

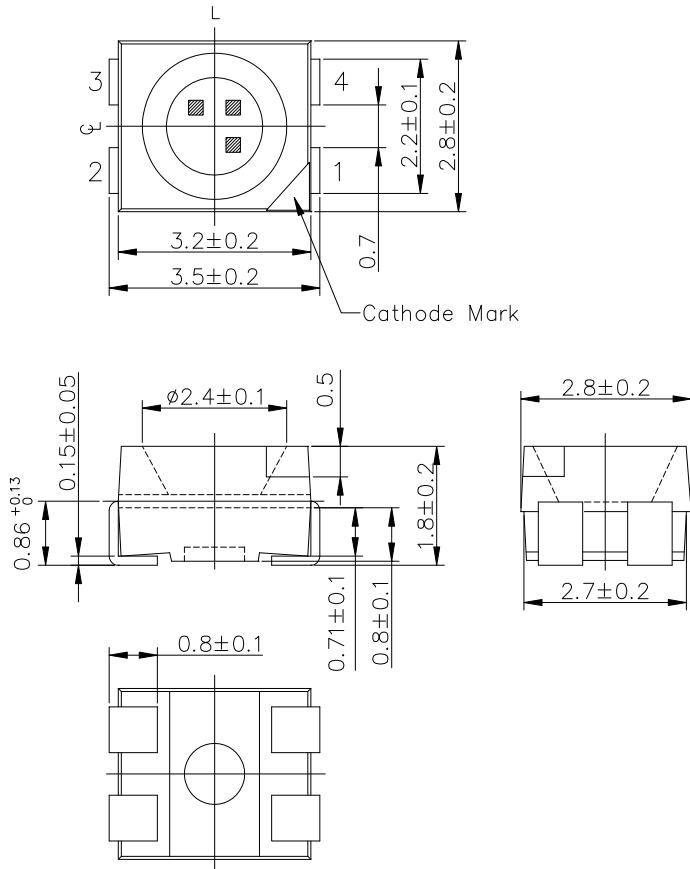
A-BRIGHT A-BRIGHT INDUSTRIAL CO., LTD.

SURFACE MOUNT CHIP LED LAMPS

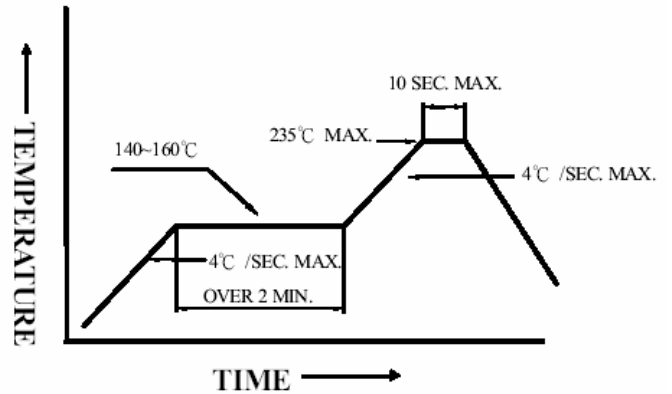
Top View With Full Color LEDs

Part Number: 67-23SURSUGSUBC

Package outlines & Re-flow Profile

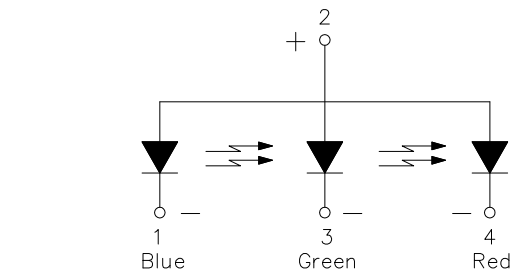


Reflow Temp/Time

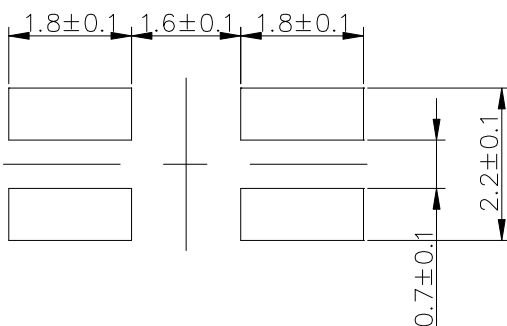


Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°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°C .



For Reflow Soldering



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

NOTES:

- All dimensions are in millimeters (inches).
- Tolerances are $\pm 0.1\text{mm}$ (0.004inch) unless otherwise noted.
- Polarity referring onto the cathode mark is reversed on the red.

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ELECTRO-OPTICAL CHARACTERISTICS (T_A=25°C)

Parameter	Emitted Color	Test Condition	Symbol	Value			Unit
				MIN.	TYP.	MAX.	
Forward voltage	R	I _F =20mA	V _F	-	2.0	2.4	V
	G			-	3.5	4.3	
	B			-	3.5	4.3	
Luminous intensity	R	I _F =20mA	I _v	100	160	-	mcd
	G			190	280	-	
	B			45	70	-	
Wavelength	R	I _F =20mA	λ _p	-	632	-	nm
	G			-	530	-	
	B			-	470	-	
	R		λ _d	-	625	-	
	G			-	525	-	
	B			-	470	-	
Spectral Line Half-Width	R	I _F =20mA	Δλ	20			nm
	G			30			
	B			30			
Peak pulsing current (1/10 duty f=1kHz)	R	I _F =20mA	I _{FP}	100			mA
	G						
	B						
Power Dissipation	R	I _F =20mA	P _D	120			mW
	G						
	B						

Absolute maximum ratings (T_A=25°C)

Parameter	Symbol	Value	Unit
Viewing angle at 50% I _v	2θ 1/2	120	Deg
Forward current	I _F	30	mA
Reverse voltage	V _R	5	V
Reverse current	I _R	100	μA
Operating temperature range	Top	-25 ~ +80	°C
Storage temperature range	Tstg	-30 ~ +85	°C

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Test items and results of reliability

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS C 7021 :B-1	Connect with a power $I_f=20\text{mA}$ T_a =Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS C 7021 :B-11	$T_a=+65^\circ\text{C} \pm 5^\circ\text{C}$ RH=90%-95% Test time=240hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS C 7021 :B-10	High $T_a=+85^\circ\text{C} \pm 5^\circ\text{C}$ Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low $T_a=-35^\circ\text{C} \pm 5^\circ\text{C}$ Test time=1,000hrs	0/20
Environmental Test	Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS C 7021 :A-4	$-35^\circ\text{C} \sim +25^\circ\text{C} \sim +85^\circ\text{C} \sim +25^\circ\text{C}$ 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	$-35^\circ\text{C} \pm 5^\circ\text{C} \sim +85^\circ\text{C} \pm 5^\circ\text{C}$ 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS C 7021 :A-1	Preheating : 140°C -160°C ,within 2 minutes. Operation heating : 235°C(Max.), within 10seconds. (Max.)	0/20

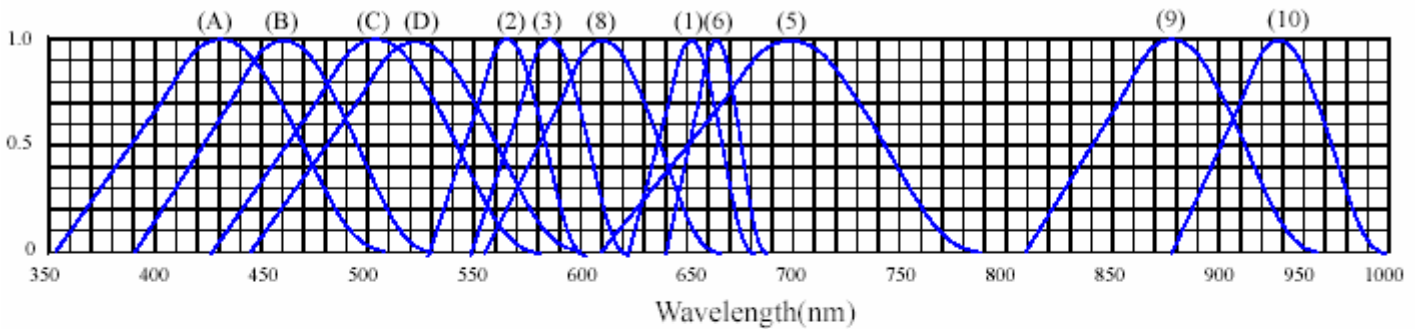
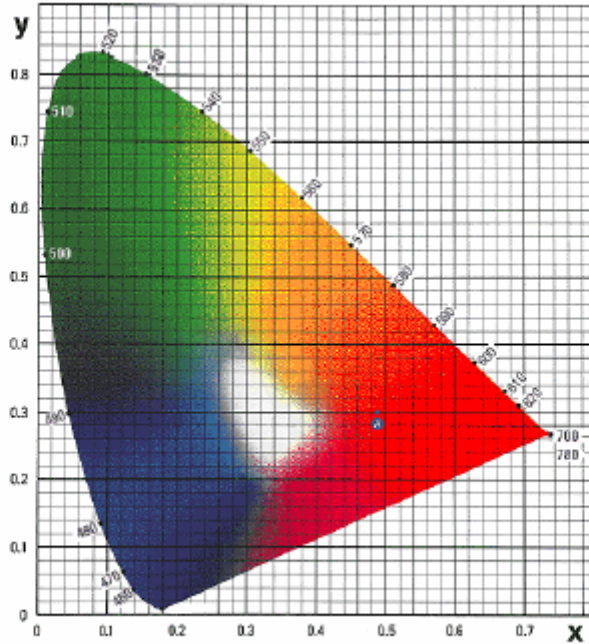
* Refer to reliability test standard specification for in this line.

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Typical Electro-Optical Characteristic Curves

◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



RELATIVE INTENSITY VS. WAVELENGTH(λ_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 | |

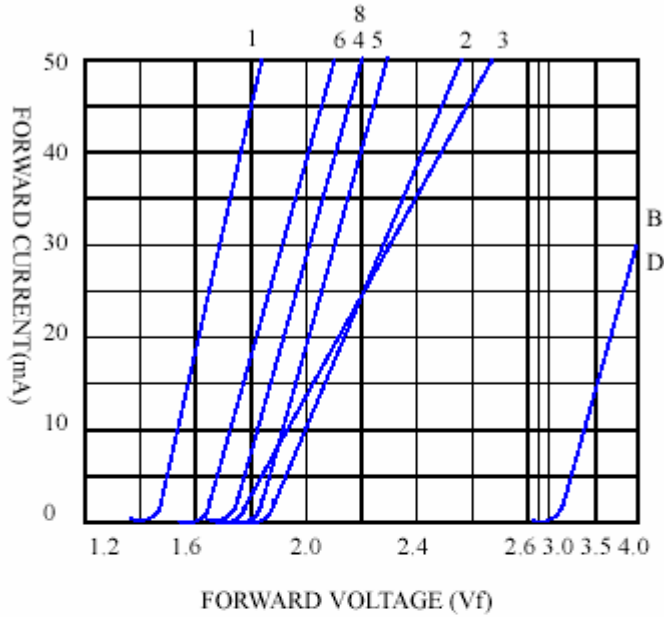
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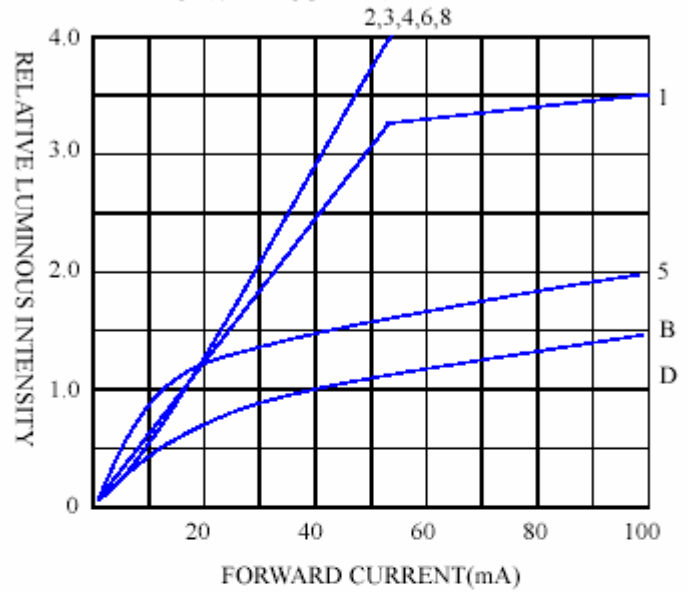
Typical Electro-Optical Characteristic Curves

◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

