

1.50mm Height Reverse Package Top View
Hi-Eff Red & Yellow Green Chip LED
Technical Data Sheet

Part No.: LL-R3427IGC



Features:

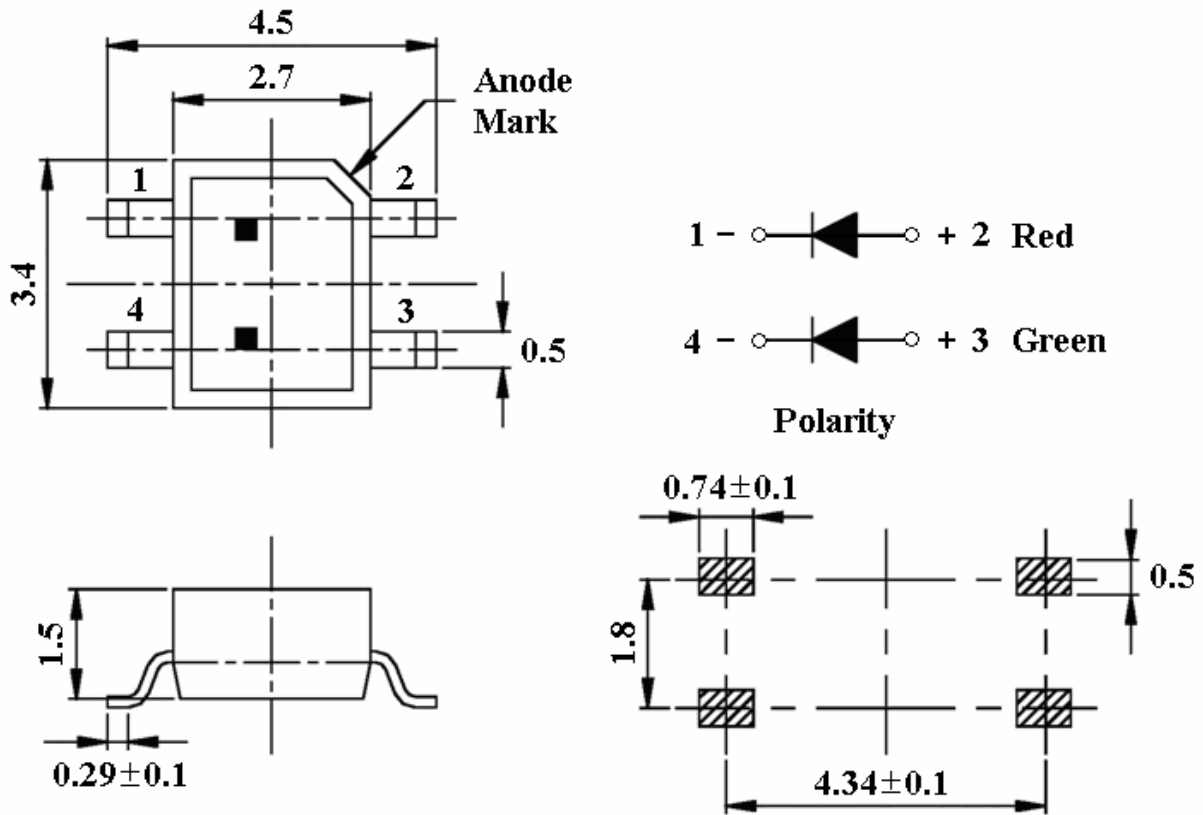
- ◇ Package in 12mm tape on 7" diameter reels.
- ◇ P-LCC-4 package.
- ◇ White package.
- ◇ Optical indicator.
- ◇ Colorless clear window.
- ◇ Colorless with automatic placement equipment.
- ◇ Wide viewing angle.
- ◇ Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- ◇ Computable with automatic placement equipment.
- ◇ EIA std. Package.
- ◇ IC compatible.
- ◇ The product itself will remain within RoHS compliant version.

Descriptions:

- ◇ The R3427 series is available in soft orange, green, blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the SMT TOP LED ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.
- ◇ The R3427 is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- ◇ Besides, lightweight makes them ideal for miniature applications, etc.

Applications:

- ◇ Automotive: Backlight in dashboards and switches.
- ◇ Telecommunication: Indicator and backlight in telephone and fax.
- ◇ Indicator and backlight for audio and video equipment.
- ◇ Indicator and backlight in office and family equipment.
- ◇ Flat backlight for LCD's, switches and symbols.
- ◇ Light pipe application.
- ◇ General use.

Package Dimension:


Part No.	Chip Material	Lens Color	Source Color
LL-R3427IGC	GaAsP/GaP	Water Clear	Hi-Eff Red
	GaP		Yellow Green

Notes:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.10 mm (.004") unless otherwise specified.
3. Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25°C

Parameters	Symbol	Max		Unit
Power Dissipation	PD	Hi-Eff Red	80	mW
		Yellow Green	80	
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	IFP	Hi-Eff Red	60	mA
		Yellow Green	60	
Continuous Forward Current	IF	Hi-Eff Red	30	mA
		Yellow Green	30	
Reverse Voltage	VR	Hi-Eff Red	5	V
		Yellow Green	5	
Operating Temperature Range	Topr	-40°C to +80°C		
Storage Temperature Range	Tstg	-40°C to +85°C		
Soldering Temperature	Tsld	260°C for 5 Seconds		

Electrical Optical Characteristics at Ta=25°C

Parameters	Symbol	Emitting Color	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	IV	Hi-Eff Red	10	20	---	mcd	IF=20mA (Note 1)
		Yellow Green	10	21	---		
Viewing Angle	2 $\theta_{1/2}$	Hi-Eff Red	---	130	---	Deg	IF=20mA (Note 2)
		Yellow Green	---	130	---		
Peak Emission Wavelength	λ_p	Hi-Eff Red	---	620	---	nm	IF=20mA
		Yellow Green	---	568	---		
Dominant Wavelength	λ_d	Hi-Eff Red	---	630	---	nm	IF=20mA (Note 3)
		Yellow Green	---	570	---		
Spectral Line Half-Width	$\Delta\lambda$	Hi-Eff Red	---	20	---	nm	IF=20mA
		Yellow Green	---	29	---		
Forward Voltage	VF	Hi-Eff Red	1.60	2.00	2.60	V	IF=20mA
		Yellow Green	1.60	2.10	2.60		
Reverse Current	IR	Hi-Eff Red	---	---	10	μ A	V _R =5V
		Yellow Green					

Notes:

- Luminous Intensity Measurement allowance is $\pm 10\%$.
- $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- The dominant wavelength (λ_d) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Reliability Test Items And Conditions:

The reliability of products shall be satisfied with items listed below:

Confidence level: 90%.

LTPD: 10%.

1) Test Items and Results:

No.	Test Item	Test Hours/Cycle S	Test Conditions	Sample Size	Ac/Re
1	Resistance to Soldering Heat	6 Min	Tsld=260±5°C, Min. 5sec	25pcs	0/1
2	Thermal Shock	300 Cycles	H: +100°C 5min f 10 sec L: -10°C 5min	25pcs	0/1
3	Temperature Cycle	300 Cycles	H: +100°C 15min f 5min L: -40°C 15min	25pcs	0/1
4	High Temperature Storage	1000Hrs.	Temp: 100°C	25pcs	0/1
5	DC Operating Life	1000Hrs.	IF=20mA	25pcs	0/1
6	Low Temperature Storage	1000Hrs.	Temp: -40°C	25pcs	0/1
7	High Temperature/ High Humidity	1000Hrs.	85°C/85%RH	25pcs	0/1

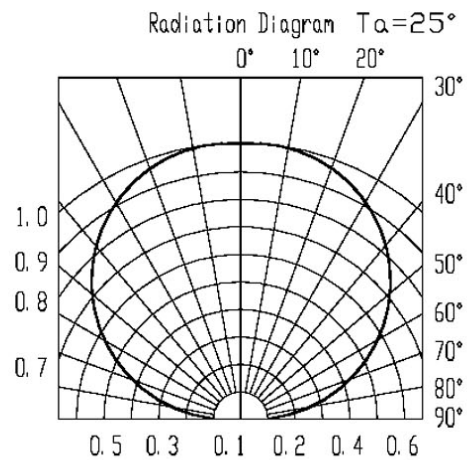
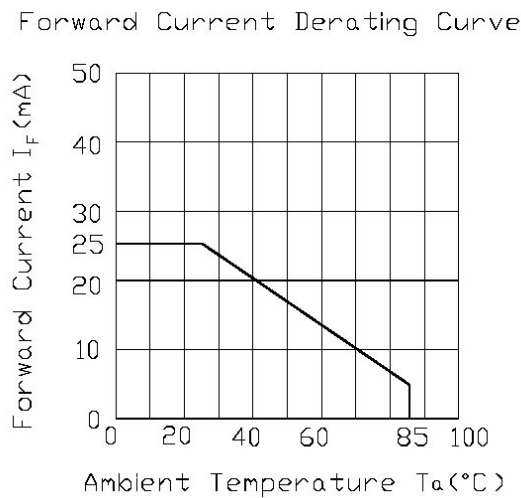
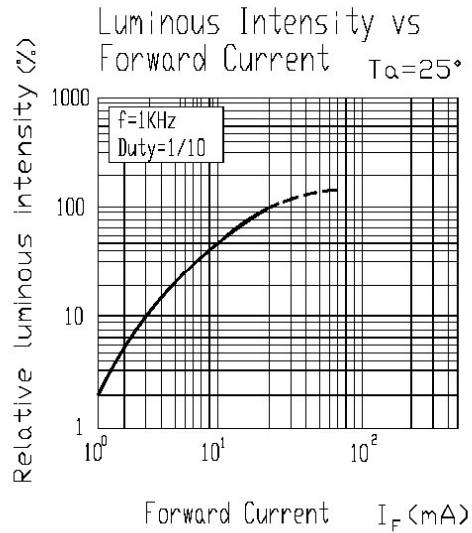
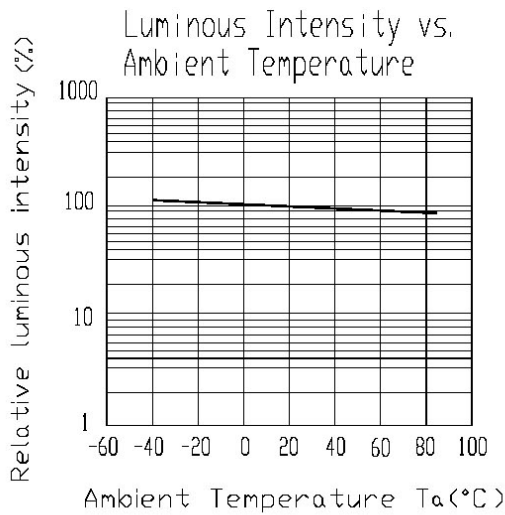
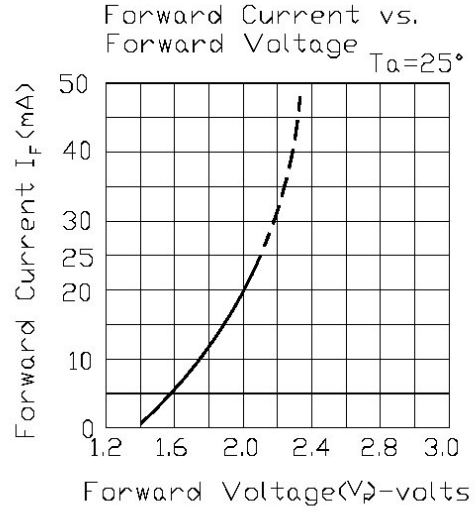
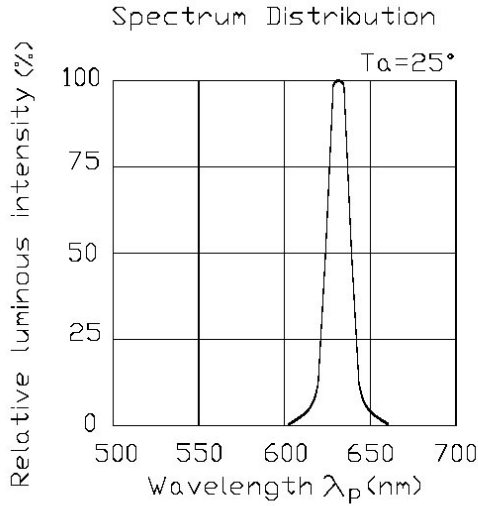
2) Criteria For Judging The Damage:

Item	Symbol	Test Conditions	Criteria for Judgment	
			Min	Max
Forward Voltage	VF	IF=20mA	---	F.V.*)×1.1
Reverse Current	IR	VR=5V	---	F.V.*)×2.0
Luminous Intensity	IV	IF=20mA	F.V.*)×0.7	---

*) F.V.: First Value.

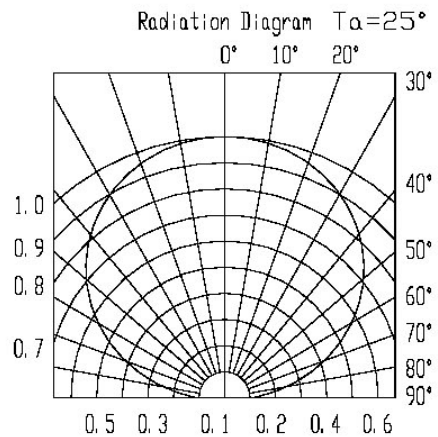
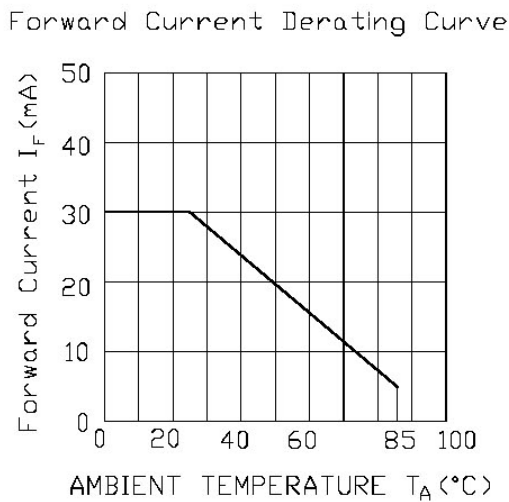
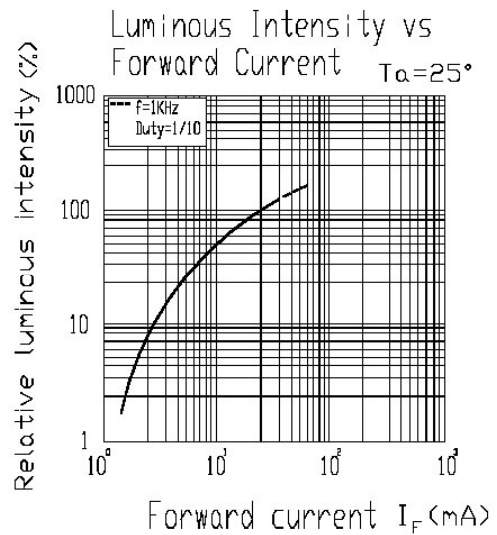
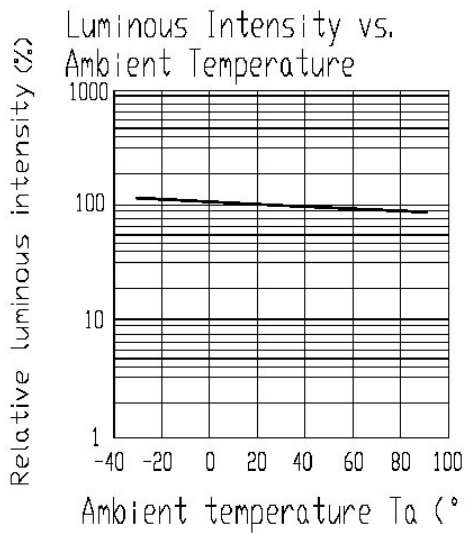
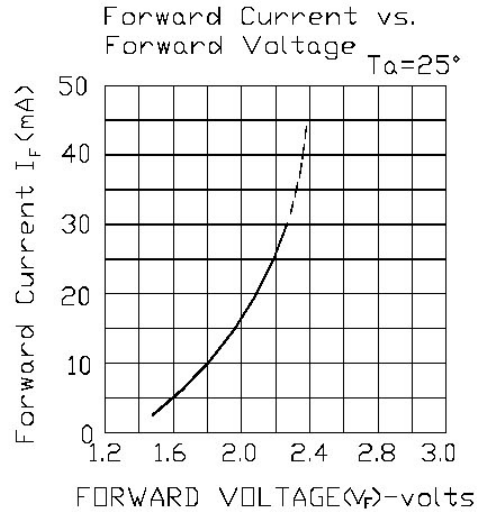
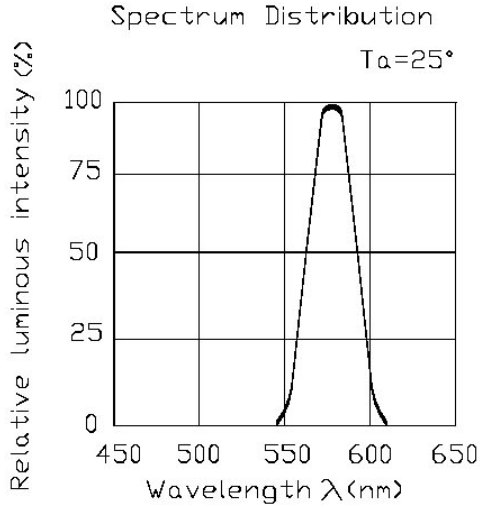
Typical Electrical / Optical Characteristics Curves
(25°C Ambient Temperature Unless Otherwise Noted)

Hi-Eff Red:

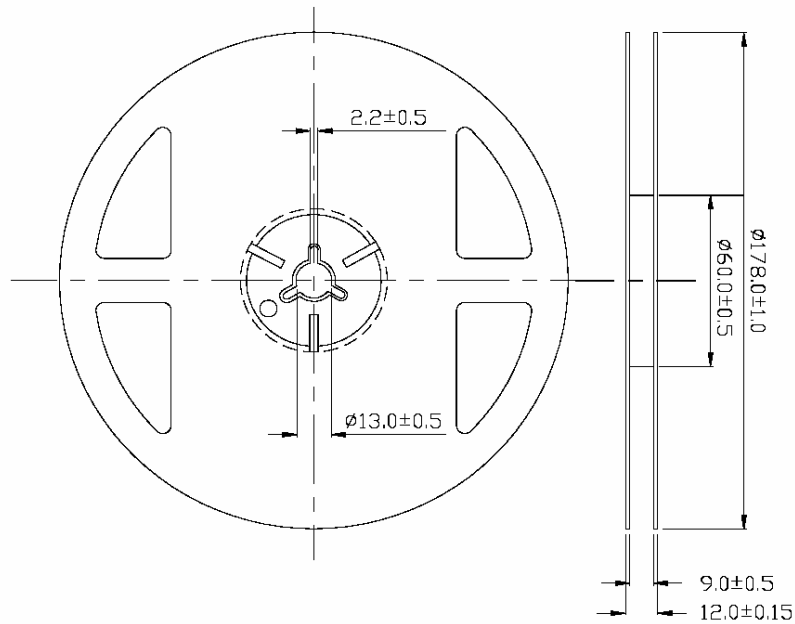


Typical Electrical / Optical Characteristics Curves
(25°C Ambient Temperature Unless Otherwise Noted)

Yellow green:

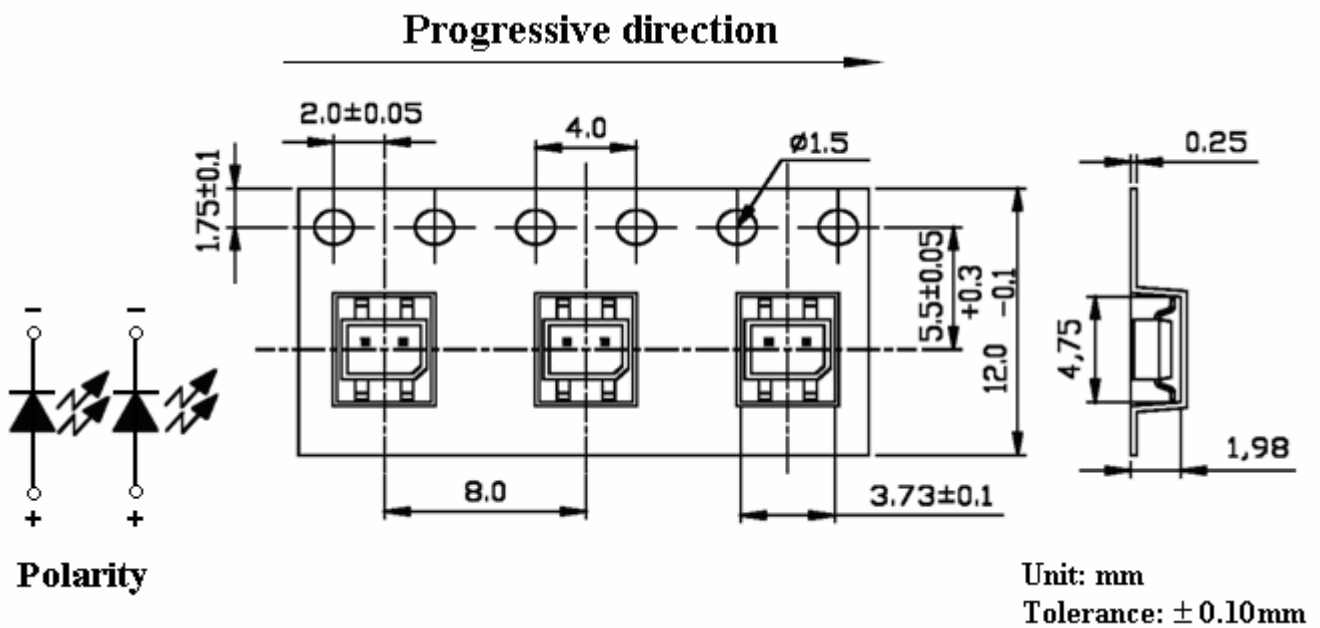


Reel Dimensions:



Carrier Tape Dimensions:

Loaded quantity 1000 PCS Per reel



Please read the following notes before using the datasheets:

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 The LEDs should be used within a year.

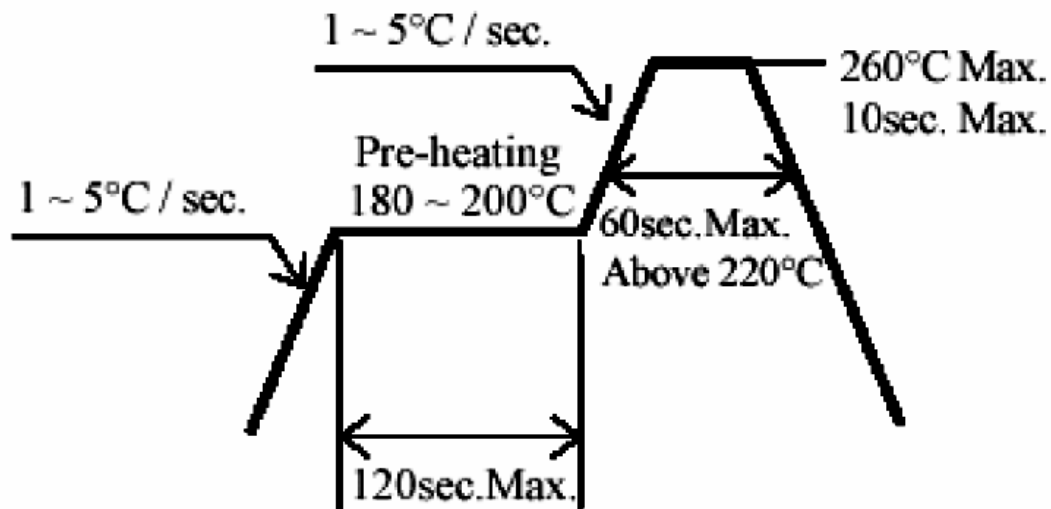
2.4 After opening the package, the LEDs should be kept at 30°C or less and 70%RH or less.

2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

2.6 If the moisture adsorbent material (silica gel) has fabled 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 260°C for 5 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.

