View LEDs****67-21/T2C-ZV1W2E/2T****Bin Range of Luminous Intensity**

Bin Code	Min.	Max.	Unit	Condition
V1	715	900	mcd	$I_F=20\text{mA}$
V2	900	1120		
W1	1120	1420		
W2	1420	1800		
BA	1800	2240		

Bin Range of Forward Voltage

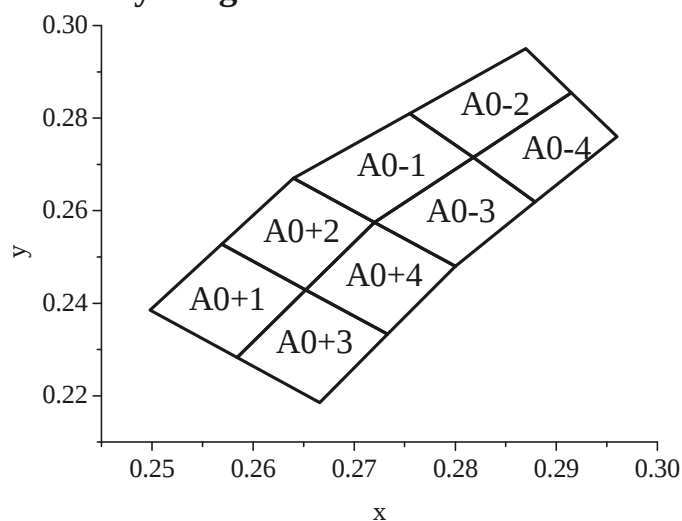
Group	Bin Code	Min.	Max.	Unit	Condition
E	5	2.75	3.05	V	$I_F=20\text{mA}$
	6	3.05	3.35		
	7	3.35	3.65		

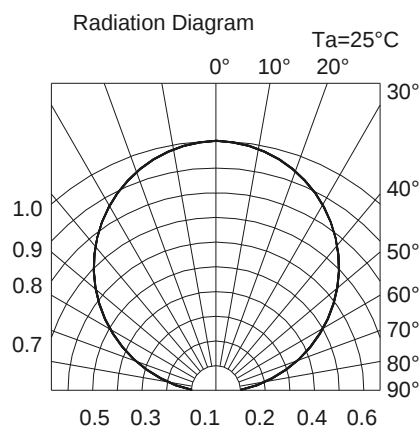
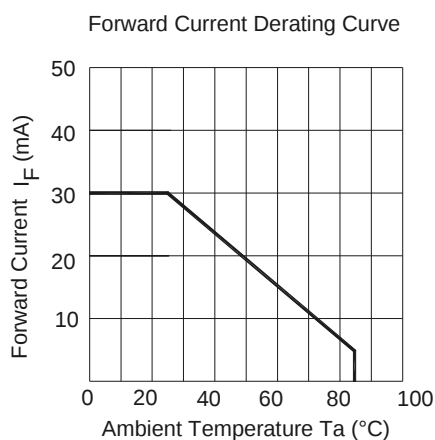
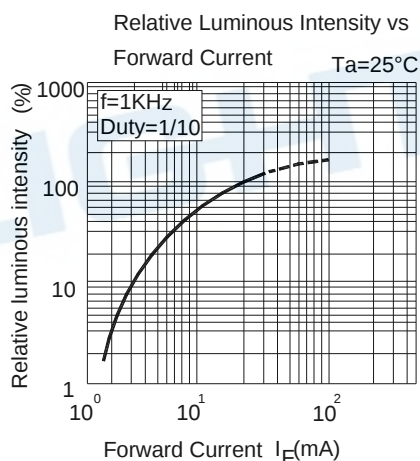
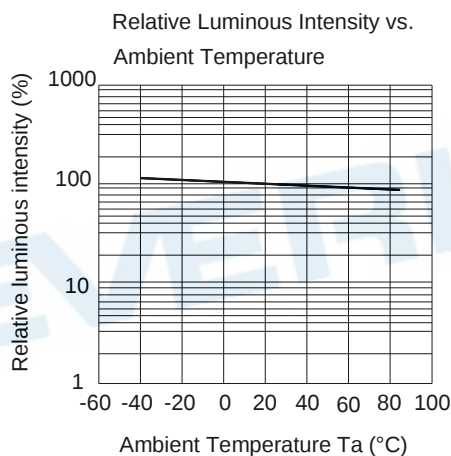
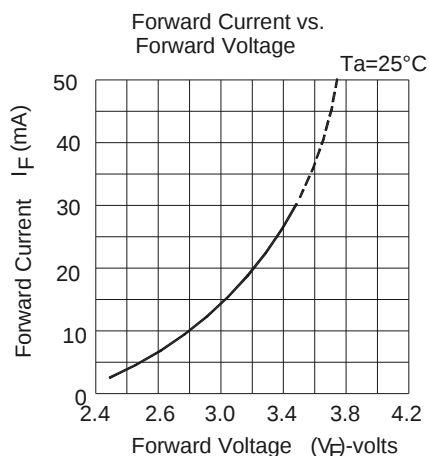
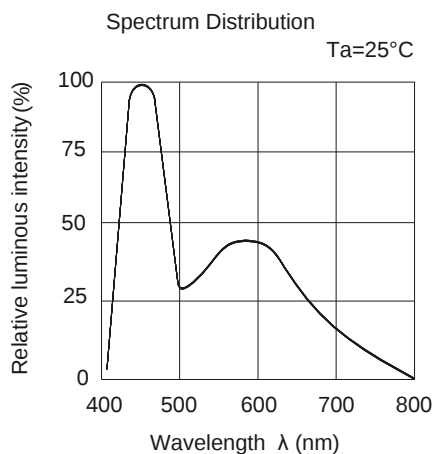
Notes:

- 1.Tolerance of Luminous Intensity: $\pm 11\%$
- 2.Tolerance of Forward Voltage: $\pm 0.1\text{V}$

Technical Data Sheet**Top View LEDs****67-21/T2C-ZV1W2E/2T****Bin Range of Chromaticity Coordinate**

Group	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y	Condition
Z	A0-1	0.2720	0.2575	A0-3	0.2800	0.2480	I _F =20mA
		0.2640	0.2670		0.2720	0.2575	
		0.2755	0.2810		0.2818	0.2715	
		0.2818	0.2715		0.2879	0.2619	
	A0-2	0.2818	0.2715	A0-4	0.2879	0.2619	
		0.2755	0.2810		0.2818	0.2715	
		0.2870	0.2950		0.2915	0.2855	
		0.2915	0.2855		0.2960	0.2760	
	A0+1	0.2569	0.2528	A0+3	0.2652	0.2429	
		0.2498	0.2385		0.2584	0.2283	
		0.2584	0.2283		0.2666	0.2185	
		0.2652	0.2429		0.2733	0.2333	
	A0+2	0.2640	0.2670	A0+4	0.2720	0.2575	
		0.2569	0.2528		0.2652	0.2429	
		0.2652	0.2429		0.2733	0.2333	
		0.2720	0.2575		0.2800	0.2480	

Note: Tolerance of Chromaticity Coordinates: ± 0.01 **The C.I.E. 1931 Chromaticity Diagram**

Technical Data Sheet**Top View LEDs****67-21/T2C-ZV1W2E/2T****Typical Electro-Optical Characteristics Curves**

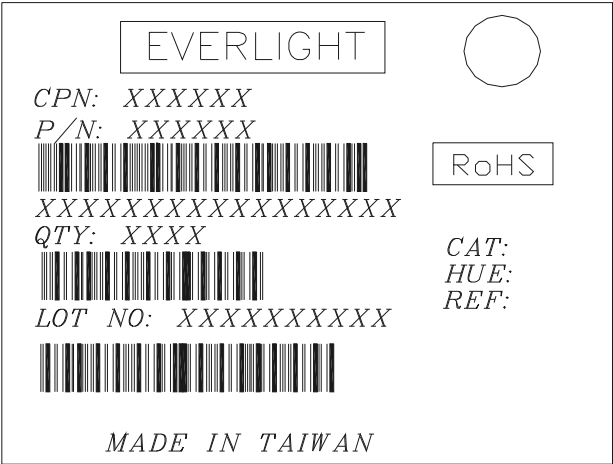
Technical Data Sheet

Top View LEDs

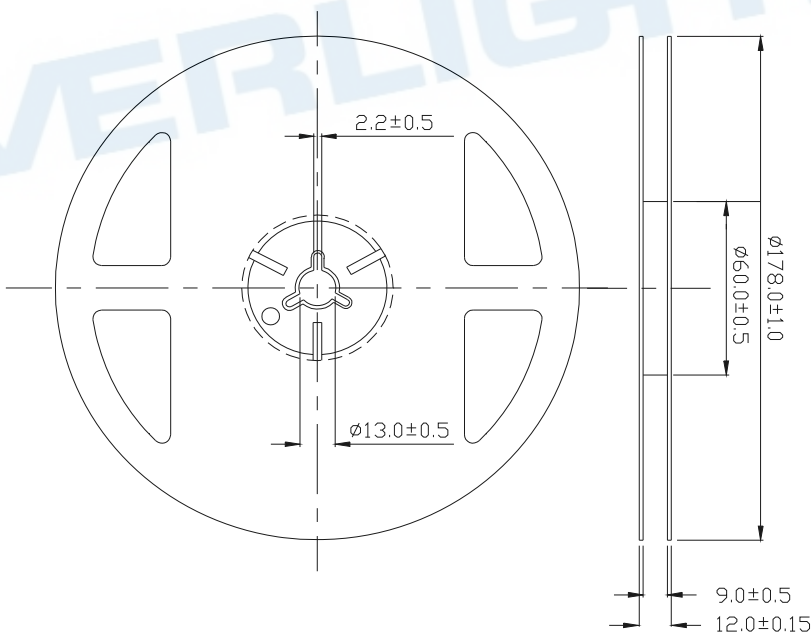
67-21/T2C-ZV1W2E/2T

Label Explanation

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



Reel Dimensions



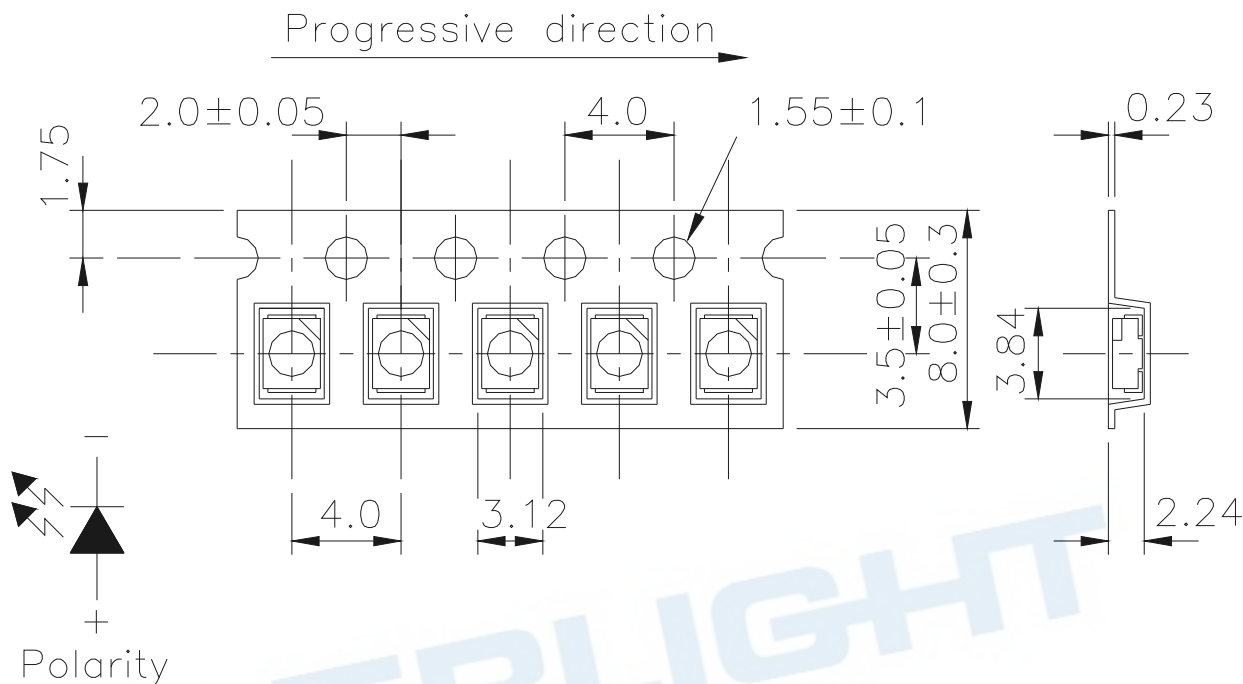
Note: Tolerance unless mentioned is: 1mm; Unit = mm

Technical Data Sheet

Top View LEDs

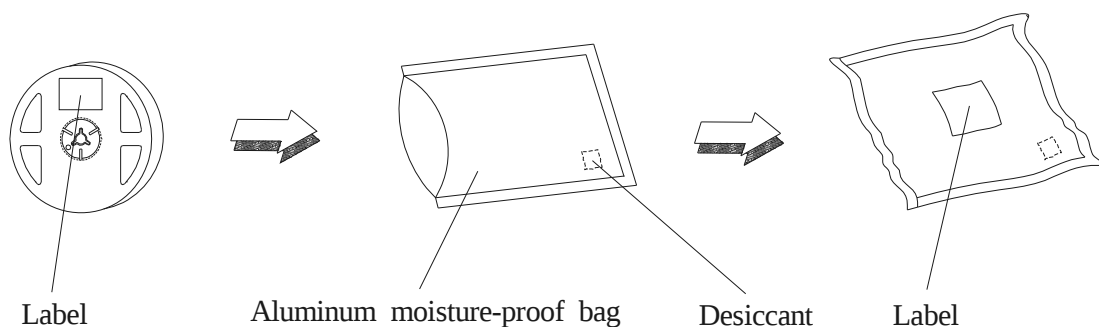
67-21/T2C-ZV1W2E/2T

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel.



Note: Tolerance unless mentioned is: $\pm 0.1\text{mm}$; Unit = mm

Moisture Resistant Packaging



Technical Data Sheet**Top View LEDs****67-21/T2C-ZV1W2E/2T****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. 10sec.	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	I _F = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 Hrs.	22 PCS.	0/1

Technical Data Sheet**Top View LEDs****67-21/T2C-ZV1W2E/2T****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

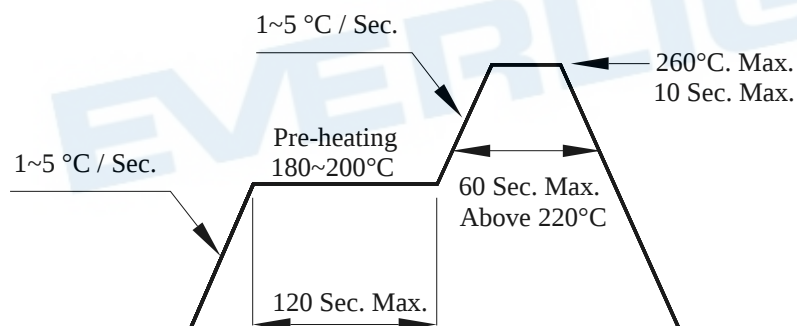
2.1 Do not open moisture proof bag before the products are ready to use.

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°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.

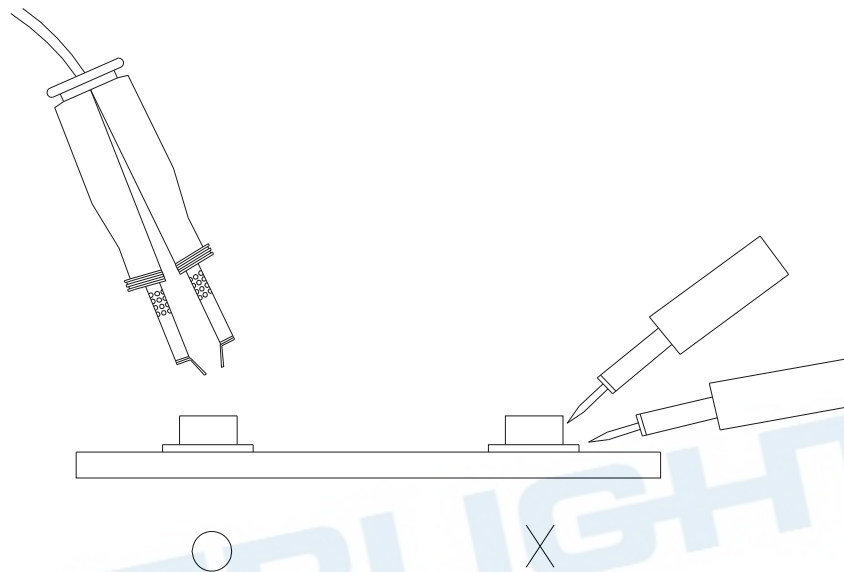
3.4 After soldering, do not warp the circuit board.

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.

Technical Data Sheet**Top View LEDs****67-21/T2C-ZV1W2E/2T****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.



Technical Data Sheet

Top View LEDs

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DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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