

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-SA6S6091RPGCE070-CA

发文日期 (Issue Date) : 2018/01/03 承认日期 (Approved Date) : \_\_\_\_\_

Checking signature of Amicc

Designer	Checker	Approver
Allen		

Approval signature of customer

Designer	Checker	Approver

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## Lamp LED Type ■ 1.9\*3.1mm Rectangular Led Lamp

### A-SA6S6091RPGCE070-CA



#### Features

- 1.9\*3.1mm Rectangular Led Lamp
- Wide viewing angle
- Pb-free
- RoHS compliant

#### Description

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

#### Applications

- General lighting
- Decorative and Entertainment Lighting
- Indicators
- Automotive Telecommunication
- Switch lights

#### Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Red	White Diffused
InGaN/Sapphire	Green	White Diffused

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

**Red**

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>	78	mW
Reverse Voltage per chip	V <sub>r</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-25 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	°C

Note:

The products are sensitive to static electricity and must be carefully taken when handling products.

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

**Red**

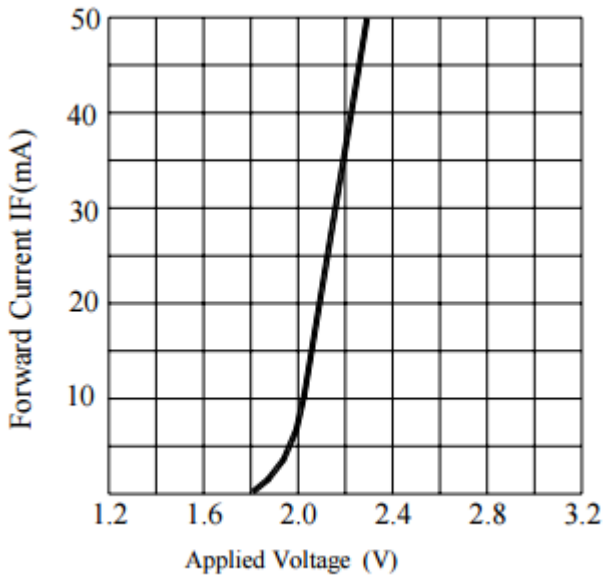
Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>		-----	1300	-----	mcd	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>		-----	632	-----	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		-----	623	-----	nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>			2.1	2.4	V	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>		-----	90	-----	deg	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>		-----	-----	100	μ A	V <sub>R</sub> =5V

Notes:

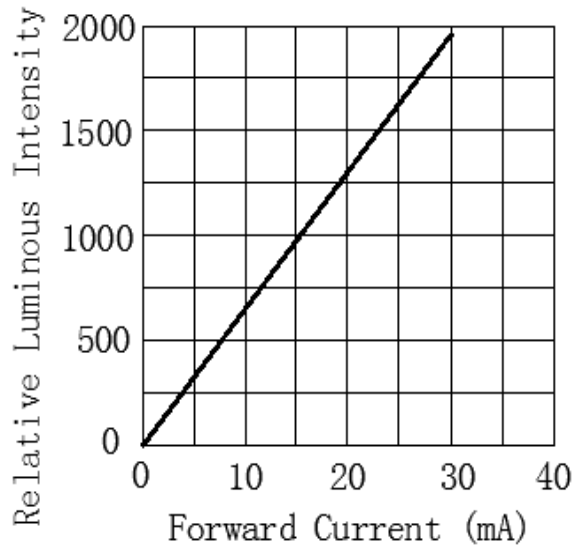
1. Tolerance of Luminous Intensity ±10%.
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage : ±0.1V.

**Typical Electro-Optical Characteristics Curve**

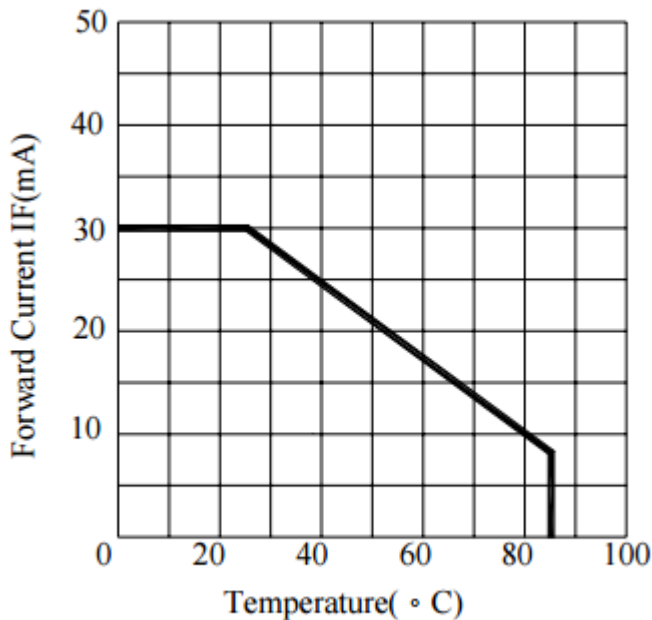
**Red**



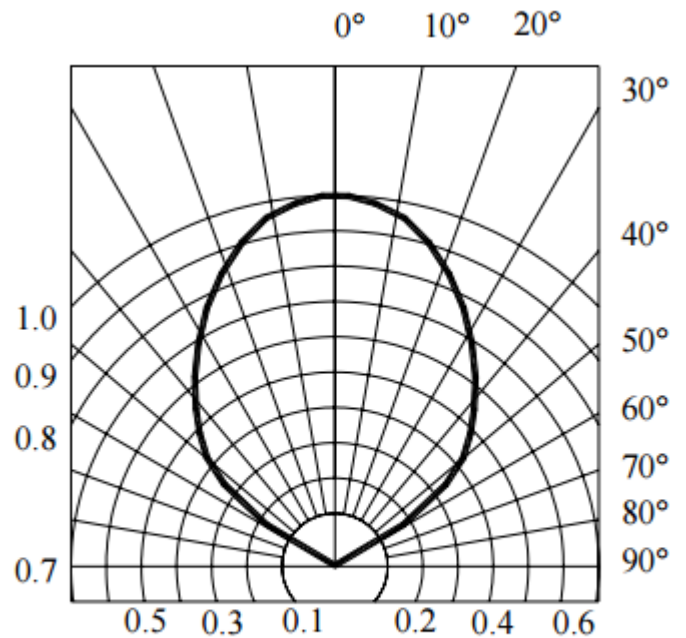
**FORWARD CURRENT VS.APPLIED VOLTAGE**



**Forward Current VS Luminous Intensity**



**FORWARD CURRENT VS. AMBIENT TEMPERATURE**



**RADIATION DIAGRAM**

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

**Green**

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>	120	mW
Reverse Voltage per chip	V <sub>r</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-25 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	°C

Note:

The products are sensitive to static electricity and must be carefully taken when handling products.

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

**Green**

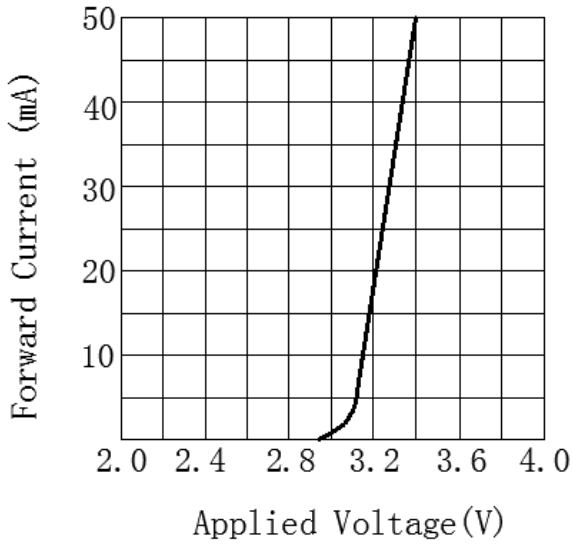
Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>		-----	3000	-----	mcd	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>		-----	530	-----	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		-----	525	-----	nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>			3.2	4.0	V	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>		-----	90	-----	deg	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>		-----	-----	100	μ A	V <sub>R</sub> =5V

Notes:

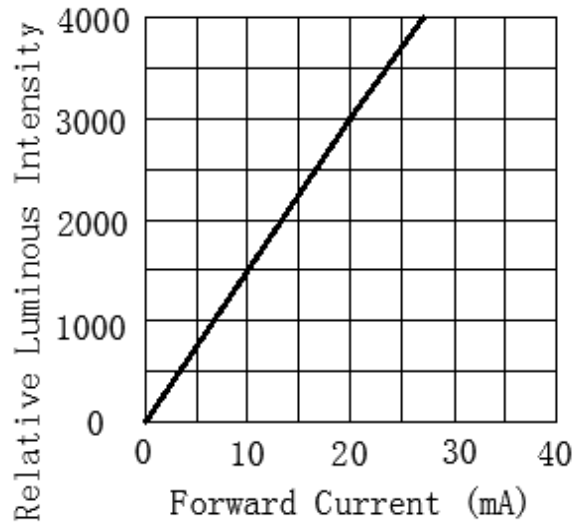
1. Tolerance of Luminous Intensity ±10%.
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage : ±0.1V.

**Typical Electro-Optical Characteristics Curve**

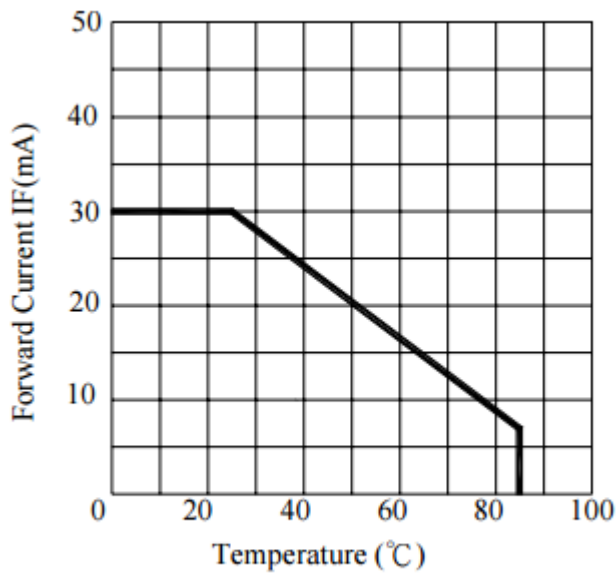
**Green**



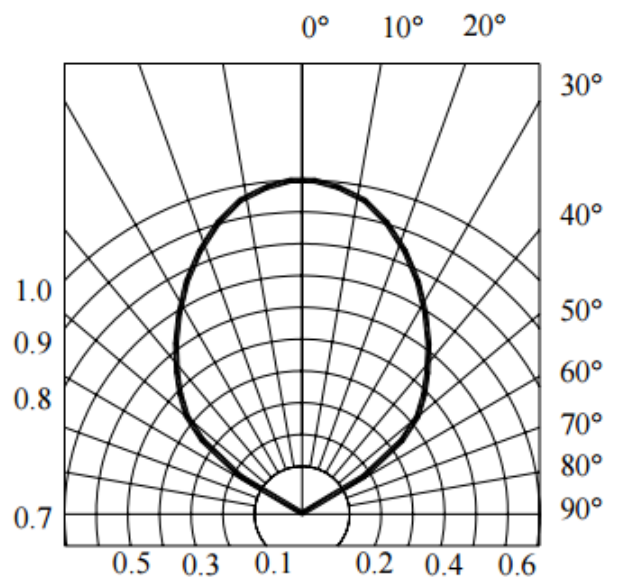
**Forward Current VS Applied Voltage**



**Forward Current VS Luminous Intensity**



**FORWARD CURRENT VS. AMBIENT TEMPERATURE**



**RADIATION DIAGRAM**

**Bin Range of Luminous Intensity**

**Red**

Bin Code	Min.	Max.	Unit	Condition
B100	1000	1200	mcd	I <sub>F</sub> =20mA
B120	1200	1400		
B140	1400	1600		

Note:  
 Tolerance of Luminous Intensity: ±10%.

**Bin Range of Dominant Wavelength**

Bin Code	Min.	Max.	Unit	Condition
R1	620	625	nm	I <sub>F</sub> =20mA
R2	625	630		
R3	630	635		

Note:  
 Tolerance of Dominant Wavelength: ±1nm.

**Bin Range of Forward Voltage**

Bin Code	Min.	Max.	Unit	Condition
A0	1.8	2.0	V	I <sub>F</sub> =20mA
A1	2.0	2.2		
A2	2.2	2.4		

Note:  
 Tolerance of Forward Voltage: ± 0.1V.

**Bin Range of Luminous Intensity**

**Green**

Bin Code	Min.	Max.	Unit	Condition
B200	2000	3000	mcd	I <sub>F</sub> =20mA
B300	3000	4000		
B400	4000	5000		

Note:  
 Tolerance of Luminous Intensity: ±10%.

**Bin Range of Dominant Wavelength**

Bin Code	Min.	Max.	Unit	Condition
G1	520	525	nm	I <sub>F</sub> =20mA
G2	525	530		
G3	530	535		

Note:  
 Tolerance of Dominant Wavelength: ±1nm.

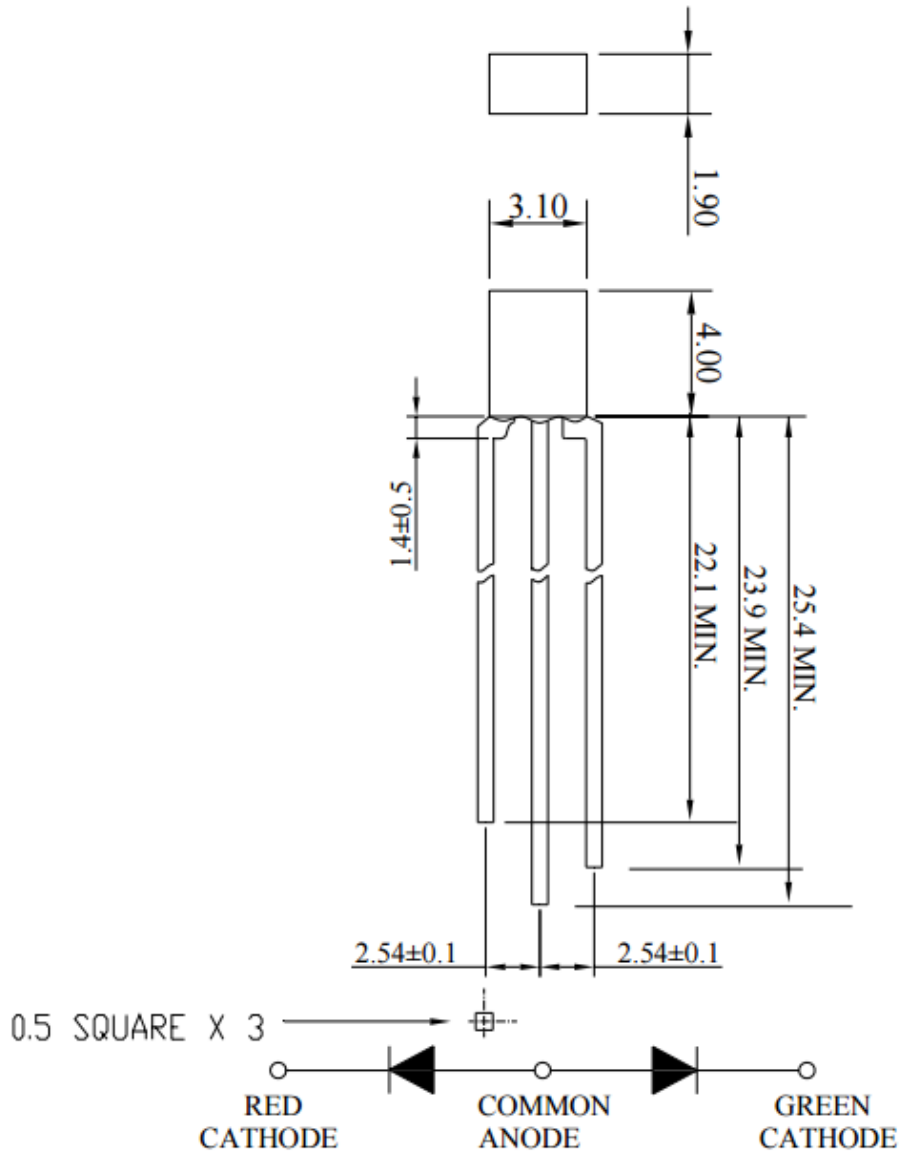
**Bin Range of Forward Voltage**

Bin Code	Min.	Max.	Unit	Condition
A0	3.0	3.2	V	I <sub>F</sub> =20mA
A1	3.2	3.4		
A2	3.4	3.6		

Note:  
 Tolerance of Forward Voltage: ± 0.1V.



**Package Dimension**

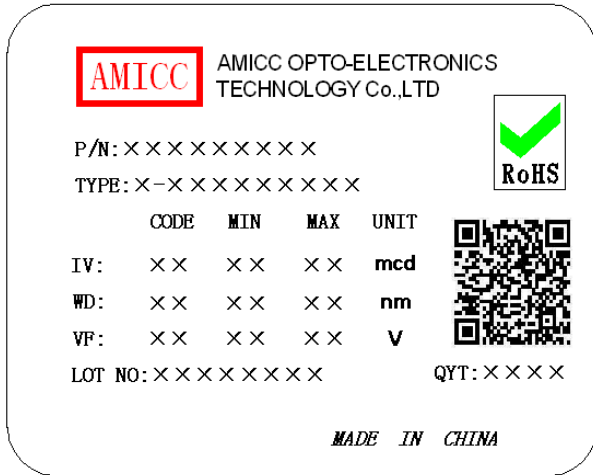


Note:

- 1.All Dimensions are in millimeters.
- 2.Tolerance is ±0.25mm unless otherwise specified.

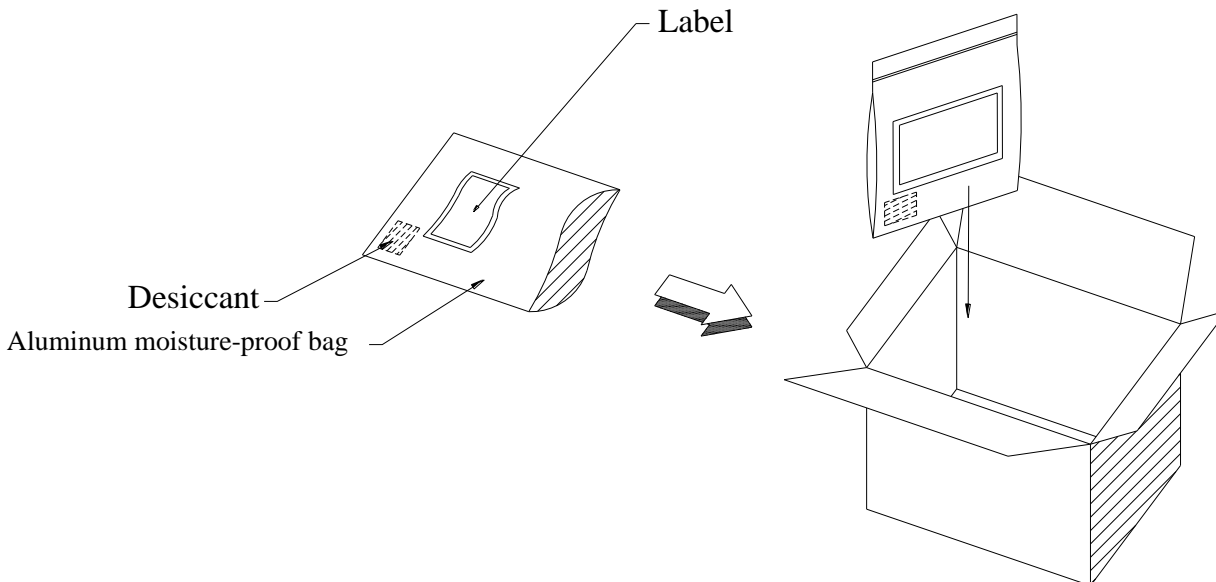
**Moisture Resistant Packing Materials**

**Label Explanation**



- CPN: Customer's Product Number
- P/N: Product Number
- TYPE :Part NO.
- IV: Luminous Intensity Rank
- WD: Dom. Wavelength Rank
- VF: Forward Voltage Rank
- LOT NO.: Lot Number
- QTY: Packing Quantity

**Moisture Resistant Packing Process: 1000 PCS/Bag**



**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	Wave Soldering	T, sol:260°C/5sec	3 min. Max.	22PCS	0/1
2	Solderability	T, sol:230°C/5sec	60 sec. Max.	22PCS	0/1
3	Thermal Shock	H : +105°C 10min ↓ L : -55°C 10min	10 Cycles	22 PCS.	0/1
4	Temperature Cycle	H : +105°C 30min ↓ 25°C 5min ↓ L : -55°C 30min ↓ 25°C 5min	10 Cycles	22 PCS.	0/1
5	High Temperature/Humidity Reverse Bias	Ta=65°C,90%RH	240 Hrs.	22 PCS.	0/1
6	DC Operation Life	Ta=25°C, I <sub>F</sub> = 20 mA	1000 Hrs.	22 PCS.	0/1

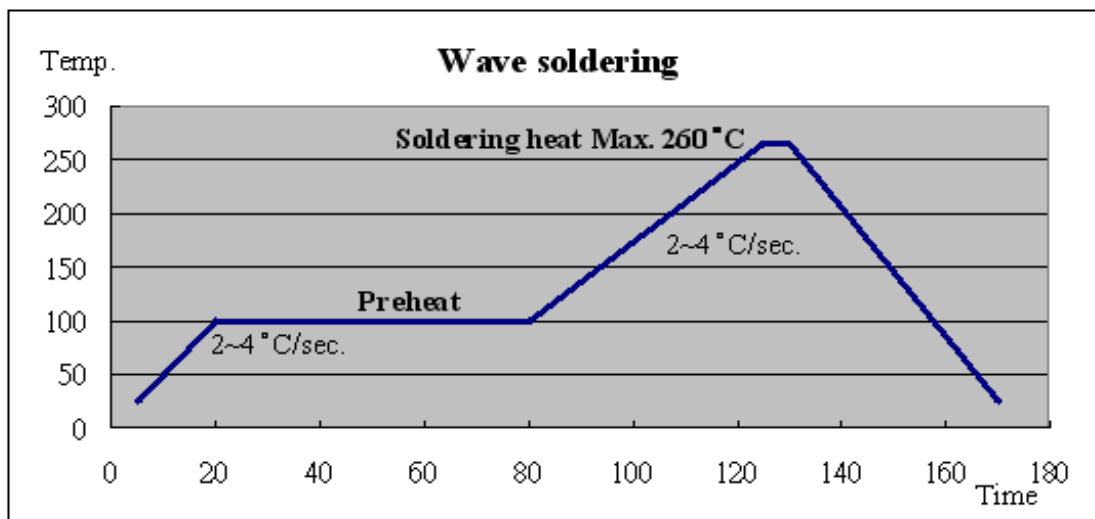
**Precautions for Use**

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 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

Method	Remark
Hand Soldering	1. Soldering time : 3 sec MAX. 2. Distance : 3 mm MIN (from solder joint to case)
DIP Soldering	1. Preheat temp : 100 °C MAX , 60 sec MAX. 2. Bath temp : 260 °C MAX. 3. Bath time : 5 sec MAX. 4. Distance : 3 mm MIN (From solder joint to case.)

**Lamp wave soldering profile :**



4. Cleaning  
 Do not use unspecified chemical liquid to clean LED. They could harm it if cleaning is necessary, wipe the pin out with alcohol, Freon TE or Chlorosen at normal temperature for less than 1 minute or wipe the surface with alcohol.

#### 5. Methods Antistatic Static Electricity

Static electricity is the enemy of lamps emitting blue and green. Workers must put on working rings, gloves, clothes that protect static electricity while working. Wires of the rings keep well together with the floor and there must be wires to connect the irons and the floor.

#### 6. Over-current-proof

6-1. Be not over-current.

6-2. In order to cooperate LEDs under stable conditions, put protective resistor in series. Resistor values can be determined by supplying voltage or current for the LEDs. Recommended current is in the range of forward current 5mA-20mA.

6-3. Circuit must be designed so that overvoltage is not applied to the LED during on/off switching. Transient or pulse current will damage junction of LED die.

#### 7. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 300°C for 3 seconds within once in less than the soldering iron capacity 30W. 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.

#### 8. 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.