

客户 (Customer) : \_\_\_\_\_

承认书

Approval Sheet

谨致执事者：兹提供敝公司之有关详细规格及图面数据,敬请给予办理试认定手续。  
同时敬请送返一份附有贵公司签认之测试认定后之样品承认书。

We are pleased in sending you herewith on specification and drawings for your approval.  
Please return to us one copy "Approval sheet" with your approved signature.

型号 (Model No.) : A-SL686R6C-B01-4T (HW)

发文日期 (Issue Date) : 2020/12/17 承认日期 (Approved Date) : \_\_\_\_\_

Checking signature of Amicc

Designer	Checker	Approver
<i>Zora</i>	<i>Tommy</i>	<i>Solarliu</i>

Approval signature of customer

Designer	Checker	Approver

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## Mono-Color Type ▪ Top view 2016 package

### A-SL686R6C-B01-4T(HW)



#### ■ Description

The Amicc 686 package has high efficacy, low power consumption, wide viewing angle and a compact form factor. These features make this package to be an ideal LED for all lighting applications.

#### ■ Features

- Top view LED
- High Luminous Intensity output
- Wide viewing angle
- Pb-free
- RoHS compliant
- JEDEC MSL 3

#### ■ Applications

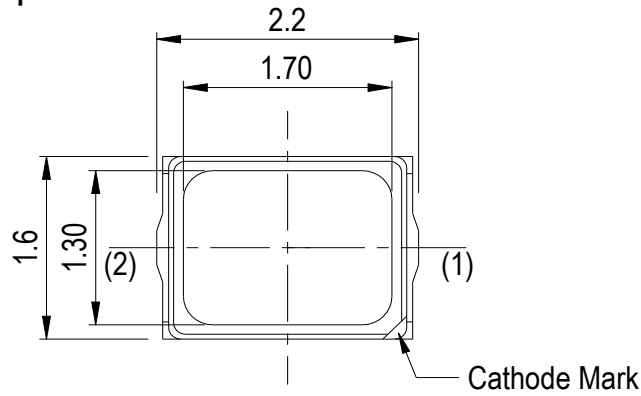
- Mobile Phone Camera Flash
- Decorative and Entertainment Lighting
- Signal and symbol luminaries for orientation marker lights
- TFT backlighting
- Indoor lighting application
- Torch light for DV application
- Exterior and interior automotive illumination

#### ■ Device Selection Guide

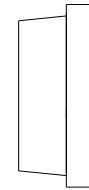
Chip Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Red	Water Clear

■ Package Dimensions

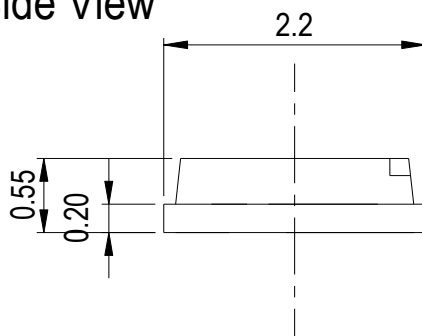
Top View



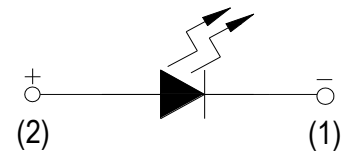
Side View



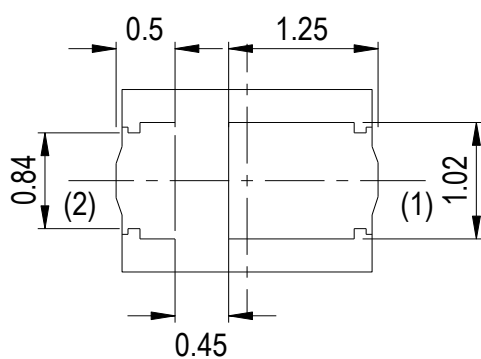
Side View



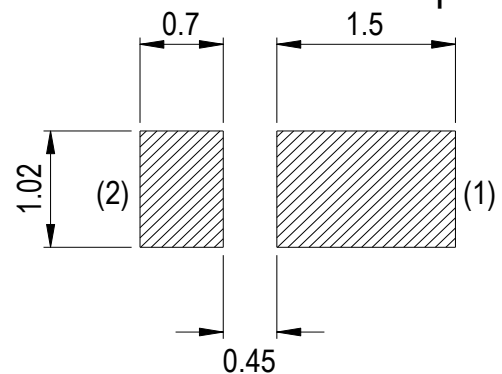
Polarity



Bottom View



Recommended Solder pad



Note:  
Tolerance without mention is  $\pm 0.1$ mm.

■ **Absolute Maximum Ratings (T<sub>Soldering</sub>=25°C)**

Parameter	Symbol	Rating	Unit
Forward Current	I <sub>F</sub>	30	mA
Peak Forward Current (Duty 1/10 @1ms)	I <sub>FP</sub>	100	mA
Power Dissipation	P <sub>d</sub>	75	mW
Reverse voltage	V <sub>R</sub>	7	V
Operating Temperature	T <sub>opr</sub>	-40 ~ +100	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C
Electrostatic Discharge(HBM)	ESD	2000	V
Junction Temperature	T <sub>j</sub>	120	°C
Soldering Temperature	T <sub>sol</sub>	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

■ **Electro-Optical Characteristics (T<sub>Soldering</sub>=25°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Φ	140	165	200	mcd	I <sub>F</sub> =10mA
Forward Voltage	V <sub>F</sub>	1.8	2.0	2.4	V	I <sub>F</sub> =10mA
Peak Wavelength	λ <sub>p</sub>	-----	635	-----	nm	I <sub>F</sub> =10mA
Dominant Wavelength	λ <sub>d</sub>	618	625	630	nm	I <sub>F</sub> =10mA
Viewing Angle	2θ <sub>1/2</sub>	-----	120	-----	deg	I <sub>F</sub> =10mA
Reverse Current	I <sub>R</sub>	-----	-----	10	μA	V <sub>R</sub> =5V

Notes:

1. Tolerance of Luminous Intensity: ±10%.
2. Tolerance of Forward Voltage : ±0.05V.

■ **Bin Range of Luminous Intensity**

Bin Code	Min.	Max.	Unit	Condition
AR1	140	175	mcd	I <sub>F</sub> =10mA
AR2	175	200		

Note:  
 Tolerance of Luminous Intensity: ±10%.

■ **Bin Range of Forward Voltage**

Bin Code	Min.	Max.	Unit	Condition
25	1.8	1.9	V	I <sub>F</sub> =10mA
26	1.9	2.0		
27	2.0	2.1		
28	2.1	2.2		
29	2.2	2.3		
30	2.3	2.4		

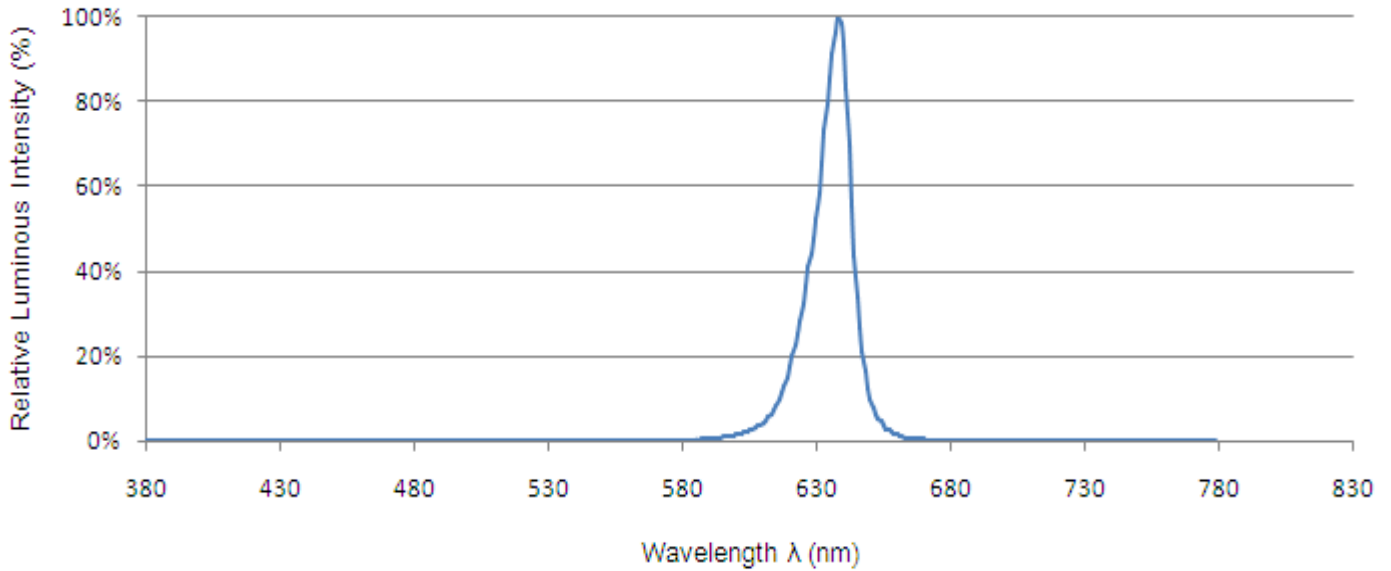
Note:  
 Tolerance of Forward Voltage: ±0.05V.

■ **Bin Range of Dominant Wavelength**

Bin Code	Min.	Max.	Unit	Condition
R3	618	621	nm	I <sub>F</sub> =10mA
R4	621	624		
R5	624	627		
R6	627	630		

Note:  
 Tolerance of Dominant Wavelength: ±1nm

■ **Spectrum Distribution**



■ **Typical Electro-Optical Characteristics Curves**

Fig.1-Forward Voltage Shift vs. T<sub>j</sub>-Junction Temperature

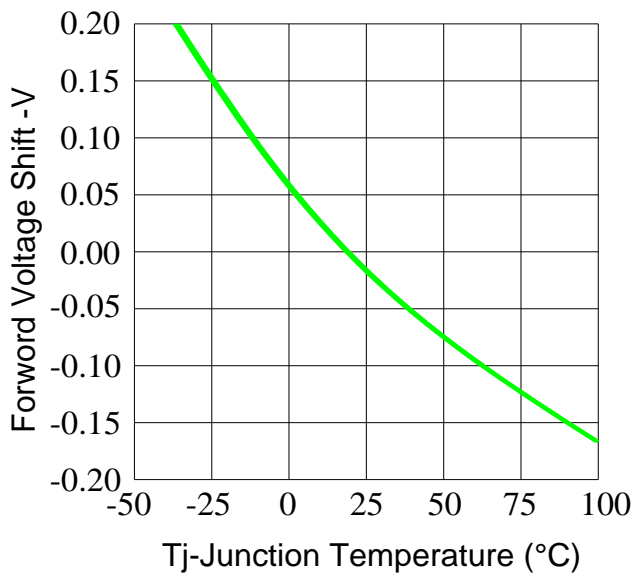
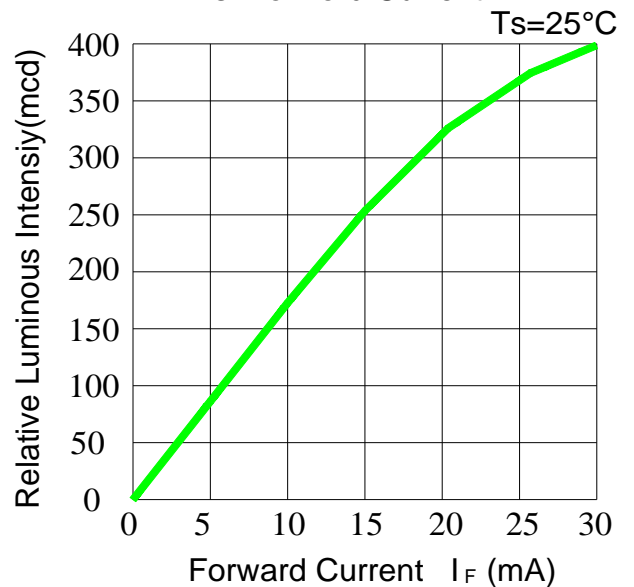


Fig.2- Luminous Intensity vs. Forward Current



■ Typical Electro-Optical Characteristics Curves

Fig.3-Relative Luminous Flux vs.  $T_j$ -Junction Temperature

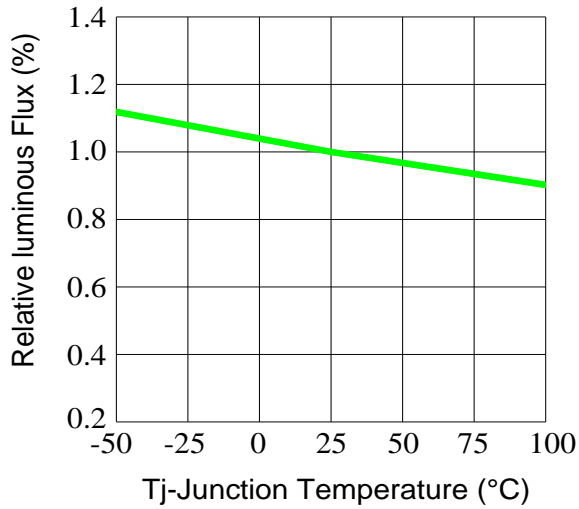


Fig.4-Forward Current vs. Forward Voltage  $T_a=25^\circ\text{C}$

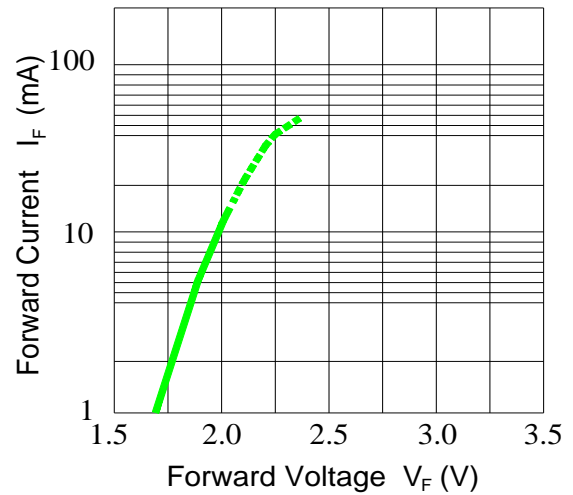


Fig.5-Max. Driving Forward Current vs. Soldering Temperature

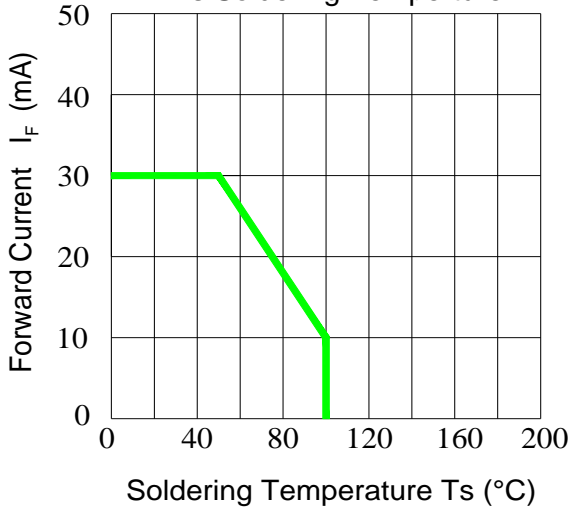
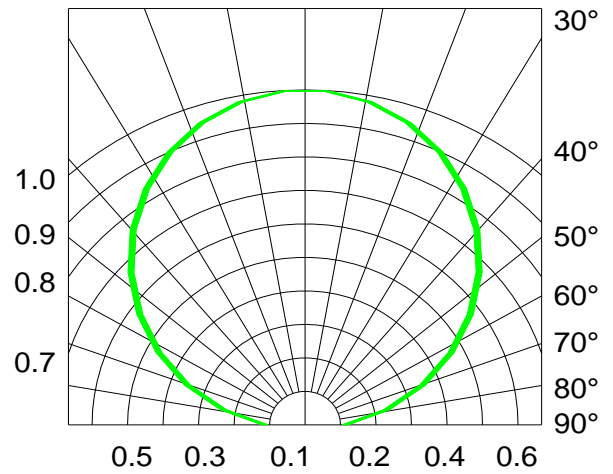
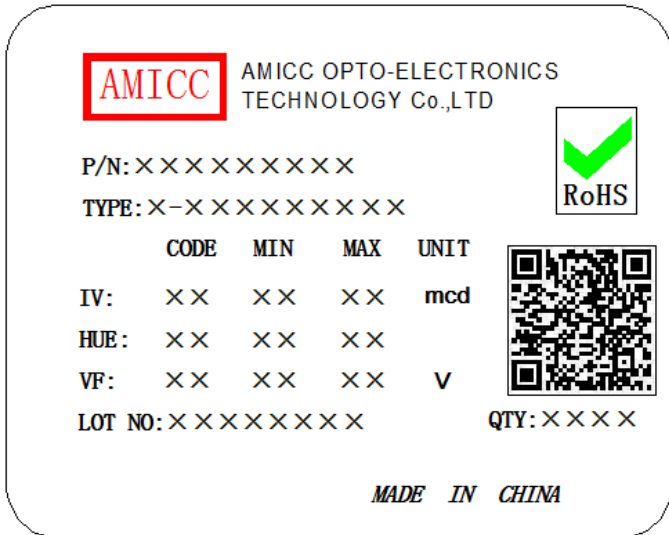


Fig.6-Radiation Diagram  $T_a=25^\circ\text{C}$



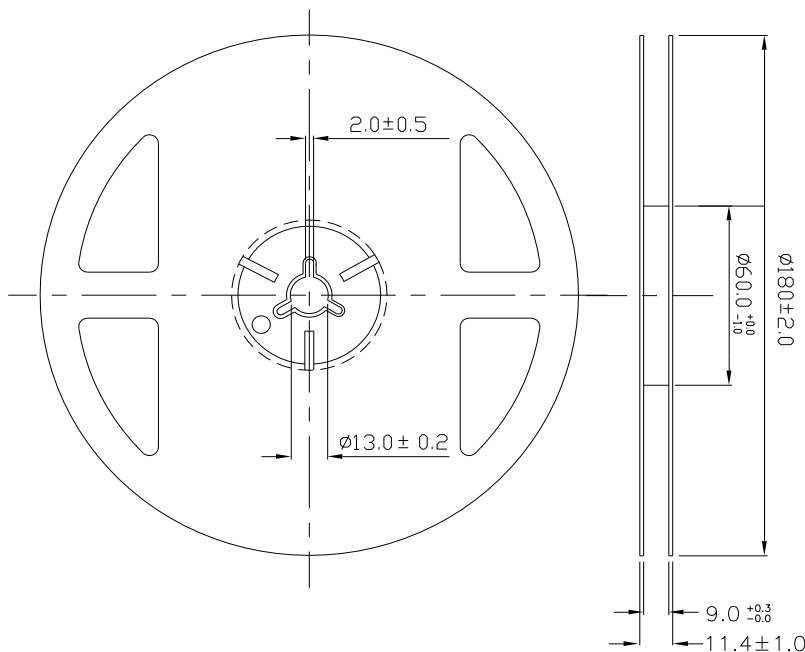
■ **Moisture Resistant Packing Materials**

1. **Label Explanation**



- CPN: Customer's Product Number
- P/N: Product Number
- TYPE: Part NO.
- IV: Luminous Intensity Rank
- HUE: Chromaticity Coordinates Rank
- VF: Forward Voltage Rank
- LOT No: Lot Number
- QTY: Packing Quantity

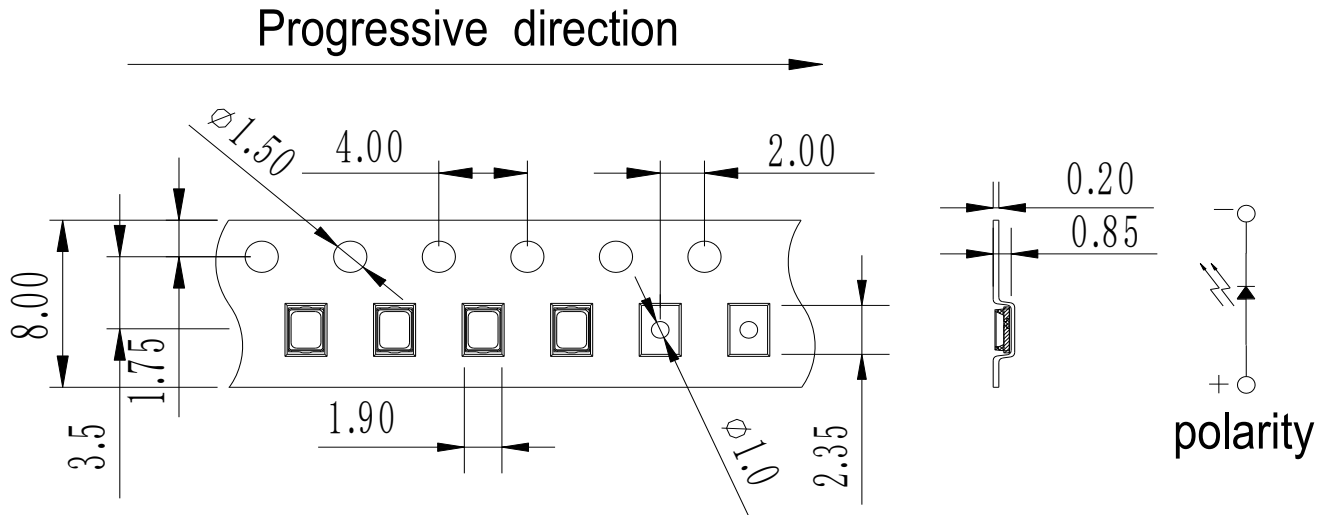
2. **Reel Dimensions**



Note:  
 Tolerance without mention is ±0.1mm.



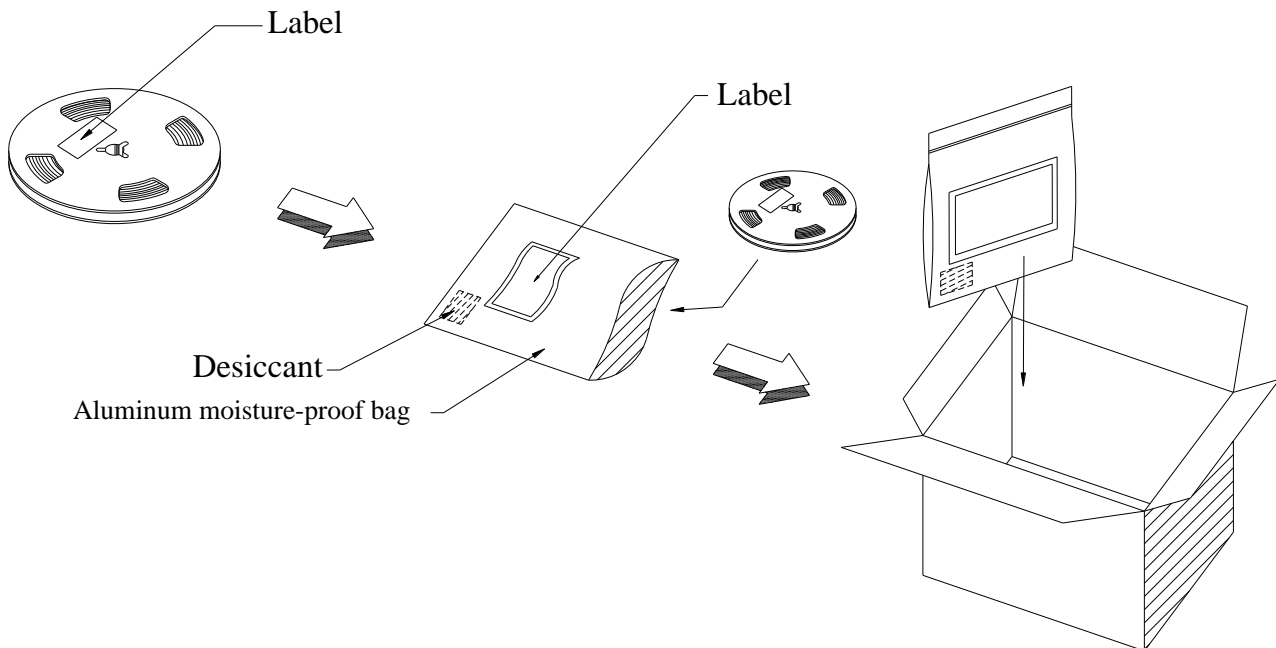
**3. Carrier Tape Dimensions: Loaded Quantity 4000 pcs Per Reel**



Notes:

1. Tolerance without mention is  $\pm 0.1$ mm.
2. Minimum packing quantity is 1000pcs per reel.

**4. Moisture Resistant Packing Process**



## ■ 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.

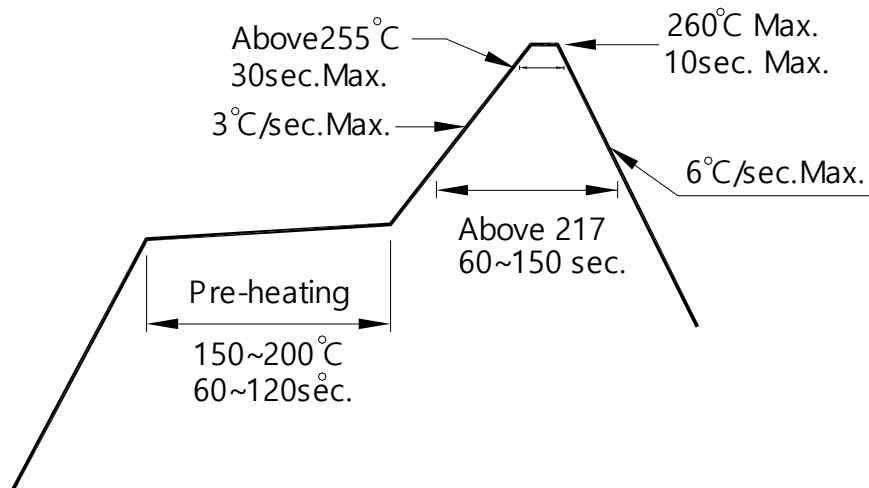
2.3 After opening the package: The LED's floor life is 168 Hrs under 30°C or less and 60% RH or less (MSL3) . If unused LEDs remain, it should be stored in moisture proof packages.

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 could endure three 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.

