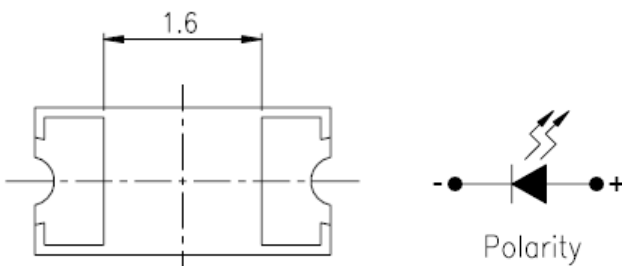
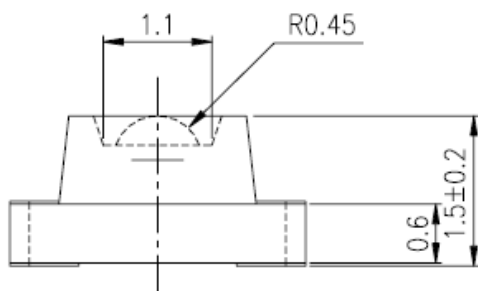
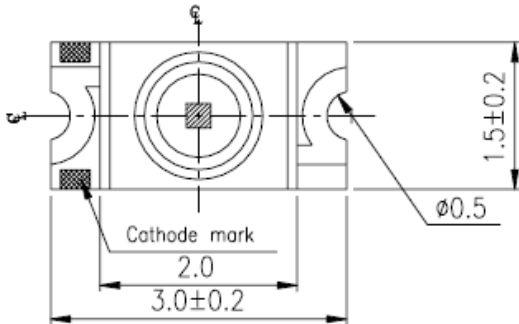


# **A-BRIGHT** A-BRIGHT INDUSTRIAL CO., LTD. SURFACE MOUNT LED LAMPS

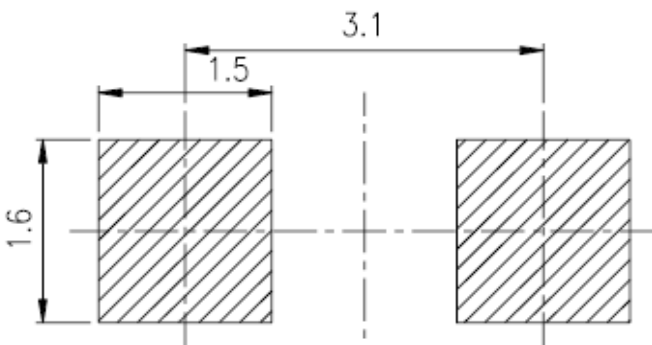
1206 Inner Lens White SMD Chip LED Lamps

Part Number: AL-HW433A

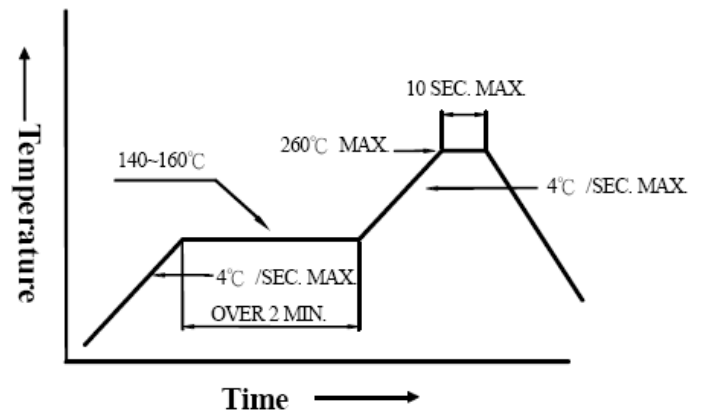
## Package outlines & Re-flow Profile



For Reflow Soldering



### ■Reflow Temp/Time



### ■Soldering iron

Basic spec is  $\leq 5$ sec when  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1$ 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	Yellow Diffused
Printed circuit board	BT
Dice	InGaN
Emitted color	White

### NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.1$ 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-HW433A

**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	60			Deg
Forward voltage	I <sub>F</sub> =20mA	V <sub>F</sub>	--	3.2	4.0	V
Luminous intensity	I <sub>F</sub> =20mA	I <sub>v</sub>	--	150	--	mcd
Chromaticity Coordinates	I <sub>F</sub> =20mA	X	--	0.31	--	--
		Y	--	0.32	--	
Peak pulsing current (1/10 duty f=1kHz)		I <sub>FP</sub>	100			mA

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

Parameter	Symbol	Value	Unit
Forward current	I <sub>F</sub>	30	mA
Reverse voltage	V <sub>R</sub>	5	V
Reverse current	I <sub>R</sub>	10	μA
Power Dissipation	P <sub>D</sub>	65	mW
Electrostatic Discharge	ESD	150	V
Operating temperature range	Top	-30 ~+80	°C
Storage temperature range	Tstg	-40 ~+85	°C

**A-BRIGHT A-BRIGHT INDUSTRIAL CO., LTD.**  
**SURFACE MOUNT LED LAMPS**

Part Number: AL-HW433A

**Test items and results of reliability**

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260°C±5°C Min. 5sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100°C 15min ∫ 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40°C	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	IF = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C/ 85%RH	1000 Hrs.	22 PCS.	0/1

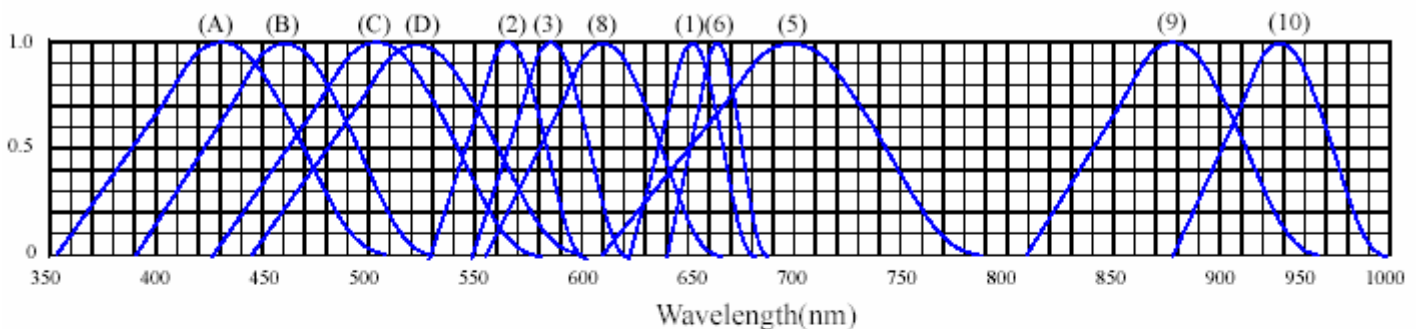
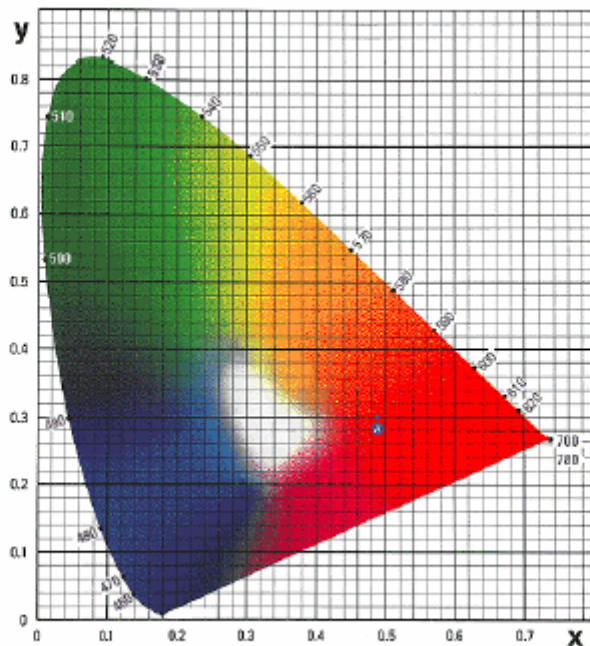
\* Refer to reliability test standard specification for in this line.

# **A-BRIGHT** A-BRIGHT INDUSTRIAL CO., LTD. SURFACE MOUNT LED LAMPS

Part Number: AL-HW433A

## Typical Optical-Electrical Characteristic Curves

### ◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



RELATIVE INTENSITY VS. WAVELENGTH( $\lambda_p$ )

- |   |                                  |
|---|----------------------------------|
| (1) GaAsP/GaAs 655nm/Red                | (9)- GaAlAs 880nm                |
| (2) GaP 568nm/ Yellow Green             | (10)-GaAs/GaAs&GaAlAs/GaAs 940nm |
| (3) GaAsP/GaP 585nm/Yellow              | (A)- GaN 430nm/Blue              |
| (4) GaAsP/GaP 635nm/Orange & Hi-Eff Red | (B)- InGaN 470nm/Blue            |
| (5) GaP 700nm/Bright Red                | (C)- InGaN 502nm/Ultra Green     |
| (6) GaAlAs/GaAs 660nm/Super Red         | (D)- InGaN 523nm/Ultra Green     |
| (8) GaAsP/GaP 610nm/Super Red           |                                  |

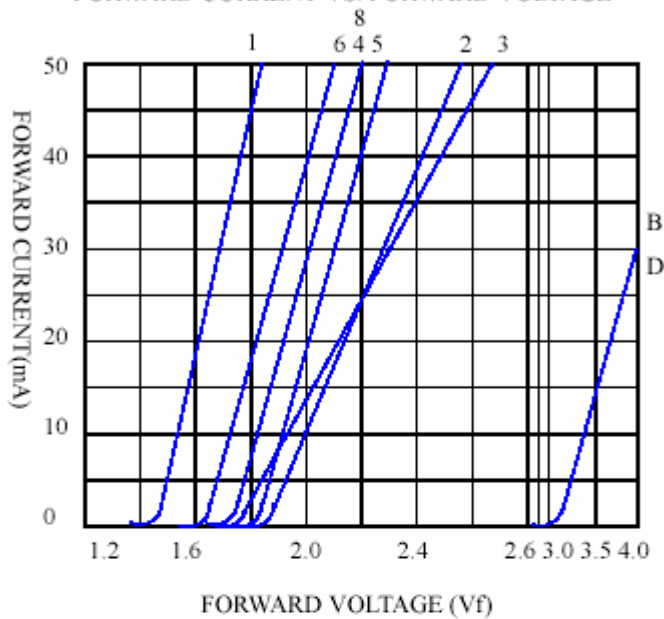
# **A-BRIGHT** A-BRIGHT INDUSTRIAL CO., LTD. SURFACE MOUNT LED LAMPS

Part Number: AL-HW433A

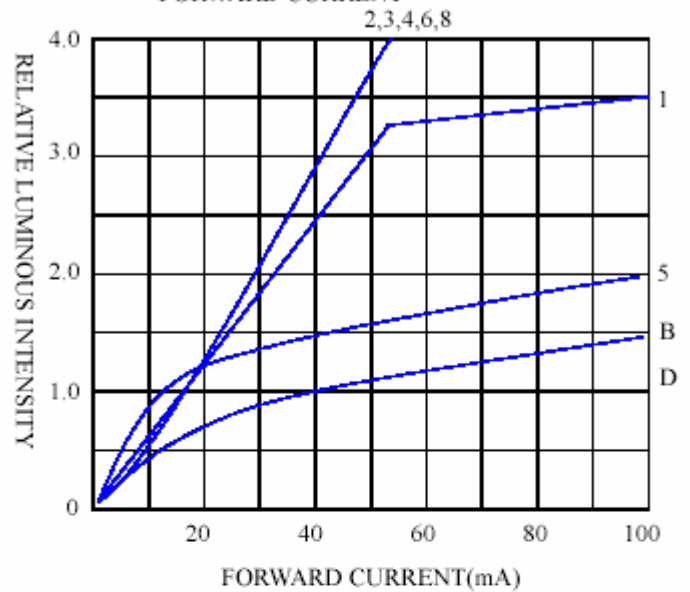
## Typical Optical-Electrical Characteristic Curves

### ◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

