

### SMD ■ MID POWER LED

62-217B/KK2C-S3030L6M4B2Z6/2T



#### Features

- PLCC-4 Package
- Top view white LED
- High luminous flux output
- High current capability
- Wide viewing angle
- Pb-free
- RoHS compliant
- ANSI Binning

#### Description

The Everlight 0.2W 62-217B package has high efficacy, high CRI, low power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting application.

#### Applications

- Decorative and Entertainment Lighting
- Light pipe application
- Indicator and backlight in office and family equipment
- General use

## Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	Warm White	Water Clear

## Absolute Maximum Ratings ( $T_{\text{Soldering}}=25^{\circ}\text{C}$ )

Parameter	Symbol	Rating	Unit
Forward Current	$I_F$	100	mA
Peak Forward Current (Duty 1/10 @10ms)	$I_{FP}$	300	mA
Power Dissipation	$P_d$	350	mW
Operating Temperature	$T_{opr}$	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^{\circ}\text{C}$
Thermal Resistance (Junction / Soldering point)	$R_{th\ J-S}$	28	$^{\circ}\text{C/W}$
Junction Temperature	$T_j$	115	$^{\circ}\text{C}$
Soldering Temperature	$T_{sol}$	Reflow Soldering : 260 $^{\circ}\text{C}$ for 10 sec. Hand Soldering : 350 $^{\circ}\text{C}$ for 3 sec.	

## Electro-Optical Characteristics ( $T_{\text{Soldering}}=25^{\circ}\text{C}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Flux	$\Phi$	15	-----	24	lm	$I_F=60\text{mA}$
Forward Voltage	$V_F$	2.9	-----	3.6	V	$I_F=60\text{mA}$
Viewing Angle	$2\theta_{1/2}$	-----	120	-----	deg	$I_F=60\text{mA}$
Color Rendering Index	Ra	80	-----	-----		$I_F=60\text{mA}$
Reverse Current	$I_R$	-----	-----	50	$\mu\text{A}$	$V_R = 5\text{V}$

Notes:

1. Tolerance of Luminous flux:  $\pm 11\%$ .
2. Tolerance of Forward Voltage :  $\pm 0.1\text{V}$ .
3. Tolerance of Color Rendering Index:  $\pm 2$

### Bin Range of Luminous Flux

Bin Code	Min.	Max.	Unit	Condition
L6	15	16	lm	I <sub>F</sub> =60mA
L7	16	17		
L8	17	18		
L9	18	19		
M3	19	21		
M4	21	24		

Notes:  
 Tolerance of Luminous flux: ±11%

### Bin Range of Forward Voltage

Group	Bin Code	Min.	Max.	Unit	Condition
B2	36	2.9	3.0	V	I <sub>F</sub> =60mA
	37	3.0	3.1		
	38	3.1	3.2		
	39	3.2	3.3		
	40	3.3	3.4		
	41	3.4	3.5		
	42	3.5	3.6		

Notes:  
 Tolerance of Forward Voltage : ±0.1V.

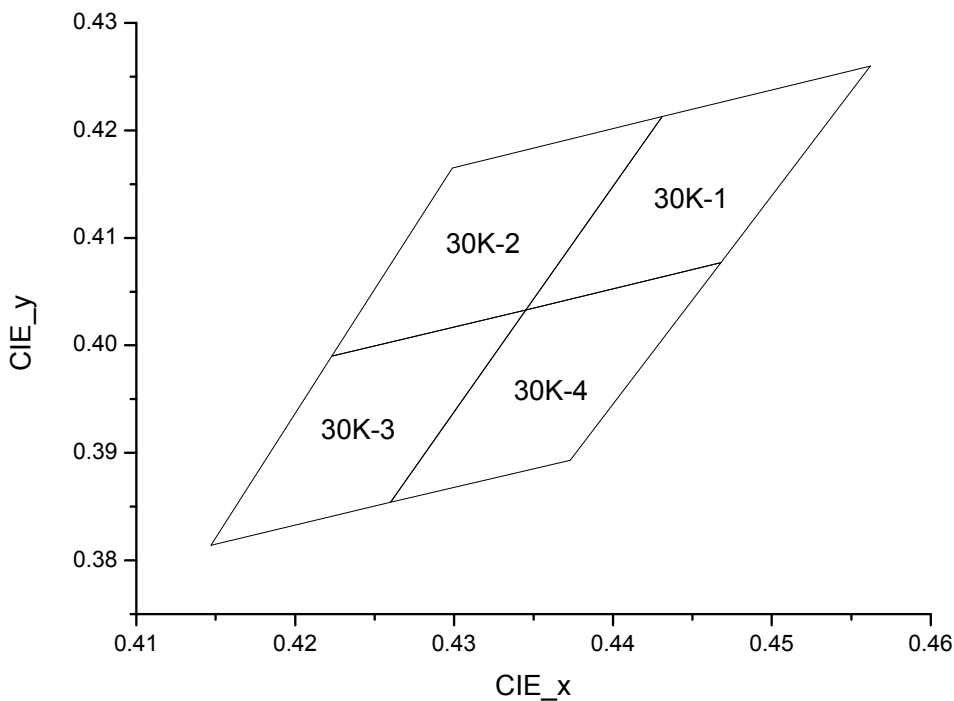
### Bin Range of Chromaticity Coordinate

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
3000K	30K-1	0.4562	0.4260	30K-3	0.4345	0.4033
		0.4431	0.4213		0.4223	0.3990
		0.4345	0.4033		0.4147	0.3814
		0.4468	0.4077		0.4260	0.3854
	30K-2	0.4431	0.4213	30K-4	0.4468	0.4077
		0.4299	0.4165		0.4345	0.4033
		0.4223	0.3990		0.4260	0.3854
		0.4345	0.4033		0.4373	0.3893

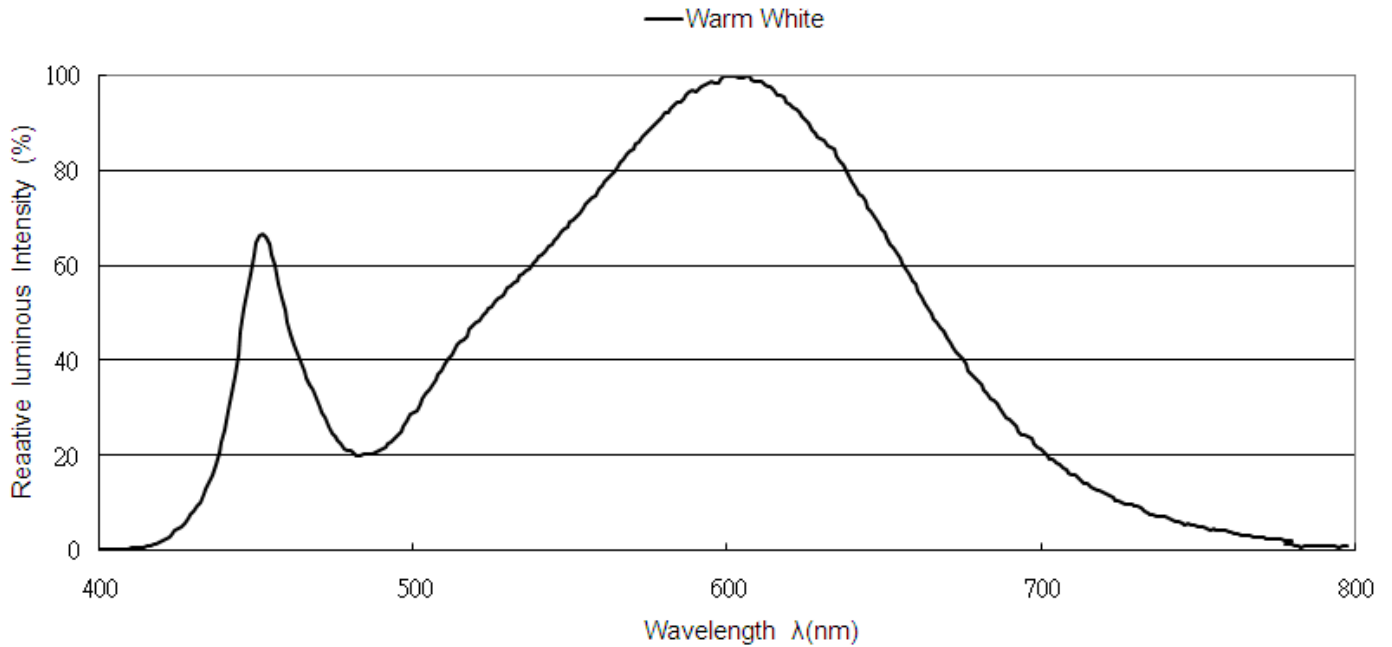
Notes:

1. The value are based on driving current by 60mA.
2. Tolerance of Chromaticity Coordinates :  $\pm 0.01$ .

### The C.I.E. 1931 Chromaticity Diagram



### Spectrum Distribution



### Typical Electro-Optical Characteristics Curves

Fig.1 - Forward Voltage Shift vs. Junction Temperature

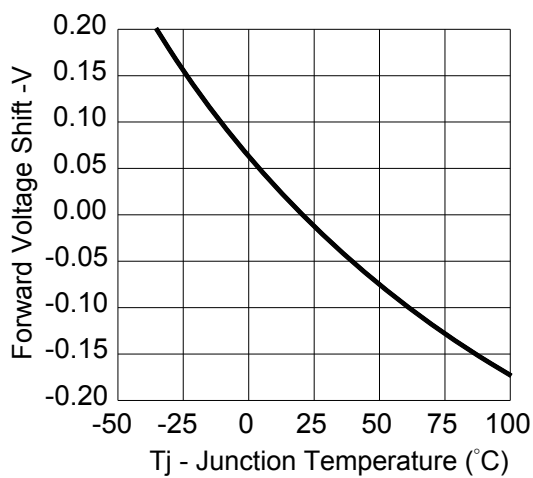
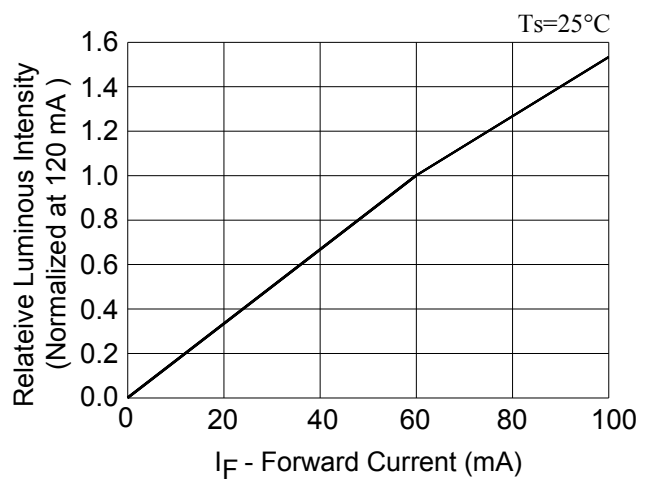


Fig.2 - Relative Luminous Intensity vs. Forward Current



Typical Electro-Optical Characteristics Curves

Fig.3 - Relative Luminous Intensity vs. Junction Temperature

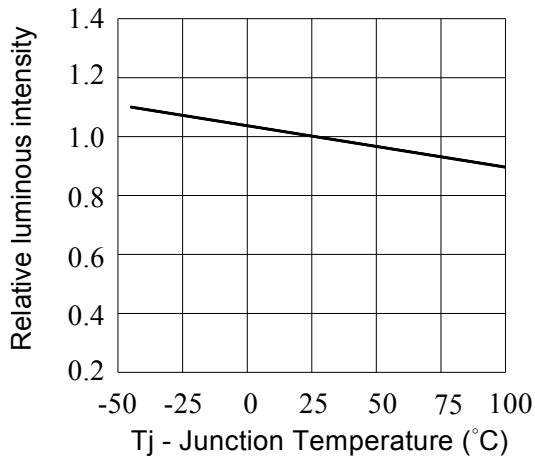


Fig.4 - Forward Current vs. Forward Voltage

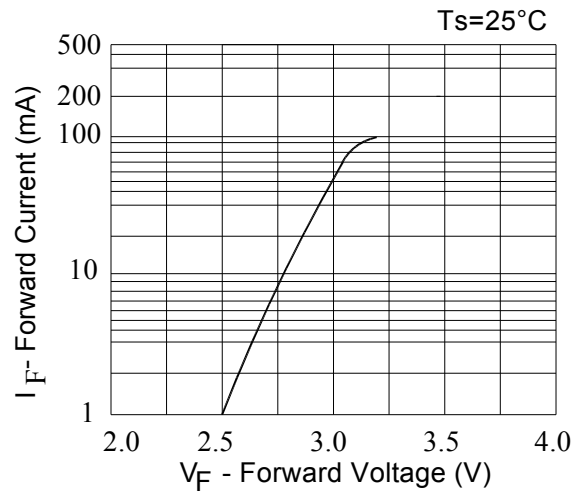


Fig.5 - Max. Driving Forward Current vs. Soldering Temperature

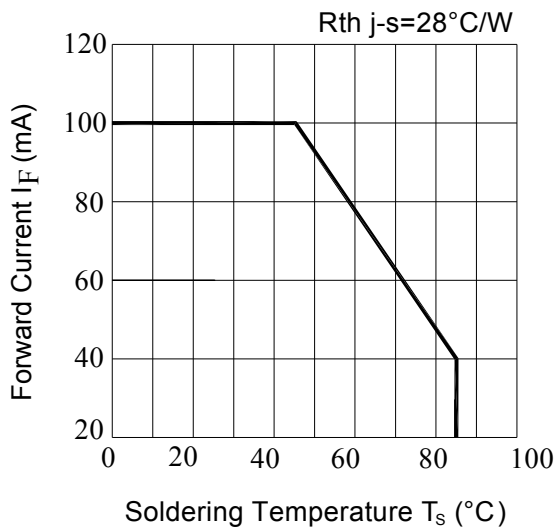
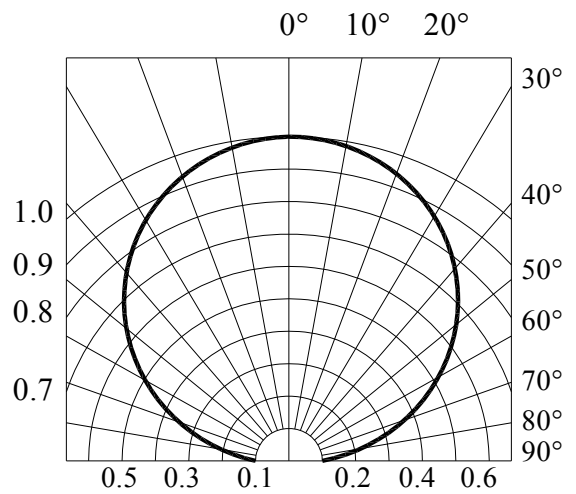
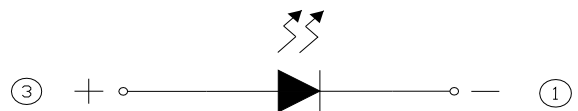
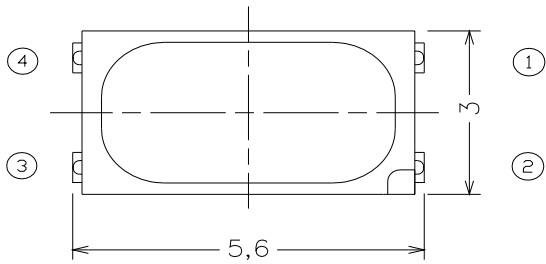


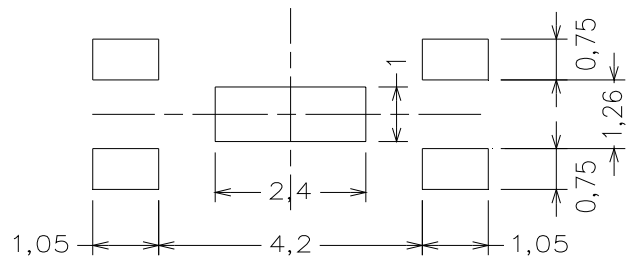
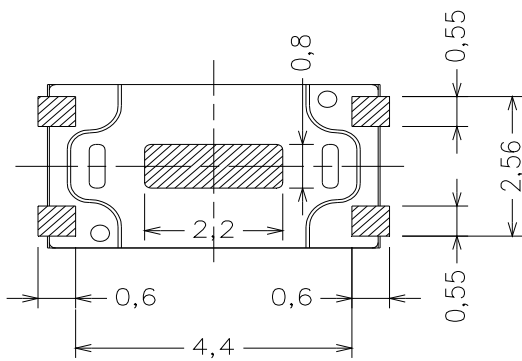
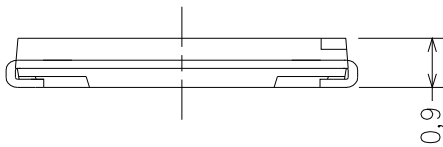
Fig.6 - Radiation Diagram



Package Dimension



Polarity



Note:  
 Tolerance unless mentioned is  $\pm 0.2\text{mm}$ ; Unit = mm

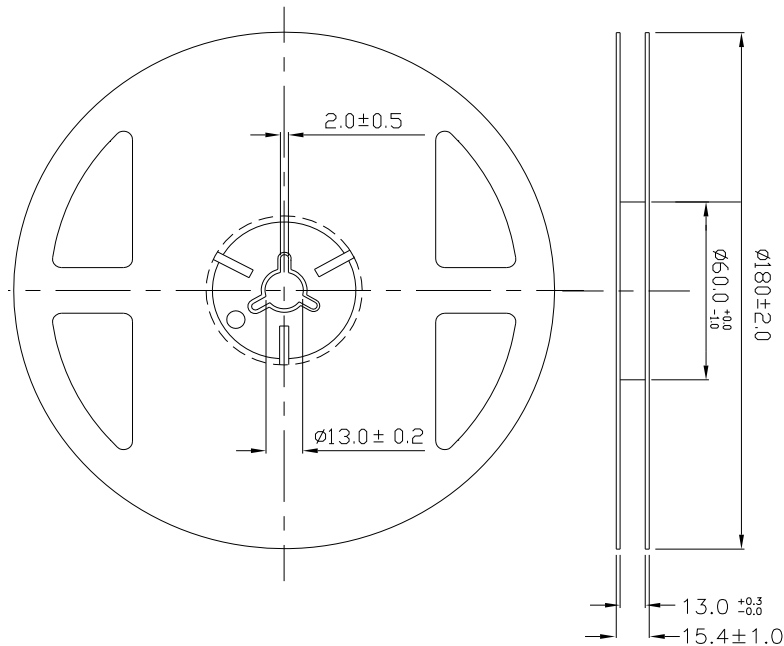
**Moisture Resistant Packing Materials**

**Label Explanation**



- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

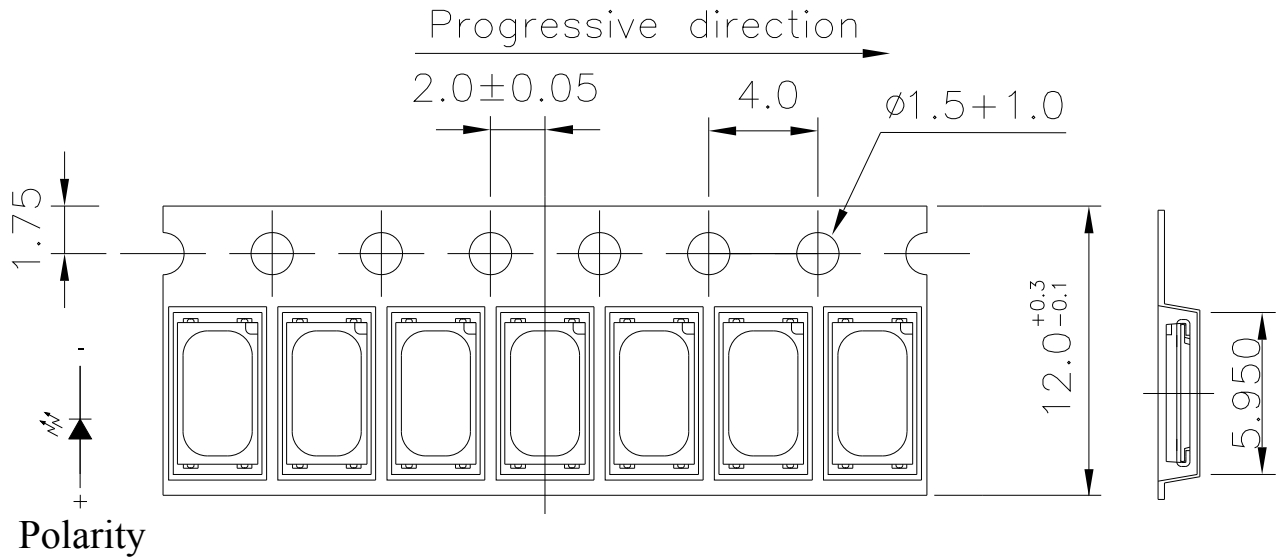
**Reel Dimensions**



Note:  
 Tolerances unless mentioned  $\pm 0.1$ mm. Unit = mm

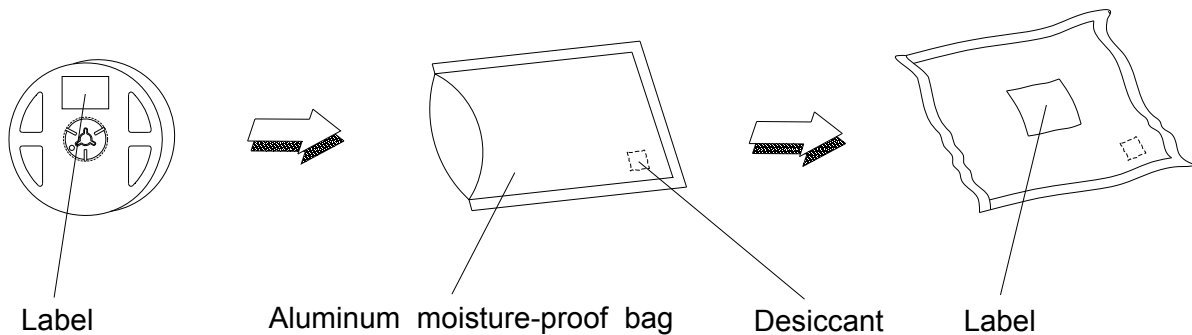


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Note:  
Tolerances unless mentioned  $\pm 0.1$ mm. Unit = mm

Moisture Resistant Packing Process



## 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/10sec.	6 Min.	22 PCS.	0/1
2	Thermal Shock	H : +100°C 5min ∩ 10 sec L : -10°C 5min	200 Cycles	22 PCS.	0/1
3	Temperature Cycle	H : +100°C 15min ∩ 5 min L : -40°C 15min	200 Cycles	22 PCS.	0/1
4	High Temperature/Humidity Storage	Ta=85°C,85%RH	1000 Hrs.	22 PCS.	0/1
5	High Temperature/Humidity Operation	Ta=85°C,85%RH, I <sub>F</sub> = 100 mA	1000 Hrs.	22 PCS.	0/1
6	Low Temperature Storage	Ta=-40°C	1000 Hrs.	22 PCS.	0/1
7	High Temperature Storage	Ta=85°C	1000 Hrs.	22 PCS.	0/1
8	Low Temperature Operation Life	Ta=-40°C, I <sub>F</sub> = 100 mA	1000 Hrs.	22 PCS.	0/1
9	High Temperature Operation/ Life#1	Ta=25°C, I <sub>F</sub> = 100 mA	1000 Hrs.	22 PCS.	0/1
10	High Temperature Operation/ Life#2	Ta=55°C, I <sub>F</sub> =100 mA	1000 Hrs.	22 PCS.	0/1
11	High Temperature Operation/ Life#3	Ta=85°C, I <sub>F</sub> = 100 mA	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.

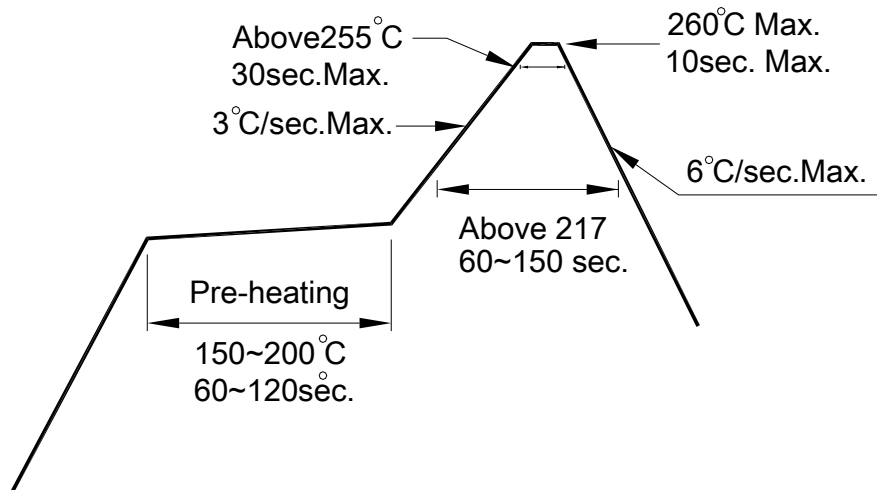
2.3 After opening the package: The LED's floor life is 72 Hrs under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

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.

#### 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.

