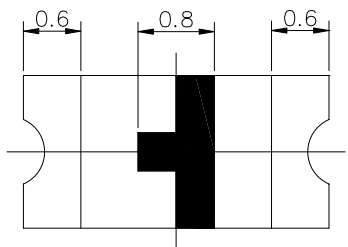
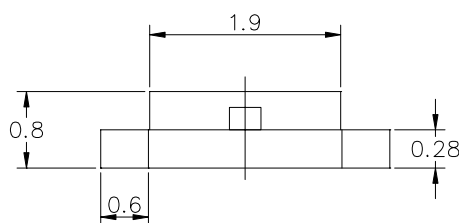
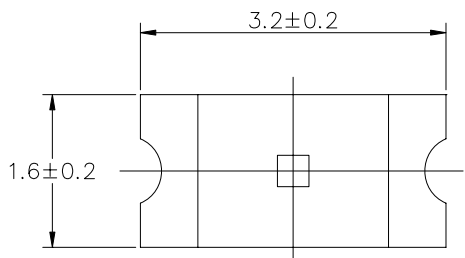


## SURFACE MOUNT LED LAMPS

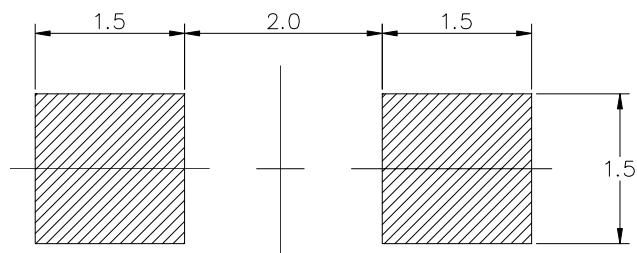
## 1206 Package Blue SMD Chip LED Lamps

Part Number: AL-HB4333-153

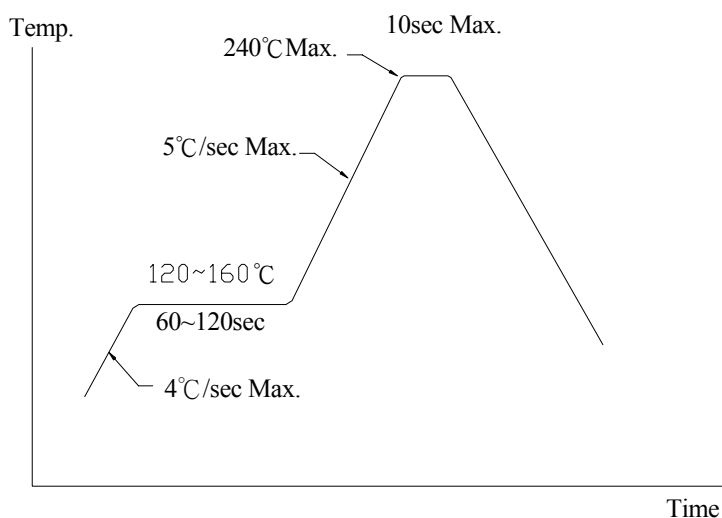
## Package outlines &amp; Re-flow Profile



## RECOMMEND PAD LAYOUT



## ■ Reflow Temp./Time



## ■ Soldering iron

Basic spec is  $\leq 5\text{sec}$  when  $260^\circ\text{C}$ . If temperature is higher, time should be shorter ( $+10^\circ\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of iron should be smaller than 15W, and temperatures should be controllable. Surface temperature of the device should be under  $230^\circ\text{C}$ .

ITEM	MATERIALS
Resin (mold)	Epoxy
Lens color	Water Clear
Printed circuit board	BT
Dice	InGaN
Emitted color	Blue

## NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.1\text{mm}$  (0.004inch) unless otherwise noted.
3. Soldering terminal may shift in x, y direction.
4. Polarity referring on to the Cathode mark is reversed on the red.

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**SURFACE MOUNT LED LAMPS**

Part Number: AL-HB4333-153

**ELECTRO-OPTICAL CHARACTERISTICS** (T<sub>A</sub>=25°C)

Parameter	Test Condition	Symbol	Value			Unit
			MIN.	TYP.	MAX.	
Viewing angle at 50% I <sub>V</sub>	I <sub>F</sub> =20mA	2 θ 1/2	120			Deg
Forward voltage	I <sub>F</sub> =20mA	V <sub>F</sub>	—	3.1	3.4	V
Luminous intensity	I <sub>F</sub> =20mA	I <sub>V</sub>	45	85	—	mcd
Wavelength	I <sub>F</sub> =20mA	λ d	—	470	—	nm
	I <sub>F</sub> =20mA	λ p	—	469	—	nm
Peak pulsing current (1/10 duty f=1kHz)		I <sub>FP</sub>	60			mA

**Absolute maximum ratings** (T<sub>A</sub>=25°C)

Parameter	Symbol	Value	Unit
Forward current	I <sub>F</sub>	20	mA
Reverse voltage	V <sub>R</sub>	5	V
Reverse current	I <sub>R</sub>	10	μA
Power Dissipation	P <sub>D</sub>	78	mW
Operating temperature range	Top	-30 ~+80	°C
Storage temperature range	Tstg	-40 ~+90	°C

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**SURFACE MOUNT LED LAMPS**

Part Number: AL-HB4333-153

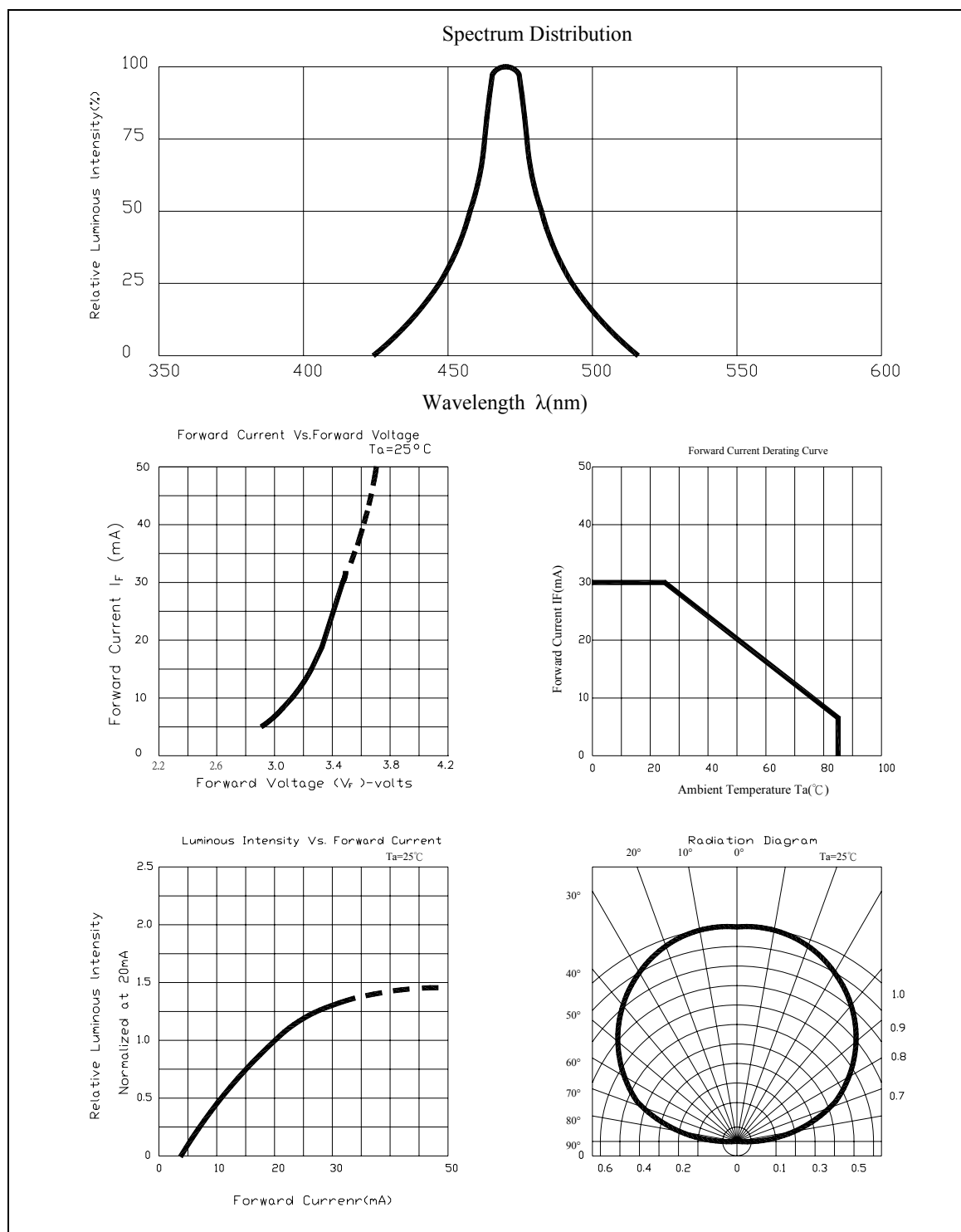
**Test items and results of reliability**

No.	Items	Test Condition	Test Hours/Cycles	Sample Size
1	Solder Heat	TEMP : 260°C±5°C	5 sec	48 pcs
2	Temperature Cycle	90°C ~ 25°C ~ -30°C ~ 25°C 30m 5m 30m 5m	300Cycles	48 pcs
3	Thermal Shick	100°C ~ -55°C 10m 10m	100Cycles	48 pcs
4	Operation Life	I <sub>F</sub> =20mA	1000 Hrs	48 pcs
5	High Temperature Storage	Temp : 90°C	1000Hrs	48 pcs
6	Low Temperature Storage	Tem : -30°C	1000Hrs	48 pcs
7	High Temperature / High Humidity	80°C / R.H80%	1000Hrs	48 pcs

\* Refer to reliability test standard specification for in this line.

## SURFACE MOUNT LED LAMPS

Part Number: AL-HB4333-153



# **A-BRIGHT** A-BRIGHT INDUSTRIAL CO., LTD.

## SURFACE MOUNT LED LAMPS

Part Number: AL-HB4333-153

### 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 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.

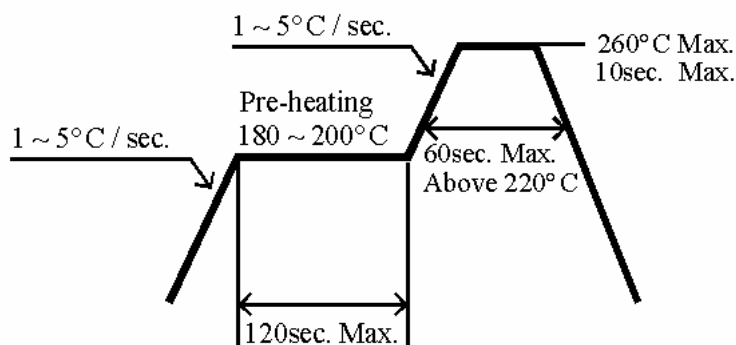
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

2.6 If the moisture 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 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 280°C for 3 seconds within once in less than 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.