



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

APPROVAL SHEET

CUSTOMER: _____

CUSTOMER PART NO. _____

TYPE NO.: N0M00S03

PACKAGE SIZE: 1.7 x 1.6 x 1.1mm SMD LED (0606 Series)

DICE MATERIAL: AlInGaP / InGaN / InGaN PEAK WAVE LENGTH(nm) 635 / 525 / 470

EMITTED COLOR: Red / Green / Blue VIEWING ANGLE (deg): 120

EPOXY COLOR: Water Clear IV(mcd): 130/390/40

TYPE NO. : N0M00S03

ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta = 25°C

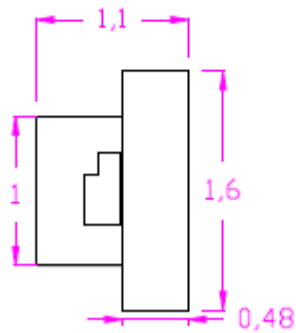
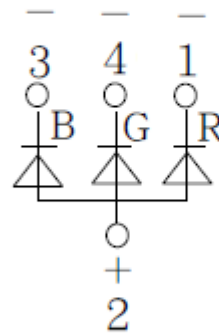
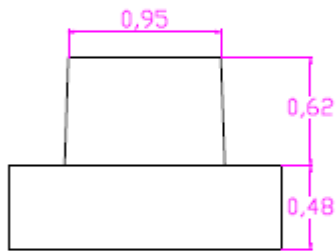
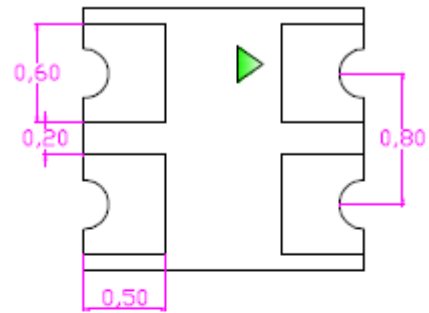
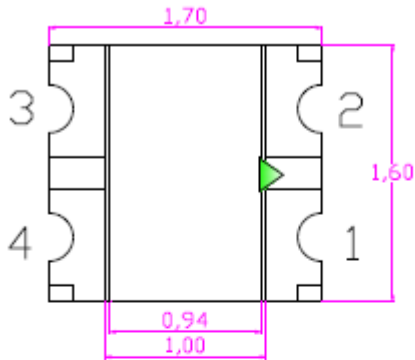
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST
Luminous Intensity	IV	100/300/30	130/390/40	-	mcd	IF = 20/15/10mA
Viewing Angle	2θ 1/2		120		deg	IF = 20mA
Peak Emission Wavelength	λ p	-	-	-	nm	
Dominant Wavelength	λ D	620/520/462	623/523/465	-	nm	IF = 20mA
Spectral Line Half-Width	Δλ		18/35/25		nm	
Forward Voltage	VF	1.8 /2.8/2.8	2.1/3.0/3.0	2.4/3.4/3.4	V	IF = 20/15/10mA
Power Dissipation	Pd			85	mW	
Peak Forward Current (Duty1/10 @ 1KHZ)	IF (Peak)			100	mA	
Recommended Operating Current	IF (Rec)		20		mA	

● **ABSOLUTE MAXIMUM RATINGS** : (Ta = 25°C)

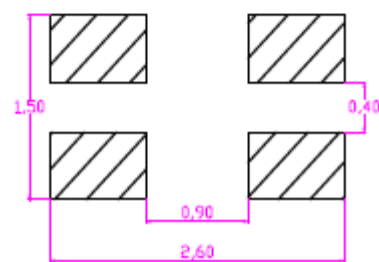
Reverse Voltage	: 5 Volt
Reverse Current	: 10 uA (VR=5V)
Electrostatic Discharge (ESD)	: 200 Volt (Green&Blue)
Operating Temperature Range	: -40°C TO 85°C
Storage Temperature Range	: -40°C TO 100°C
Reflow Soldering Temperature Range	: 260°C For 5 Seconds

SMD LED PACKAGE DIMENSIONS

Package Outline Dimensions:



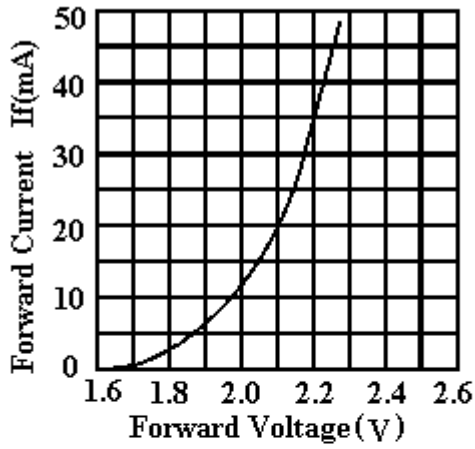
Recommended Soldering Pattern:



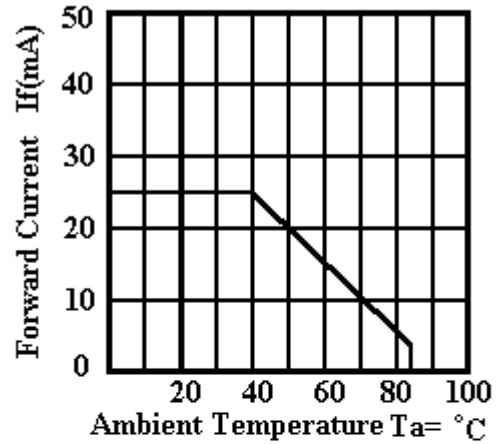
DEVICE NO.: N0M00S03	DRAWING NO.	ENGINEER
ALL TOLERANCE SHALL BE ±0.008 inch/0.2mm UNLESS OTHERWISE NOTED	DRAWING DATE	APPROVER

Typical Electro-Optical Characteristics Curves

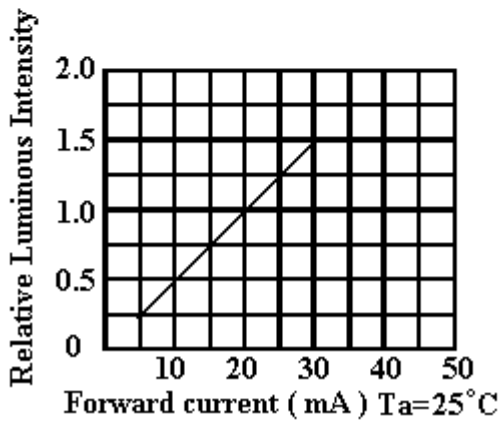
Super Orange (AlInGaP $\lambda_P=635\text{nm}$)



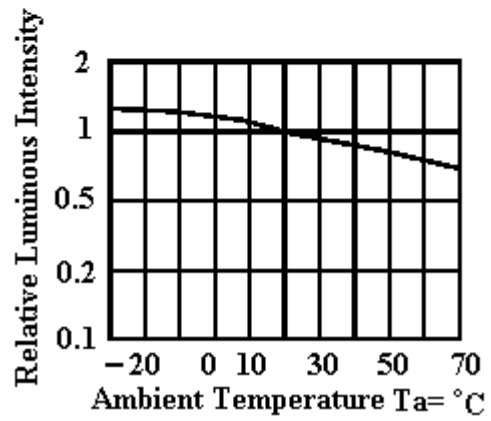
Forward current vs. Forward Voltage



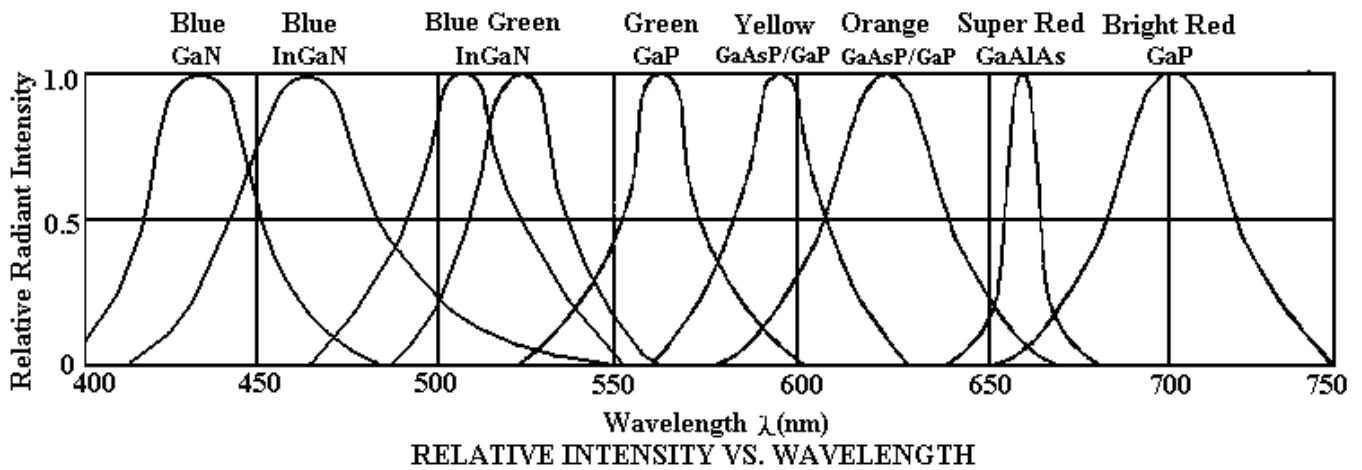
Forward current Derating curve



Luminous Intensity vs. Forward current



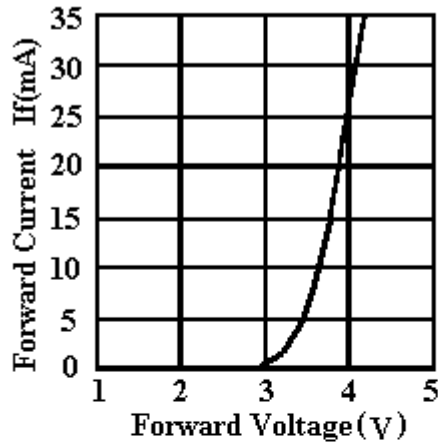
Luminous Intensity vs. Ambient Temperature



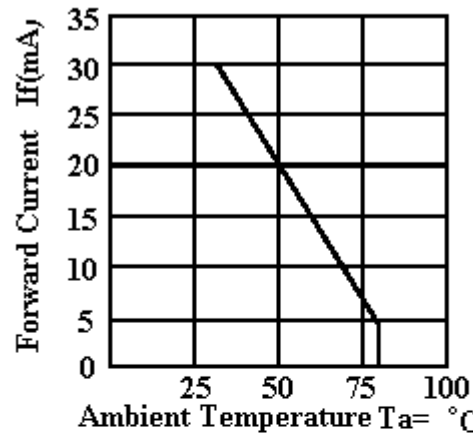
RELATIVE INTENSITY VS. WAVELENGTH

Typical Electro-Optical Characteristics Curves

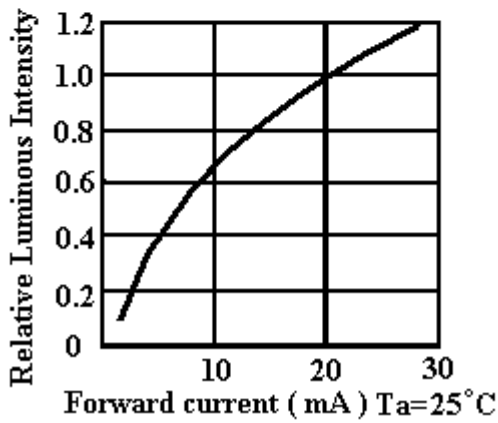
Ultra Green (InGaN $\lambda_P = 525\text{nm}$)



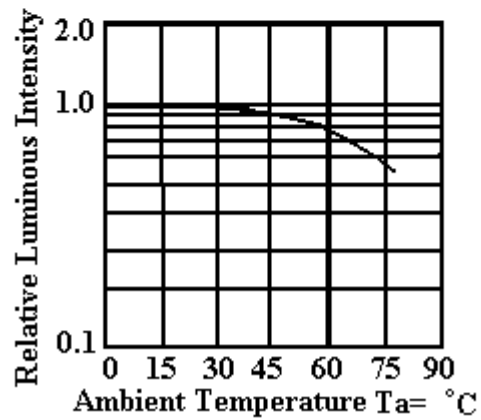
Forward current vs. Forward Voltage



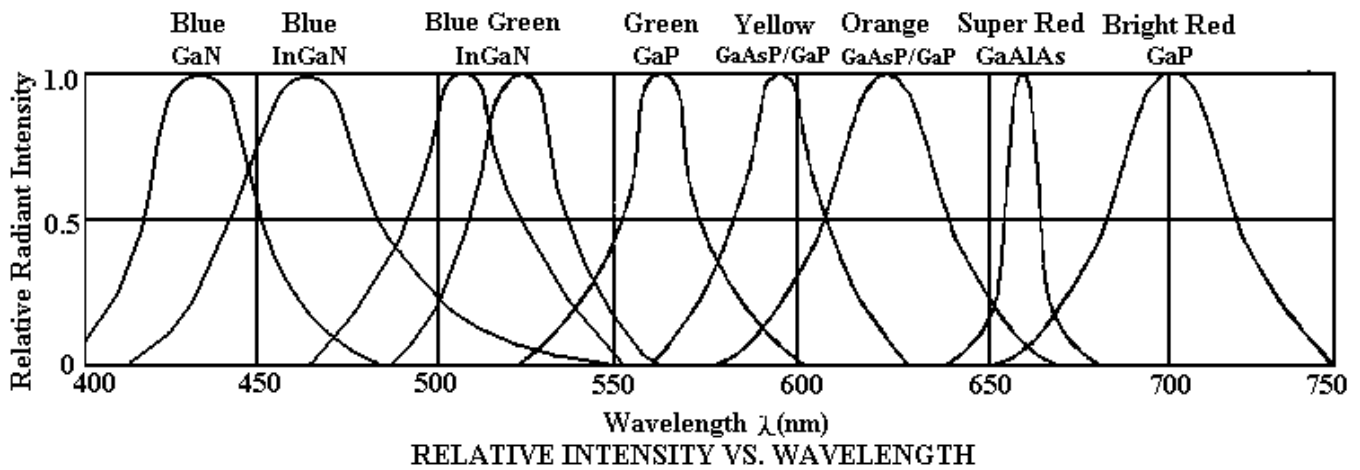
Forward current Derating curve



Luminous Intensity vs. Forward current

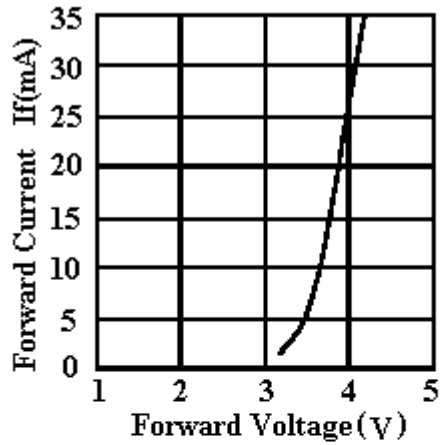


Luminous Intensity vs. Ambient Temperature

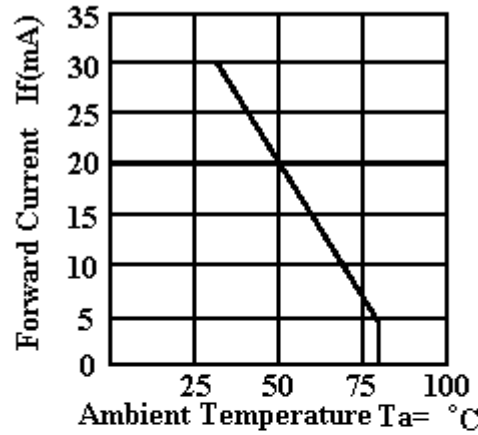


Typical Electro-Optical Characteristics Curves

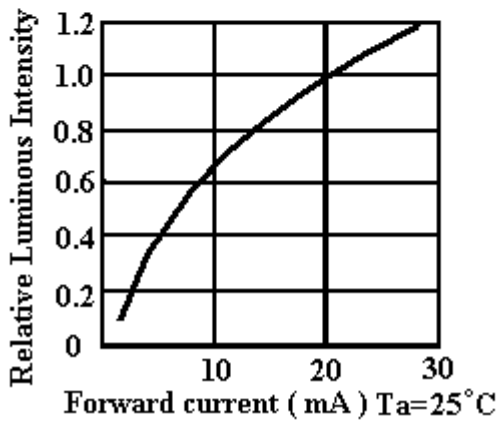
Super Blue (InGaN $\lambda_P=470\text{nm}$)



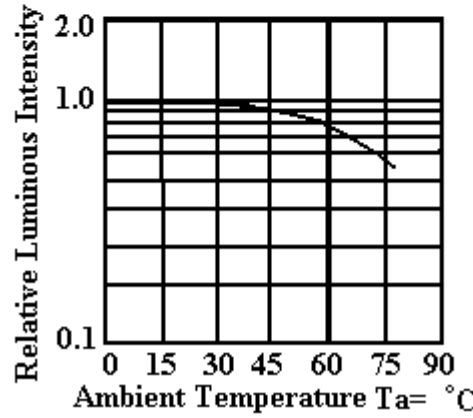
Forward current vs. Forward Voltage



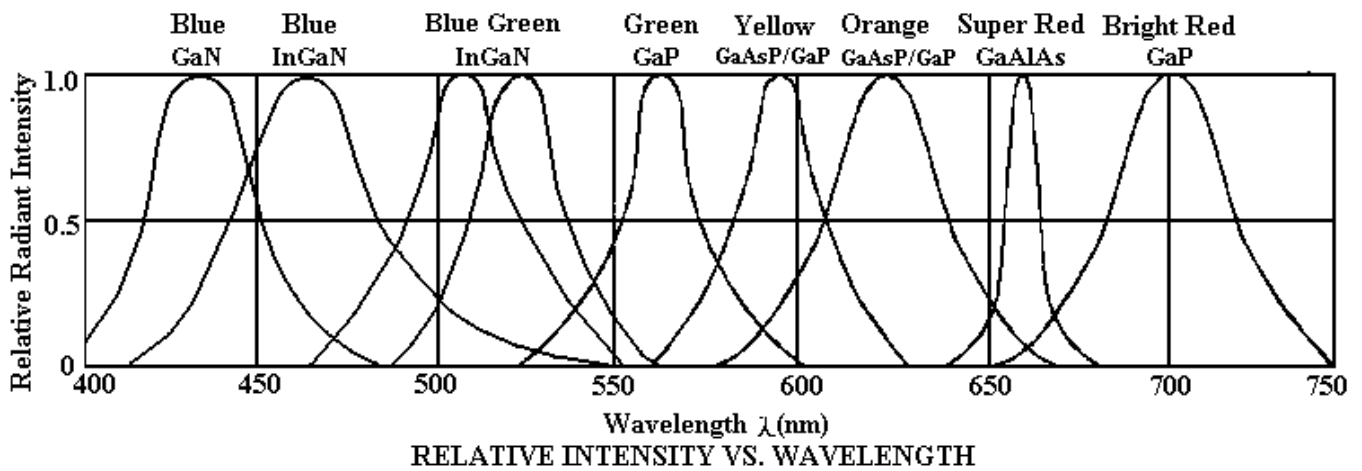
Forward current Derating curve



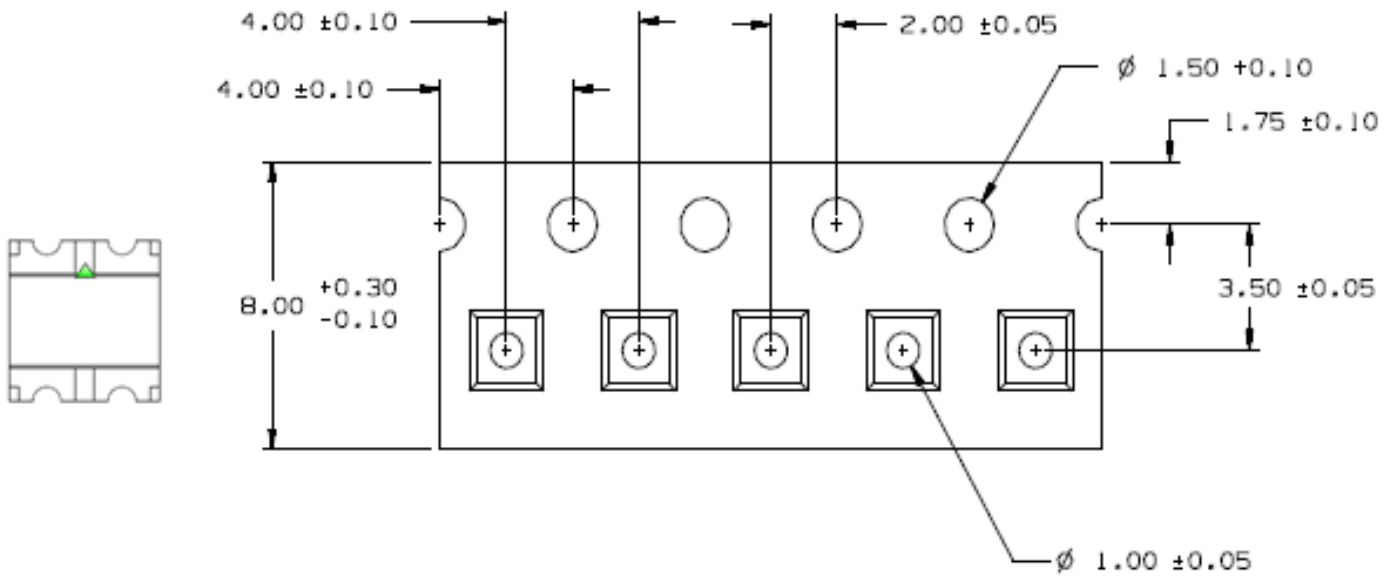
Luminous Intensity vs. Forward current



Luminous Intensity vs. Ambient Temperature



Carrier Tape Dimensions: Loaded quantity 3000 PCS per reel



Reliability test For LED Lamps

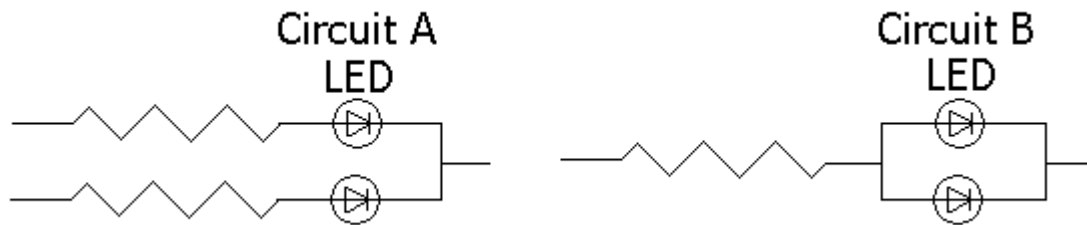
Type No. : N0M00S03

NO.	Item	Test Conditions	Test Time/ Cycle	Sample Size	Ac/Re
1	DC Operating Life	Temperature:25°C IF:20mA	1000HRS	76PCS	0/1
2	High Temperature High Humidity	Temperature:85°C 85%RH	1000HRS	76PCS	0/1
3	High Temperature Storage	Temperature:100°C	1000HRS	76PCS	0/1
4	Low Temperature Storage	Temperature:—40°C	1000HRS	76PCS	0/1
5	Temperature Cycling	85°C ~ 25°C ~ —35°C 15min~ 5min~ 15min	15Cycles	76PCS	0/1
6	Thermal Shock	85°C ~ 25°C ~ —10°C 5min~ 10sec ~ 5min	15Cycles	76PCS	0/1
7	Solder Heat	Temperature:260°C±5°C	10SEC.	76PCS	0/1

Precautions For Use LED

1. Drive Method

LED is current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in a application, it is recommended that a current limiting resistor be incorporated in the drive circuit.



(a) Circuit A it is recommended circuit.

(b) Circuit B the brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

2. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change(Burn out will happen).

3. Storage

The Storage Temperature and RH are: $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$, RH 60% or less.

Once the package is opened, the products should be used with in a week. Otherwise, they should be kept in moisture proof package with moisture absorbent material (silica gel). we suggest our customers to use our products within a year.

If the moisture absorbent material (silica gel) has faded away or the LEDs exceeded the storage time , baking treatment should be performed using the following conditions.

Baking treatment: more than 24 hours at $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$.

4. Electrostatic Discharge (ESD)

Static electricity or surge voltage will damage the LEDs

Suggestions to prevent ESD damage:

Use of a conductive wrist band or ante-electrostatic glove when handing these LEDs

All devices, equipment, and machinery must be properly grounded.

Work tables storage racks, etc. should be properly grounded

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

5. Others

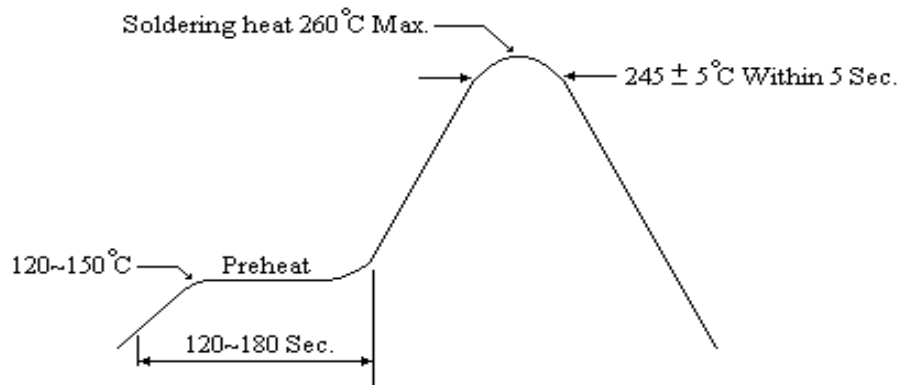
(a) If want to have the uniform luminance and color, please use the same binning number,

- and avoid using intermix to cause the differences of luminance and color.
- (b) The appearance and specifications of the product may be modified for improvement without prior notice.

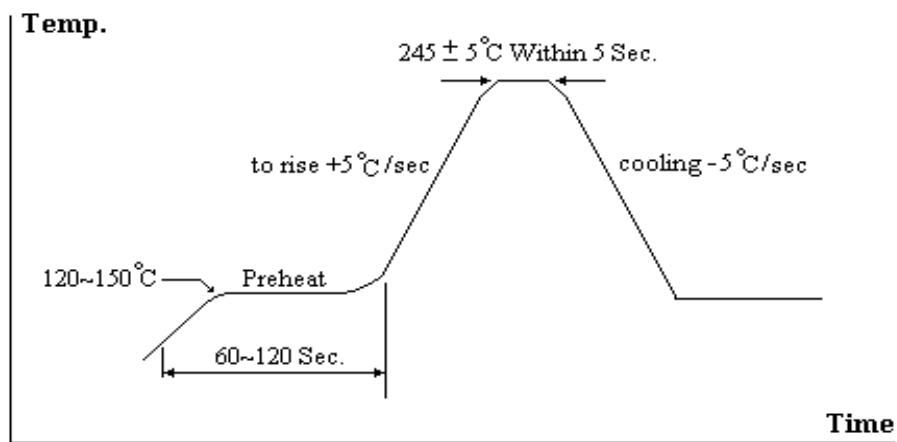
6. Soldering

Recommended soldering condition as shown below:

Soldering heat (DIP)



Reflow Temp./Time



Soldering Iron

Temperature at tip of iron : 300°C Max. (25 W Max.)

Soldering Time : 3 sec. ± 1 sec.(one time only)

If temperature is higher, time should be shorter