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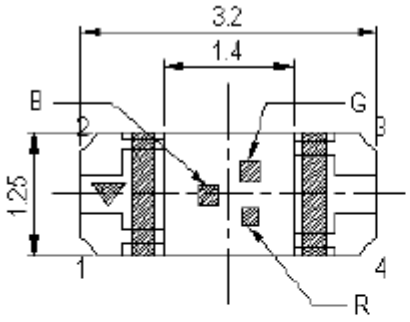
DATA SHEET

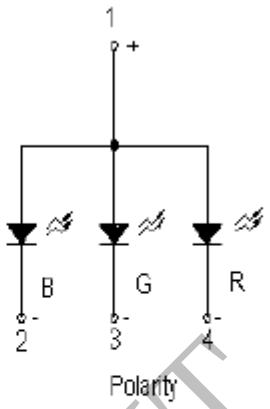
PART NO. : L-C15F1RGBCT-HD

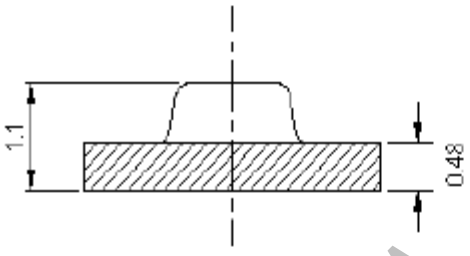
REV : A / 0

CUSTOMER'S APPROVAL : _____ DCC : _____

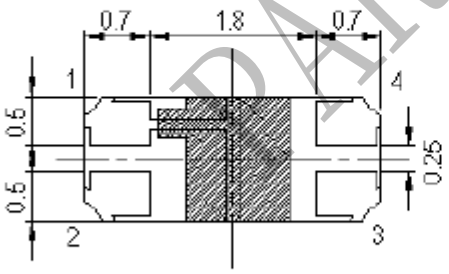
PACKAGE DIMENSIONS

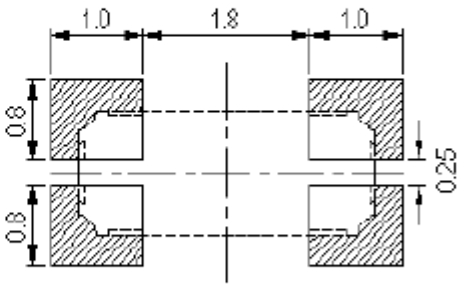






Recommended Solder Pad





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

EATURES

* 3.2*1.25*1.1 mm SMD LED
* Top view LED
* Compatible with infrared and vapor phase reflow solder process
* Wide viewing angle

CHIP MATERIALS

* Dice Material : InGaN / AlInGaP/ InGaN
* Light Color : Blue & Red&Green
* Lens Color :Water Clear

ABSOLUTE MAXIMUM RATING : (Ta = 25°C)

SYMBOL	PARAMETER	RATING			UNIT
PD	Power Dissipation	R6	GH	B1	mW
		95	95	95	
If	Forward Current	25			mA
Ifp	Peak Forward Current (1/10 duty cycle 0.1ms)	60	60	60	mA
ESD	Electrostatic Discharge Threshold(HBM)	2000	150	150	V
Topr	Operating Temperature Range	-40°C ~85°C			℃
Tstg	Storage Temperature Range	-40°C ~100°C			℃
Tsol	Soldering Temperature	Reflow Soldering 260℃ For 10 SEC Hand Soldering 350℃ For 3 SEC			

ELECTRO-OPTICAL CHARACTERISTICS : (Ta = 25°C)

SYMBOL	PARAMETER	TEST CONDITION		VALUE			UNIT
				MIN.	TYP.	MAX.	
VF	Forward Voltage	IF = 20mA	R6	1.7	2.0	2.4	V
			GH	2.8	3.1	3.6	
			B1	2.8	3.1	3.6	
IR	Reverse Current	VR = 5V				10	μA
λp	Peak Emission Wavelength	IF = 20mA	R6		632		nm
			GH		518		
			B1		624		
λD	Dominant Wavelength	IF = 20mA	R6		624		nm
			GH	515		530	
			B1	460		470	
2θ1/2	Half Intensity Angle	IF = 20mA			120		deg
Iv	Luminous Intensity	IF = 20mA	R6	112	180	285	mcd
			GH	360	530	715	
			B1	112	180		

Typical Electro-Optical Characteristics Curves(R6)

(25℃ Ambient Temperature Unless Otherwise Noted)

Fig.3-Relative Luminous Intensity vs.Juntion Temperature

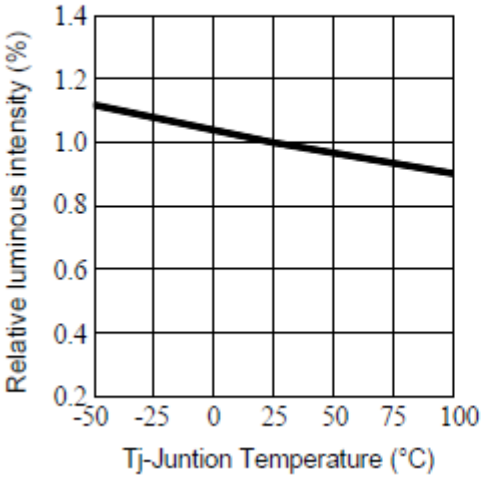


Fig.4-Forward Current v.s Forward Voltage Ta=25°C

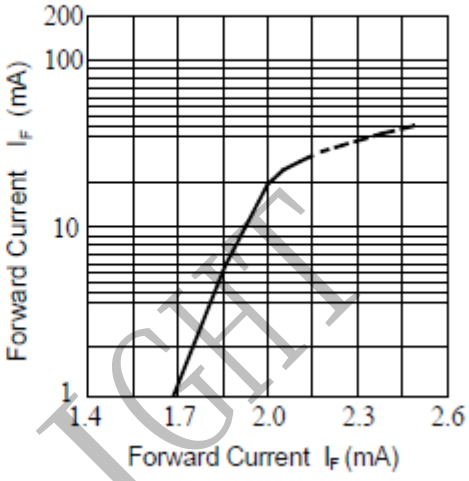


Fig.5-Max.Driving Forward Current vs.Soldering Temperture

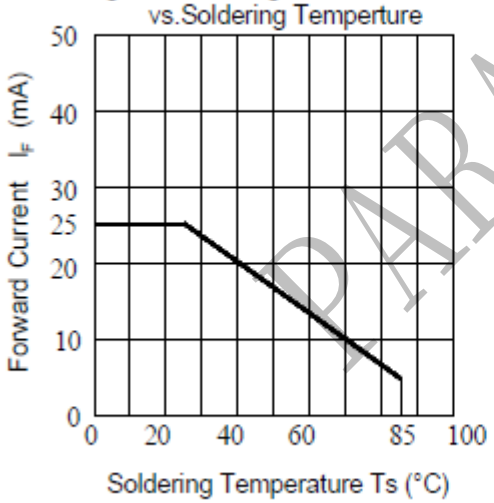
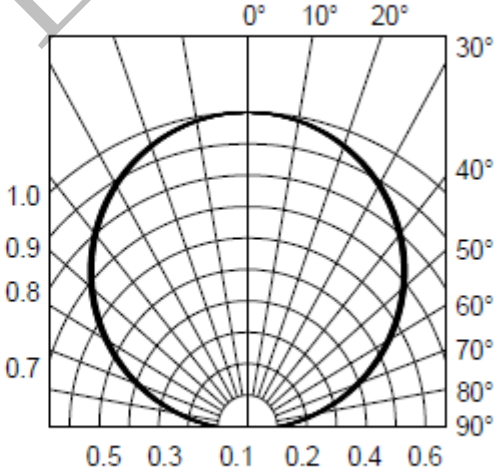


Fig.6-Radiation Diagram Ta=25°C



Typical Electro-Optical Characteristics Curves(GH/B1)

(25℃ Ambient Temperature Unless Otherwise Noted)

Fig.3-Relative Luminous Intensity vs.Juntion Temperature

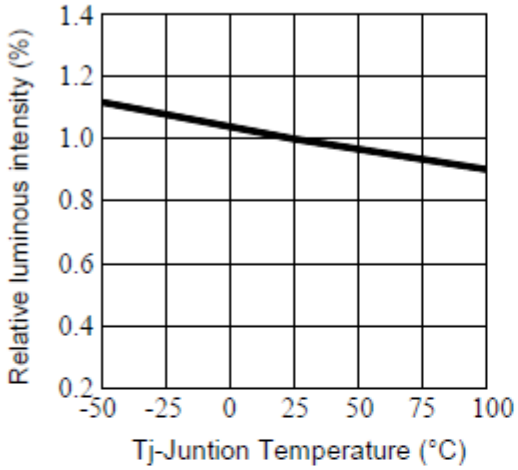


Fig.4-Forward Current vs. Forward Voltage Ta=25°C

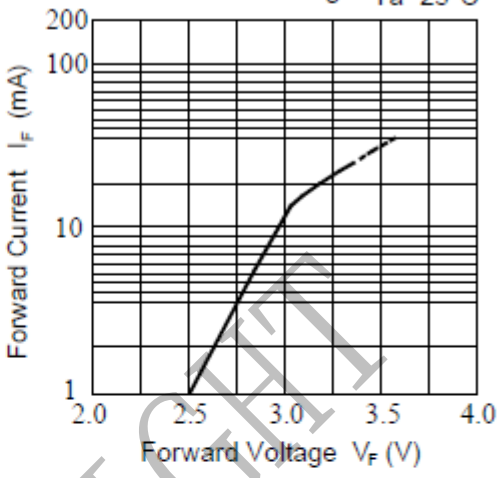


Fig.5-Max.Driving Forward Current vs.Soldering Temperture

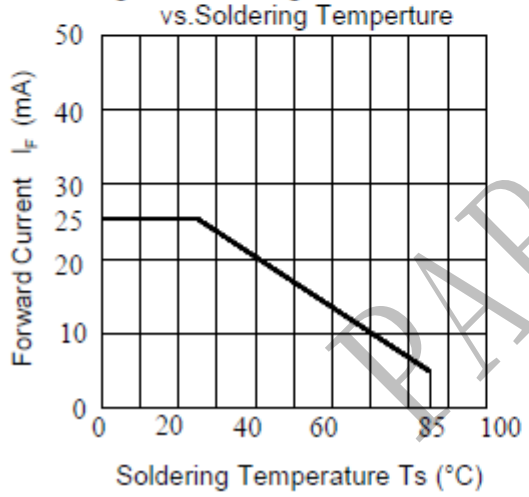
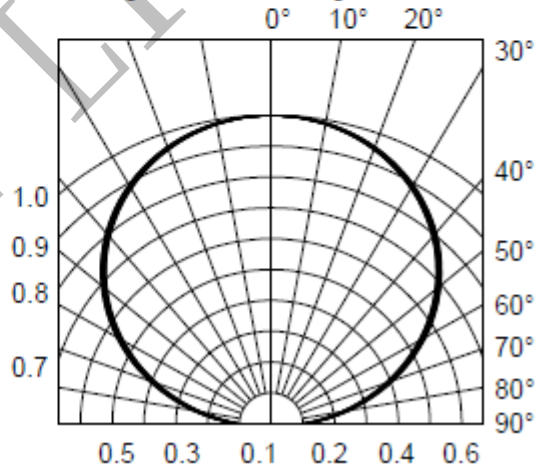


Fig.6-Radiation Diagram Ta=25°C



Bin Code Description

R6: Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
R	112	180	mcd	I_F=20mA
S	180	285		

GH: Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
AT2	360	450	mcd	I_F=20mA
AU1	450	565		
AU2	565	715		

B1: Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
R	112	180	mcd	I_F=20mA
S	180	285		

Note:
Tolerance of Luminous Intensity: ±10%.

GH:Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
A4	515	520	nm	I_F=20mA
A5	520	525		
A6	525	530		

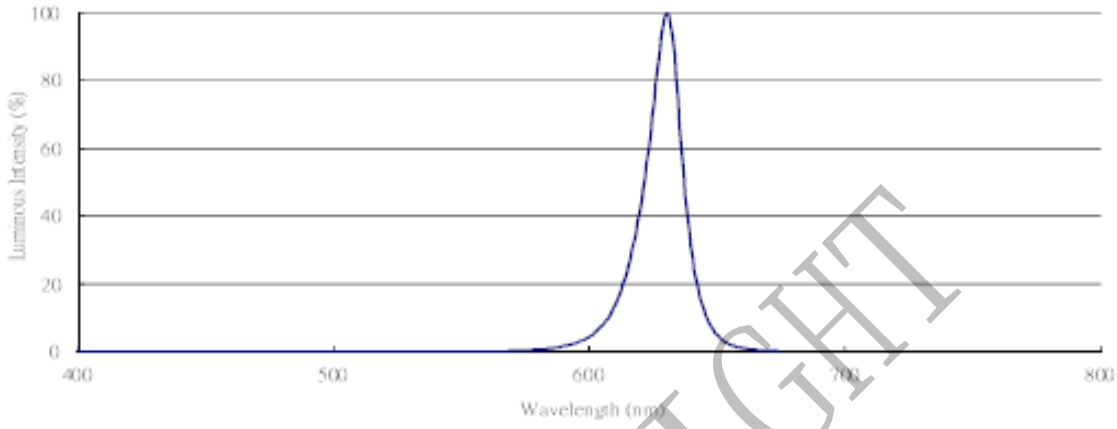
B1:Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
A5	460	465	nm	I_F=20mA
A6	465	470		

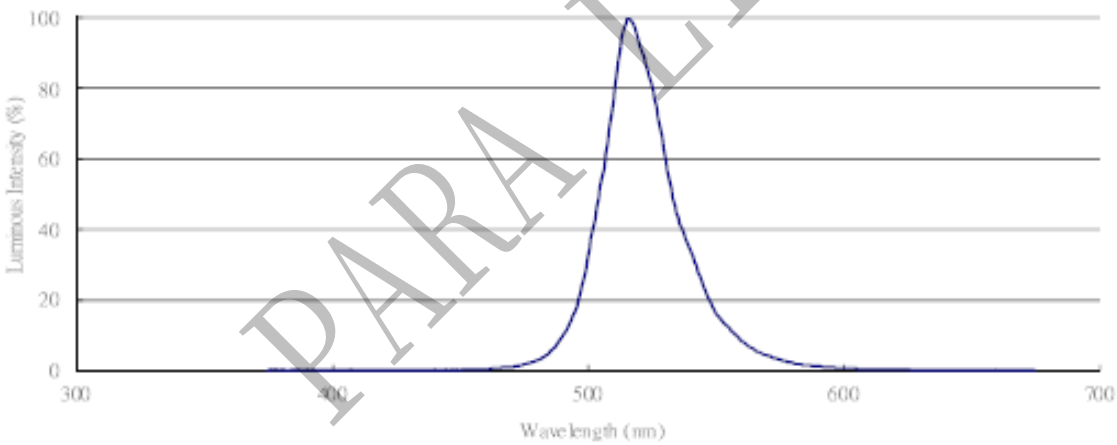
Note:
Tolerance of Dominant Wavelength: ±1nm

Spectrum Distribution

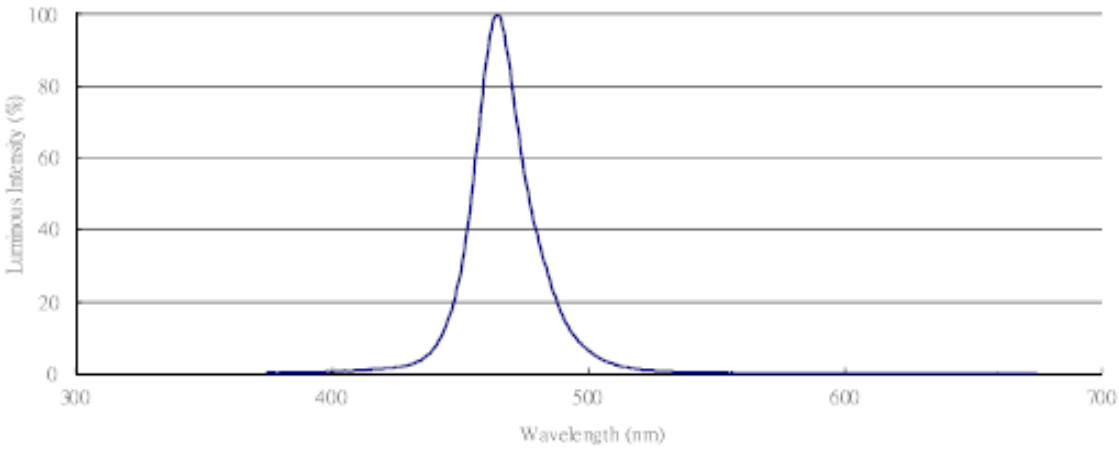
R6: Spectrum Distribution



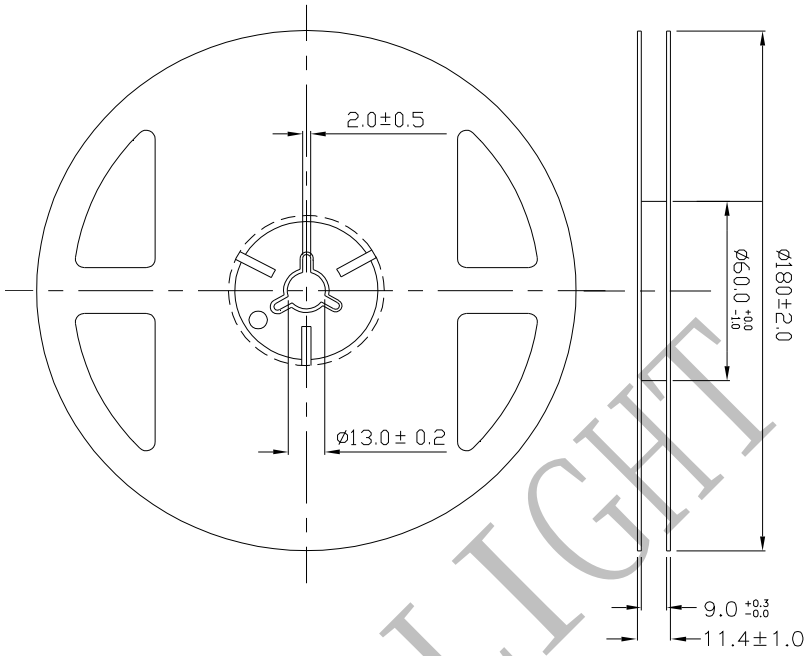
GH: Spectrum Distribution



B1: Spectrum Distribution

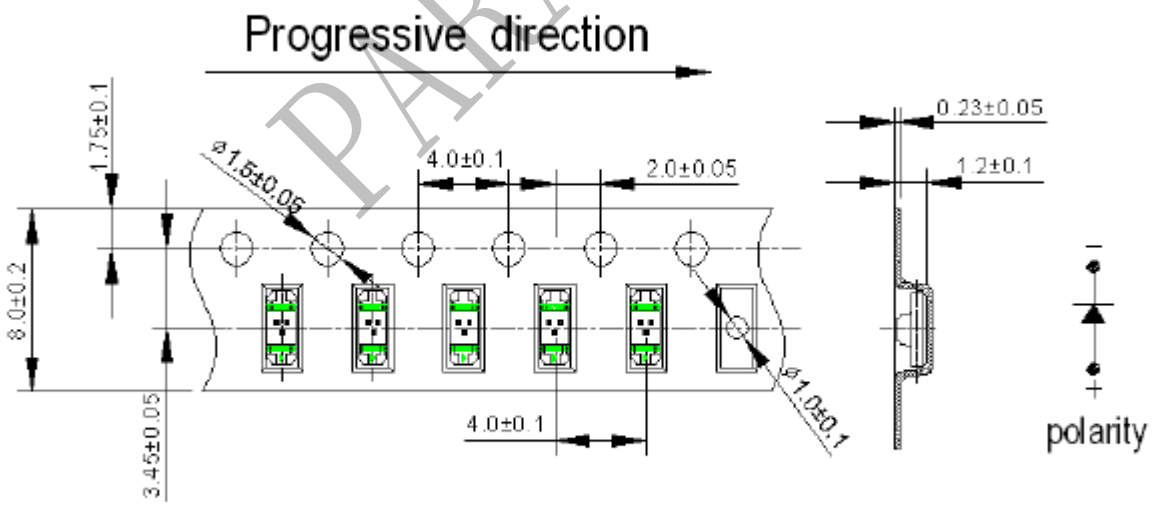


Reel Dimensions



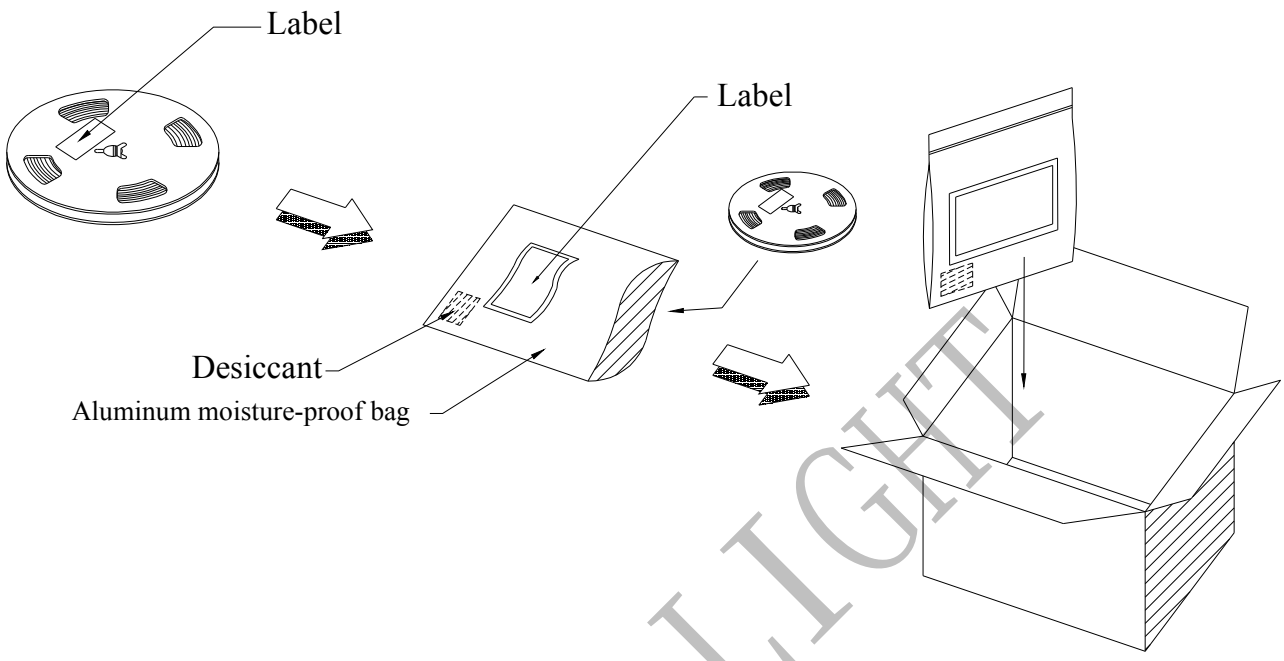
Note:
Tolerances unless mentioned ±0.1mm, Unit = mm

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Note:
1.Tolerance unless mentioned is ±0.1mm, Unit = mm.
2.Minimum packing amount is 1000 pcs per reel.

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℃/10sec.	6 Min.	22 PCS.	0/1
2	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
3	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
4	High Temperature/Humidity Reverse Bias	Ta=85℃,85%RH	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Ta=-40℃	1000 Hrs.	22 PCS.	0/1
6	High Temperature Storage	Ta=100℃	1000 Hrs.	22 PCS.	0/1
7	DC Operation Life	Ta=25℃, I_F = 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℃ or less and 90%RH or less.

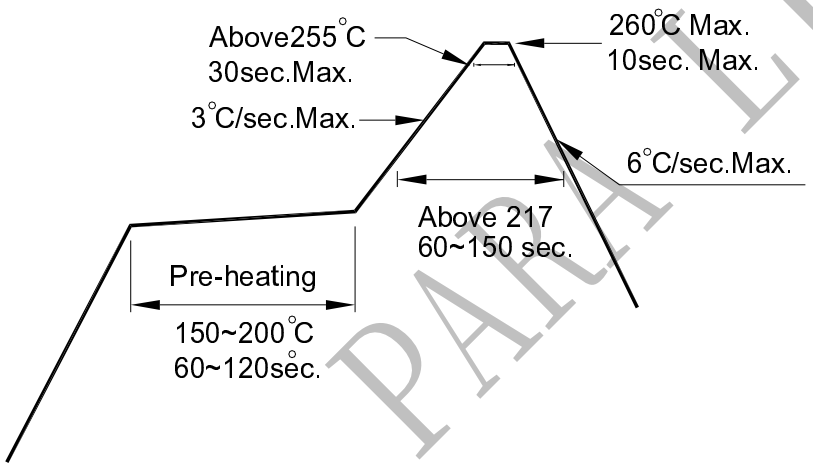
2.3 After opening the package: The LED's floor life is 1 year under 30℃ or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

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℃ 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℃ 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.