

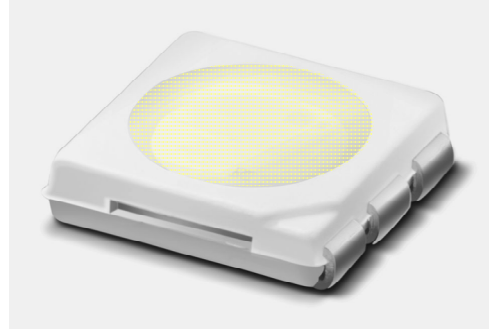
Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

Features

- Super-luminosity chip LED.
- White SMT package.
- Lead frame package with individual 6 pins.
- Wide viewing angle.
- Soldering methods: IR reflow soldering.
- Pb-free.
- The product itself will remain within RoHS compliant version.



Descriptions

- Due to the package design, 61-236 has wide viewing angle, low power consumption and adjusting each color is possible thanks to serial connection by 6 terminal connection (Individual driving by each terminal) in case of using several number of LED. And makes it ideal for light pipe application.

Applications

- Amusement equipment.
- Information boards.
- Flashlight for digital camera of cellular phone.

Device Selection Guide

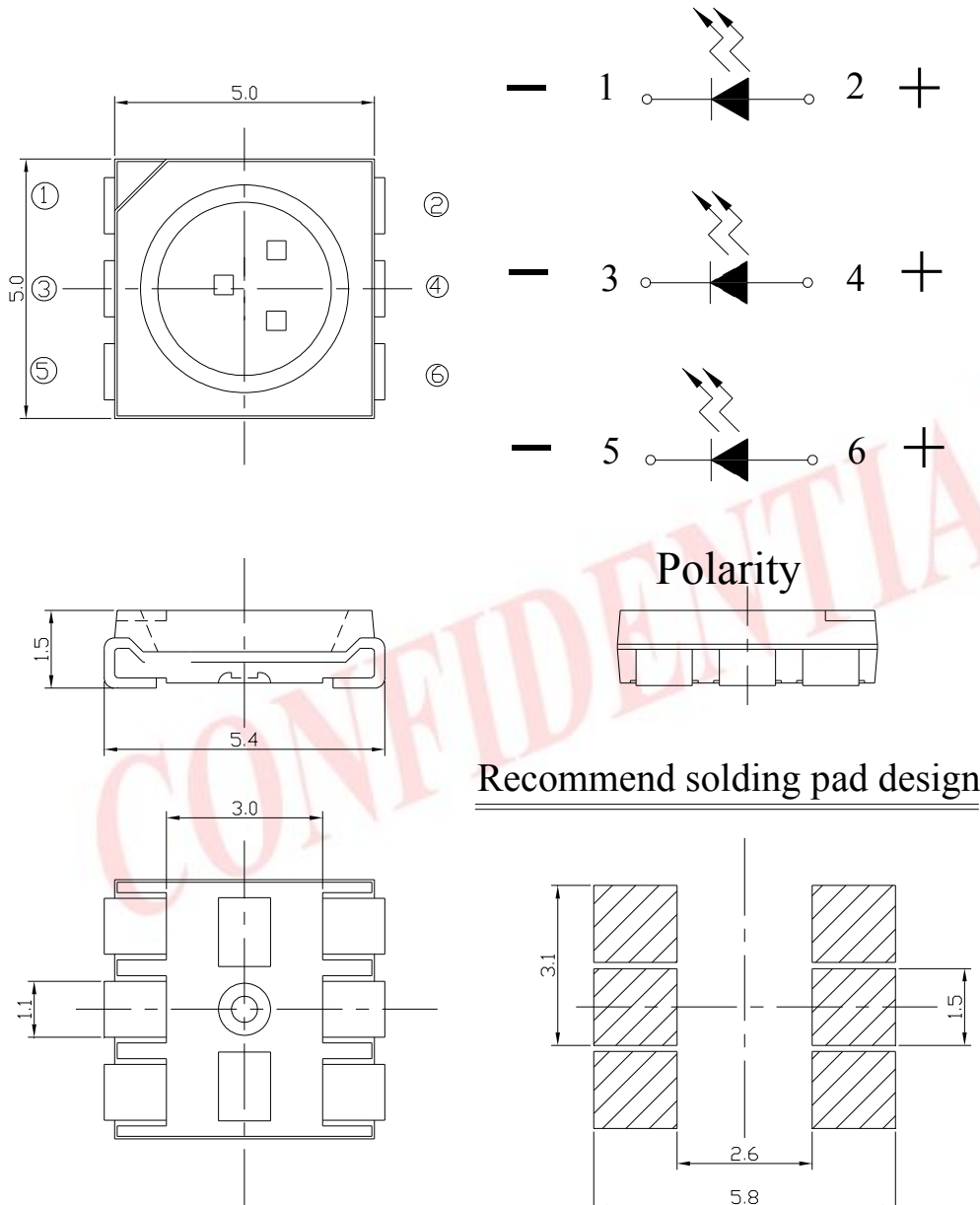
Chip	Emitted Color	Resin Color
Material		
InGaN	Pure White	Water Clear

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

Package Outline Dimensions



Note: The tolerances unless mentioned is ± 0.1 mm; Unit = mm

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

Absolute Maximum Ratings (Ta=25)^{*1}

Parameter	Symbol	Rating	Unit
Reverse Voltage	R	5	V
Forward Current	I _F	30	mA
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _{FP}	100	mA
Power Dissipation	P _d	190	mW
Electrostatic Discharge(HBM)	ESD	1000	V
Operating Temperature ^{*2}	Topr	-40 ~ +85	
Storage Temperature ^{*2}	Tstg	-40~ +90	
Soldering Temperature ^{*2}	Tsol	Reflow Soldering : 260 Hand Soldering : 350	for 10 sec. for 3 sec.

* 1. The value are based on 1 die performance

* 2.Each Led

CONFIDENTIAL

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

Electro-Optical Characteristics (Ta=25)

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Luminous Intensity ^{*1}	I _V	4500	---	7200	mcd	I _F =20mA ^{*2}
Viewing Angle ^{*2}	2 1/2	---	120	---	deg	I _F =20mA ^{*2}
Forward Voltage ^{*2}	V _F	2.7	---	3.5	V	I _F =20mA ^{*2}
Reverse Current	I _R	--	--	50	μA	V _R =5V

*1. When three LED dies are operated simultaneously.

*2. For each die.

Notes:

1. Tolerance of Luminous Intensity: ±11%

CONFIDENTIAL

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

Bin Range of Luminous Intensity^{*1}

Bin Code	Min.	Max.	Unit	Condition
Z01	4500	5700	mcd	I _F ^{*2} =20mA
Z02	5700	7200		

*1. When three LED dies are operated simultaneously.

*2. For each die.

Notes:

1. Tolerance of Luminous Intensity: ±11%

Bin Range of Forward Voltage

Group	Bin Code	Min.	Max.	Unit	Condition
B14	34	2.70	2.80	V	I _F ^{*2} =20mA
	35	2.80	2.90		
	36	2.90	3.00		
	37	3.00	3.10		
	38	3.10	3.20		
	39	3.20	3.30		
	40	3.30	3.40		
	41	3.40	3.50		

*2. For each die.

Note:

1. Forward Voltage rank is the average forward voltage of three dies
2. Tolerance of Forward Voltage: ±0.05V

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

Bin Range of Chromaticity Coordinates *1

CCT	Bin Code	CIE_x	CIE_y	CCT	Bin Code	CIE_x	CIE_y	
7000K ~6300K	X4	0.3010	0.3420	6300K ~5650K	W4	0.3290	0.3690	
		0.3140	0.3550			0.3290	0.3570	
		0.3150	0.3440			0.3150	0.3440	
		0.3030	0.3330			0.3140	0.3550	
	X5	0.3050	0.3220		W5	0.3290	0.3450	
		0.3030	0.3330			0.3160	0.3330	
		0.3150	0.3440			0.3150	0.3440	
		0.3160	0.3330			0.3290	0.3570	
	X6	0.3080	0.3110		W6	0.3290	0.3450	
		0.3050	0.3220			0.3290	0.3310	
		0.3160	0.3330			0.3170	0.3200	
		0.3170	0.3200			0.3160	0.3330	
	X7	0.3080	0.3110		W7	0.3290	0.3310	
		0.3170	0.3200			0.3290	0.3200	
		0.3190	0.3000			0.3180	0.3100	
		0.3110	0.2930			0.3170	0.3200	
					W8	0.3290	0.3200	
						0.3290	0.3100	
						0.3190	0.3000	
						0.3180	0.3100	

*1. When three LED dies are operated simultaneously.

Note:

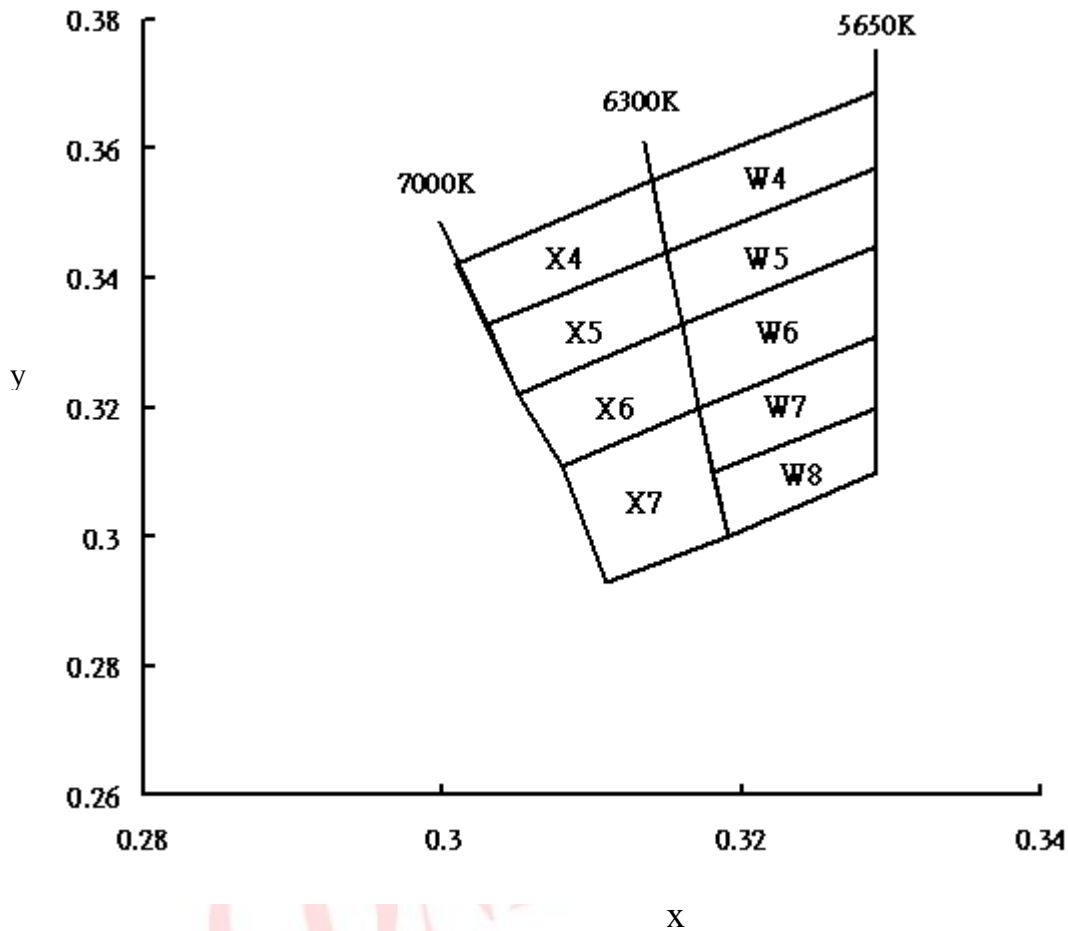
1. Tolerance of the Chromaticity Coordinates: ± 0.01

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

The CIE 1931 Chromaticity Diagram

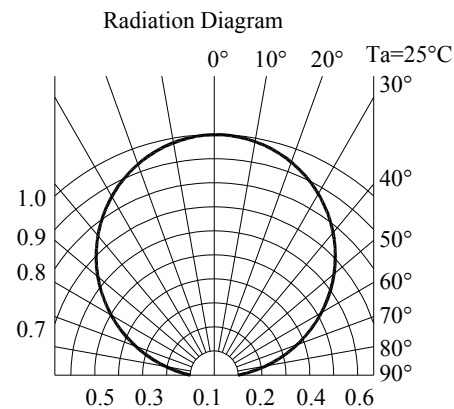
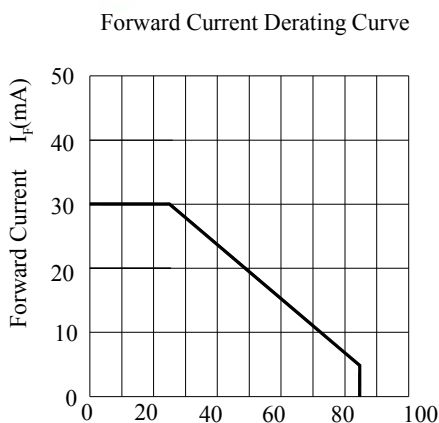
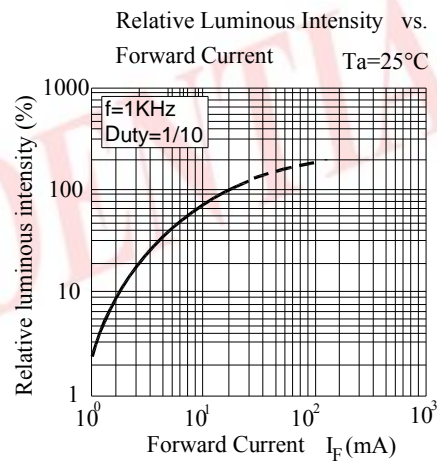
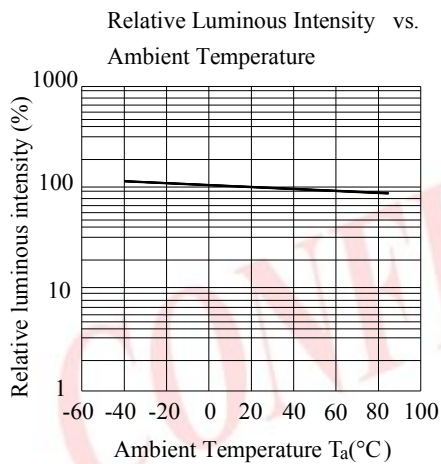
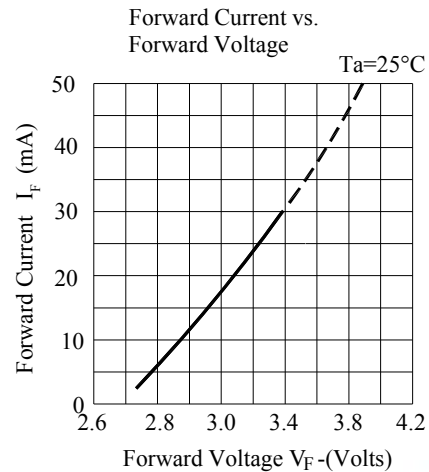
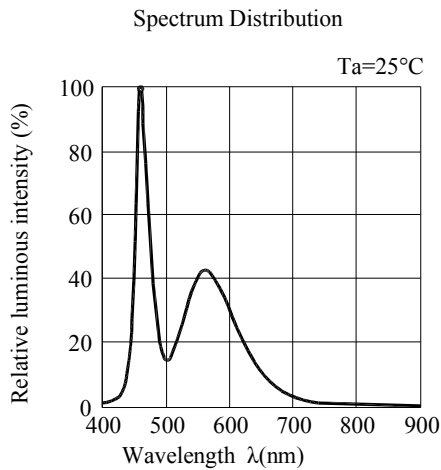


Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

Typical Electro-Optical Characteristics Curves



Technical Data Sheet

Top View LEDs

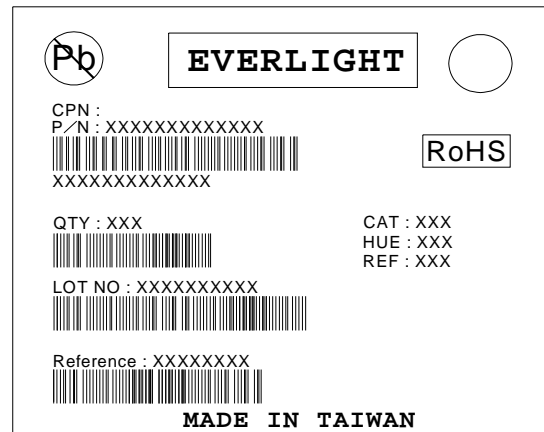
61-236/L2C-W5670Z01Z02B14/ET

Label Explanation

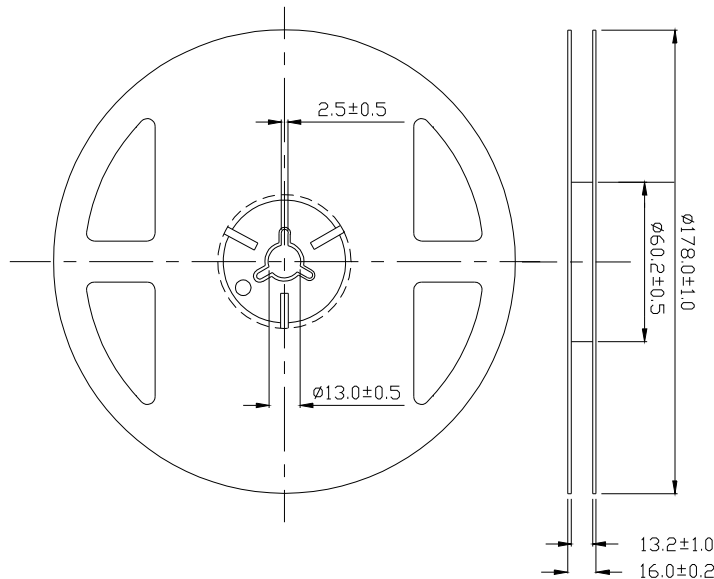
CAT: Luminous Intensity Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank



Reel Dimensions



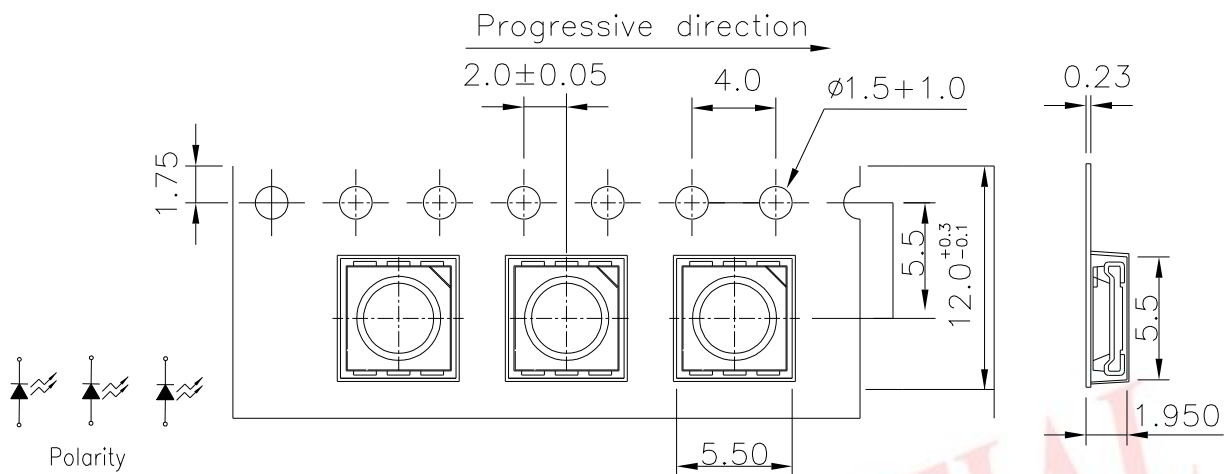
Note: Tolerance unless mentioned is ± 0.1 mm, Unit = mm

Technical Data Sheet

Top View LEDs

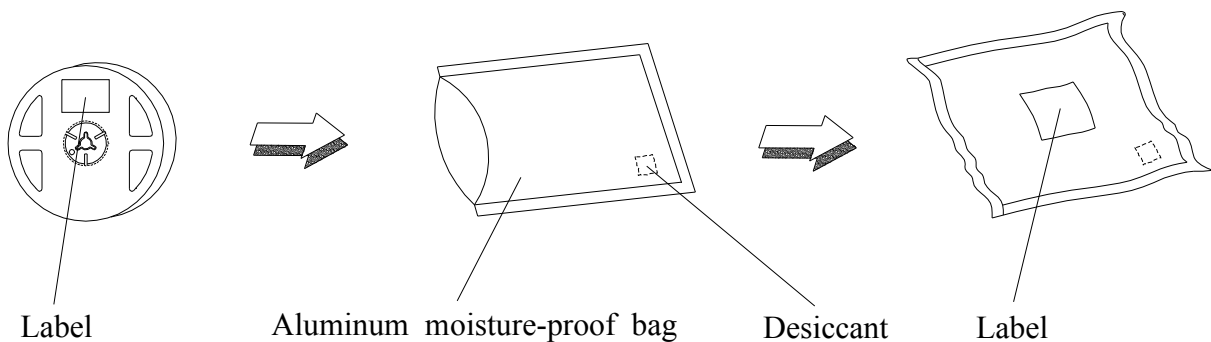
61-236/L2C-W5670Z01Z02B14/ET

Carrier Tape Dimensions: Loaded Quantity 800 pcs Per Reel



Note: Tolerances unless mentioned is ±0.1mm, Unit = mm

Moisture Resistant Packaging





EVERLIGHT ELECTRONICS CO., LTD.

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

CONFIDENTIAL

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

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	$I_F^{*2} = 20 \text{ mA}$	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85 / 85%RH	1000 Hrs.	22 PCS.	0/1

*2. For each die.

Technical Data Sheet

Top View LEDs

61-236/L2C-W5670Z01Z02B14/ET

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.

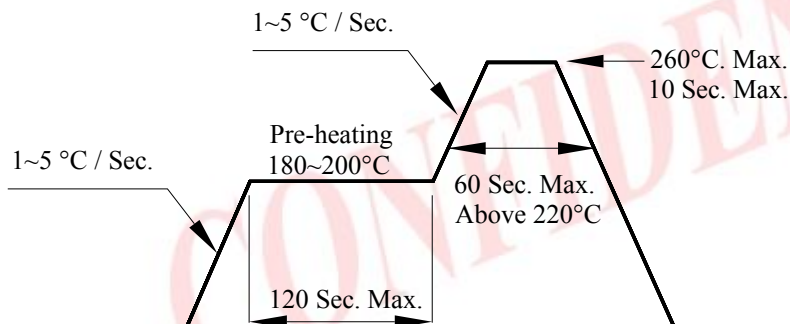
If unused LEDs remain, it should be stored in moisture proof packages.

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.

Technical Data Sheet

Top View LEDs

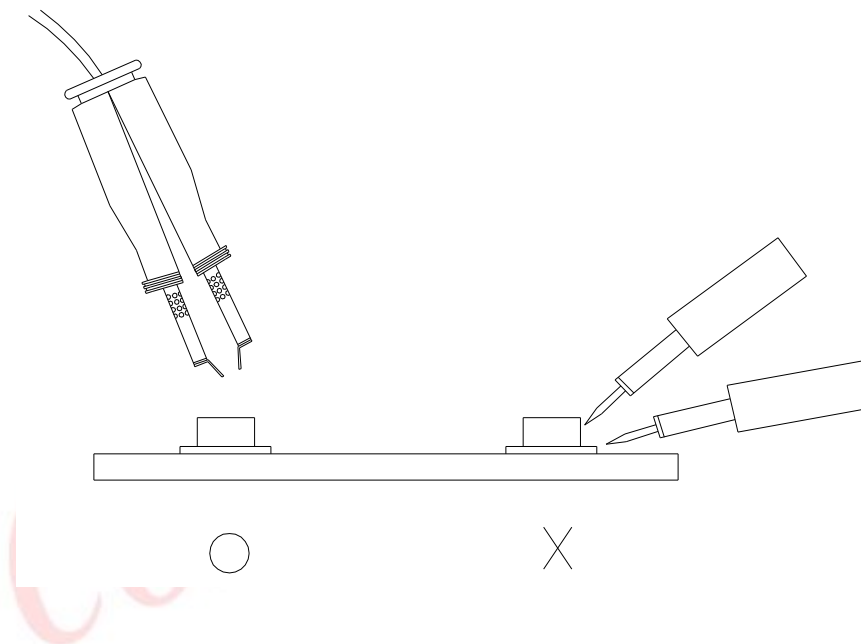
61-236/L2C-W5670Z01Z02B14/ET

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350 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>