



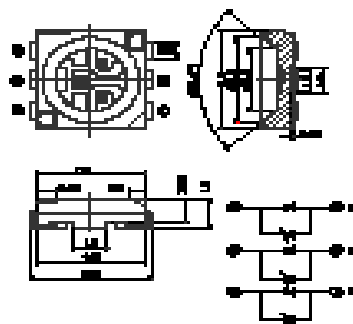
Part No. :LS-SF5050UB3/C /J

§ TOP 5.0\*5.0\*1.5 Blue

§ High intensity.

ITEM		MATERIALS
Resin(Mold)		Epoxy
Lens Color Code	C	Water Transparent
	T	Colored Transparent
	M	White Diffused
	D	Colored Diffused
Lead Frame		Ag Plating Iron Alloy
Dice		InGaN

## Outline Dimensions



§ NOTES:

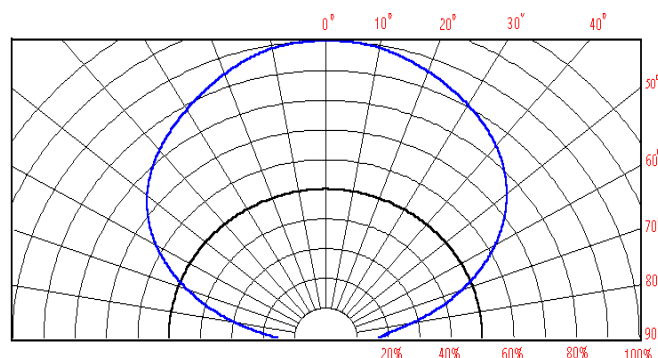
- 1.All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.1\text{mm}$  (0.004inch) unless otherwise noted.

## Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Value	Unit
Power Dissipation	PD	70	mW
DC Forward Current	IF	20	mA
Pulsed Forward Current	IFP	60	mA
Reverse Voltage	VR	5	V
Operating Temperature	Topr	-20 ~ +85	$^\circ\text{C}$
Storage Temperature	Tstg	-30 ~ +100	$^\circ\text{C}$
Lead Soldering Temp	Tsol	250for3sec $\Delta$	$^\circ\text{C}$

\* Duty 1/10 Pulse Width 0.1ms  $\Delta$ 1.6mm From Body

## Directive Characteristics ( $T_a=25^\circ\text{C}$ )



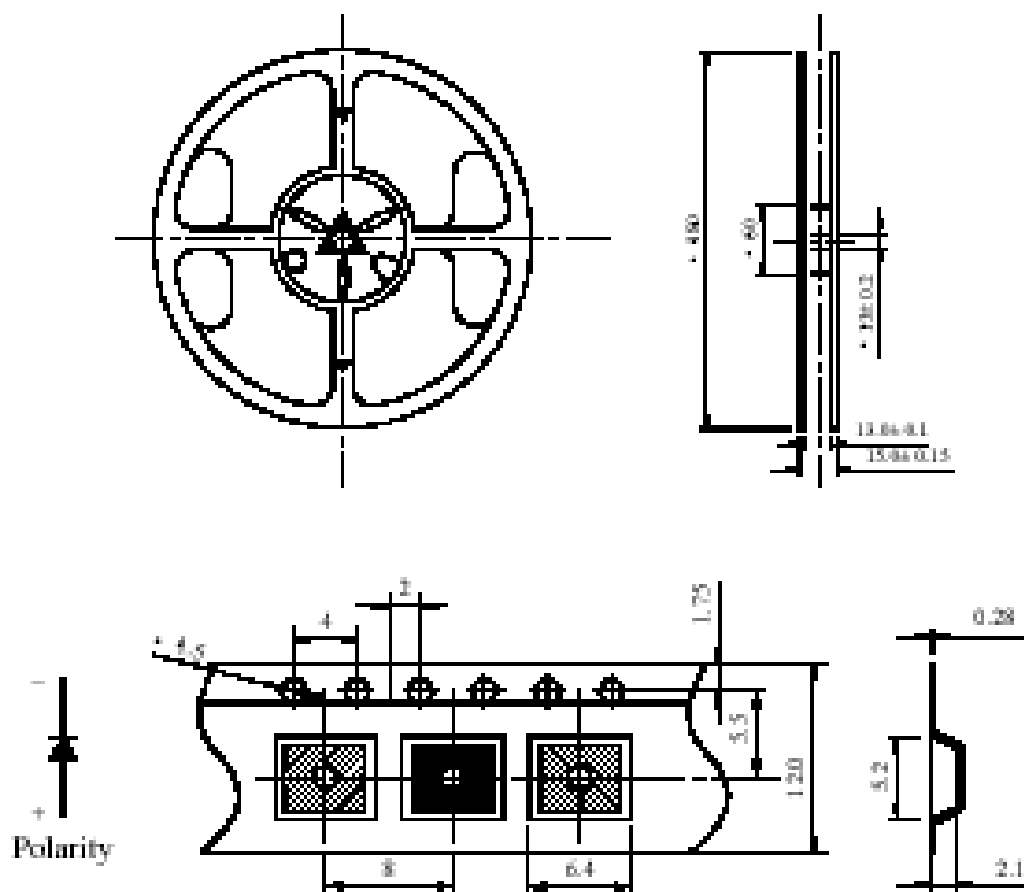
## Electrical-Optical Characteristics ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Value			Unit	Test condition
		Min.	Typ.	Max.		
Forward Voltage	$V_f$	---	3.2	3.8	V	$I_f=20\text{mA}$
Peak Emission wavelength/mix	$\lambda_P$		470~472		nm	$I_f=20\text{mA}$
Reverse Current	$I_r$	---	---	---	$\mu\text{A}$	$V_r=5\text{V}$
Spectral Line Half Width /Chip	$\Delta\lambda$		18			$I_f=20\text{mA}$
Viewing angle	$2\theta_{1/2}$	---	130	---	Deg	$I_f=20\text{mA}$
Spectral half bandwidth		---	18	---	nm	$I_f=20\text{mA}$

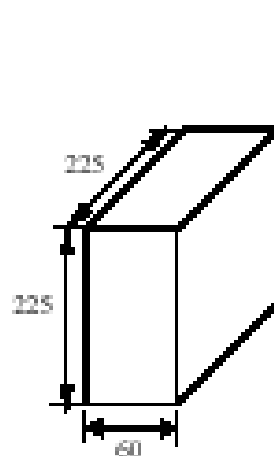
Forward Voltage		Dominant Wavelength		Luminous Intensity	
Code	Min~Max	Code	Min~Max	Code	Min~Max
T	3.0~3.1	P	468~470	V	620~750
U	3.1~3.2	Q	470~472	W	750~900
V	3.2~3.3	R	472~474		



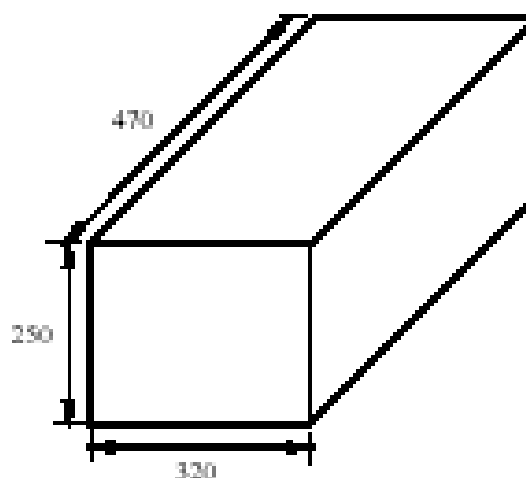
- Package Tape Specifications: (1000 pcs/Reel)



Reel Lead Min.60mm No LEDs



5 Reel in one Box



10 Box in one Carton

## ● Typical Electro-Optical Characteristics Curves

Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

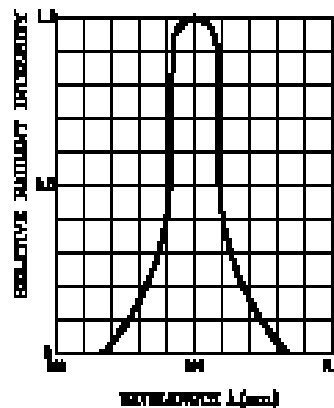


Fig.2 FORWARD CURRENT OPERATING POINT

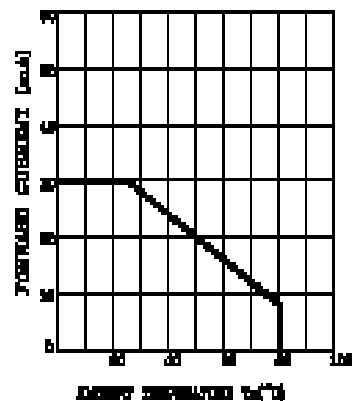


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

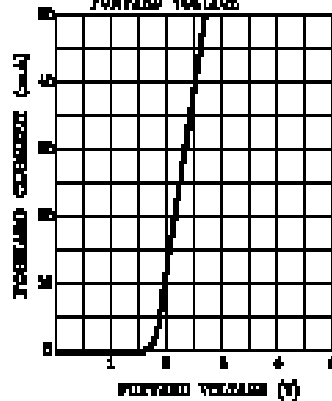


Fig.4 RELATIVE INTENSITY VS. AMBIENT TEMPERATURE

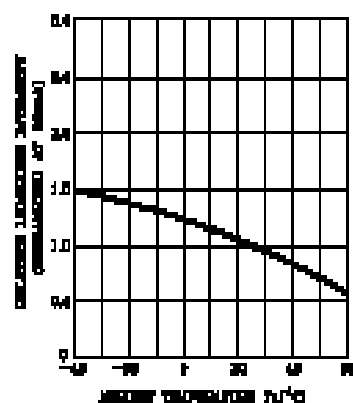


Fig.5 RELATIVE INTENSITY VS. FORWARD CURRENT

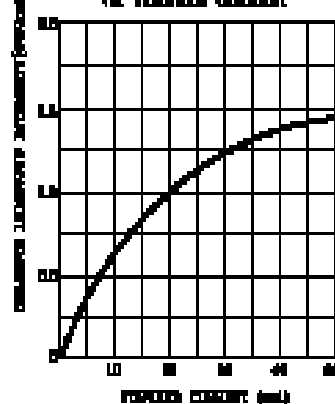
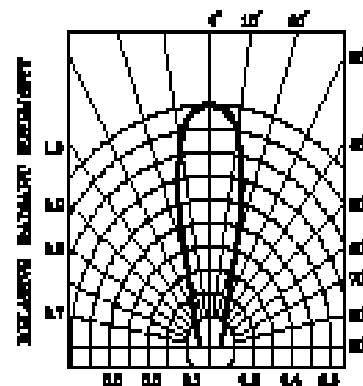


Fig.6 BEAM DIVERGENCE



## **SURFACE MOUNT CHIP LED LAMP SPECIFICATION**

### **1. SOLDERING**

#### **§ Manual Of Soldering**

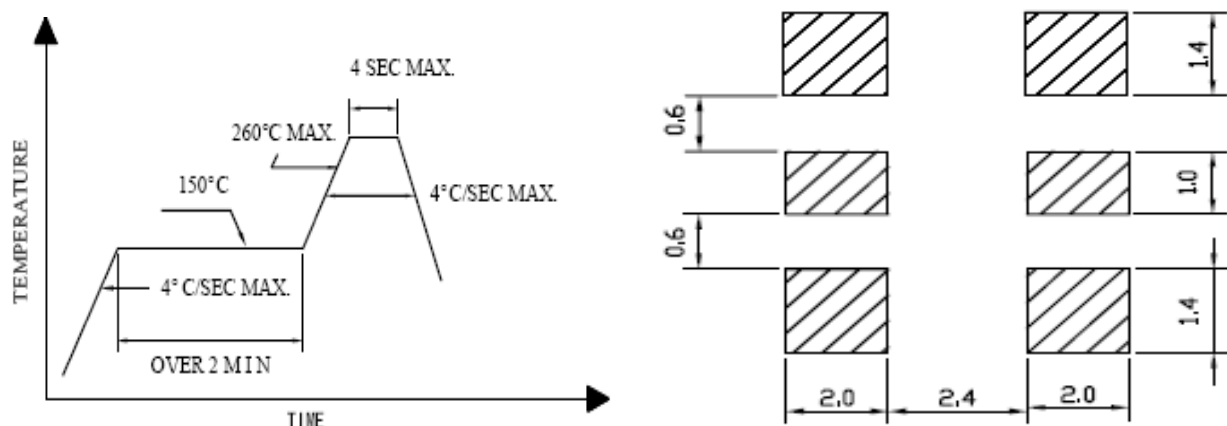
The temperature of the iron tip should not be higher than 300°C(572°F) and Soldering within 3 seconds per solder-land is to be observed.

#### **§ Reflow soldering**

Preheating: 140°C~160°C±5°C, within 2 minutes.

Operating heating: 235°C(MAX.) within 2 minutes.

Gradual Cooling(Avoid quenching).

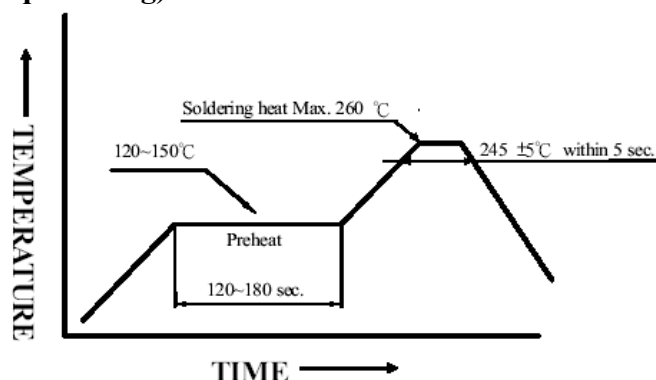


#### **§ DIP soldering(Wave Soldering)**

Preheating : 120°C~150°C, within 120~180 sec.

Operation heating : 245°C±5°C, within 5 sec. 260°C (Max)

Gradual Cooling(Avoid quenching).



### **2. Handling :**

**Care must be taken not to cause to the epoxy resin portion if LONGSUM LEDs while it is exposed**

**to high temperature.**

**Care must be taken not rub the epoxy resin portion of LONGSUM LEDs with hard or sharp article such as the sand blast and the metal hook.**



## CAUTIONS

### 1、Storage:

The storage ambient for the LEDs should not exceed -25 to 80temperature or 60% relative humidity. It is recommended that LEDs out of their original packaging are used within three months. For extended storage out of their original packaging, it is recommended that the LEDs be stored in a sealed container with appropriate desiccant or in desiccators with nitrogen ambient.

### 2、Cleaning:

Don't use the unidentified chemical liquid to wash LED, because may damage the resin surface of LED like that, even cause the colloid crack, please soak LED in the alcohol or wash in Fluorine Lyons under the normal atmospheric temperature if it is necessary, time is within one minute.

### 3、Lead Forming & Assembly

During lead forming, the leads should be bent at a point at least 4mm from the base of LED lens. Do not use the base of the lead frame as a fulcrum during forming. Lead forming must be done before soldering, at normal temperature. During assembly on PCB, use minimum clinch force possible to avoid excessive mechanical stress.

### 4、Welding

When soldering, leave a minimum of 2mm clearance from the base of the lens to the soldering point. It is necessary to let LED from high-temperature state in three minutes

**Immerse welding:** please carry welding under 260℃ once within 5S

**Flatiron welding:** please carry welding under 260℃ once within 5S.

When welding LED of linear permutation on the same PCB, please do not weld the two polarity feet of LED at the same time

Colloidal can not insert into the soldering After Immerse welding or Flatiron welding please avoid rectifying the location. While welding please do not external pressures to the colloidal of lead frame in the condition of high temperature.

In the same circuit board the chip and stick agent mixed. The stick agent must be used under 120℃ and finished within 60 S

### 5. ESD (Electrostatic Discharge)

※ When using the product please be care the ESD because the products is sensitive to the ESD. Especially when the circuit and voltage surpass absolute maximum rating, it will destroy product.

Please make a good way to guard against the static.

※ Check the circuit, such as when opened circuit, the electricity surge can not surpass absolute maximum rating, for the drive circuit please insert the proper protected circuit.

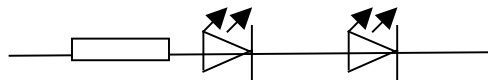
※ The countermeasures of using product: it is effective of the body should contact with ground(the static-grove and static ring), conduct electricity pad, conduct electricity overalls, conduct electricity shoe and conduct electricity container.

- ※ The obstacle peril extent become high because the abrupt discharging which is caused by the contacting between the product and low resistance surface of metal. Working plate and others which contact with product should use conduct electricity pad(the surface resistance is  $10^6 \sim 10^8 \Omega/\text{sq}$ ) and contact ground through the resistance part(e.g. the material container use the static-proof material and use static-proof package bag).
- ※ The tip of the flatiron must contact with ground. Otherwise we propose to use ion-produced machine.

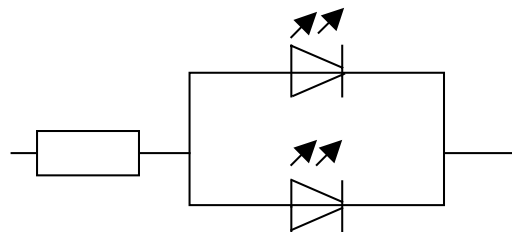
## 6. Propose operation method:

- ※ The DC drive current of LED should be between 10 to 20mA no matter for single LED or multiple LEDs.
- ※ Drive circuit:

### A. series connection



### B. parallel way



- ※ The pulse will destroy the fixed inner connection of LED, so the circuit must be designed carefully. When circuit open or close, LED will not be assaulted over-pressed (over-flow).
- ※ In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, we should know well about the drive method and condition of the application. If there is no special requirement from customer, we will ensure the uniformity of LEDs at 20mA binning.
- ※ If want to have the uniform luminance and color, please use the same binning current with our company. And avoid using intermix to cause the differences of luminance and color.



### Reliability Test Item And Condition

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

Confidence level:90%

LTPD:10%

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP:300℃±5℃	5SEC	76PCS	0/1
2	Temperature Cycle	H:+85℃ 30MIN § MIN L:-55℃ 30MIN	50CYCLES	76PCS	0/1
3	Thermal Shock	H:+100℃ 5MIN § 10SEC L:-10℃ 5MIN	50CYCLES	76PCS	0/1
4	High Temperature Storage	TEMP:100℃	1000HRS	76PCS	0/1
5	Low Temperature Storage	TEMP:-55℃	1000HRS	76PCS	0/1
6	DC Operating Life	TEMP:25℃ IF=20mA	1000HRS	76PCS	0/1
7	High Temperature/ High Humidity	85℃/85%RH	1000HRS	76PCS	0/1