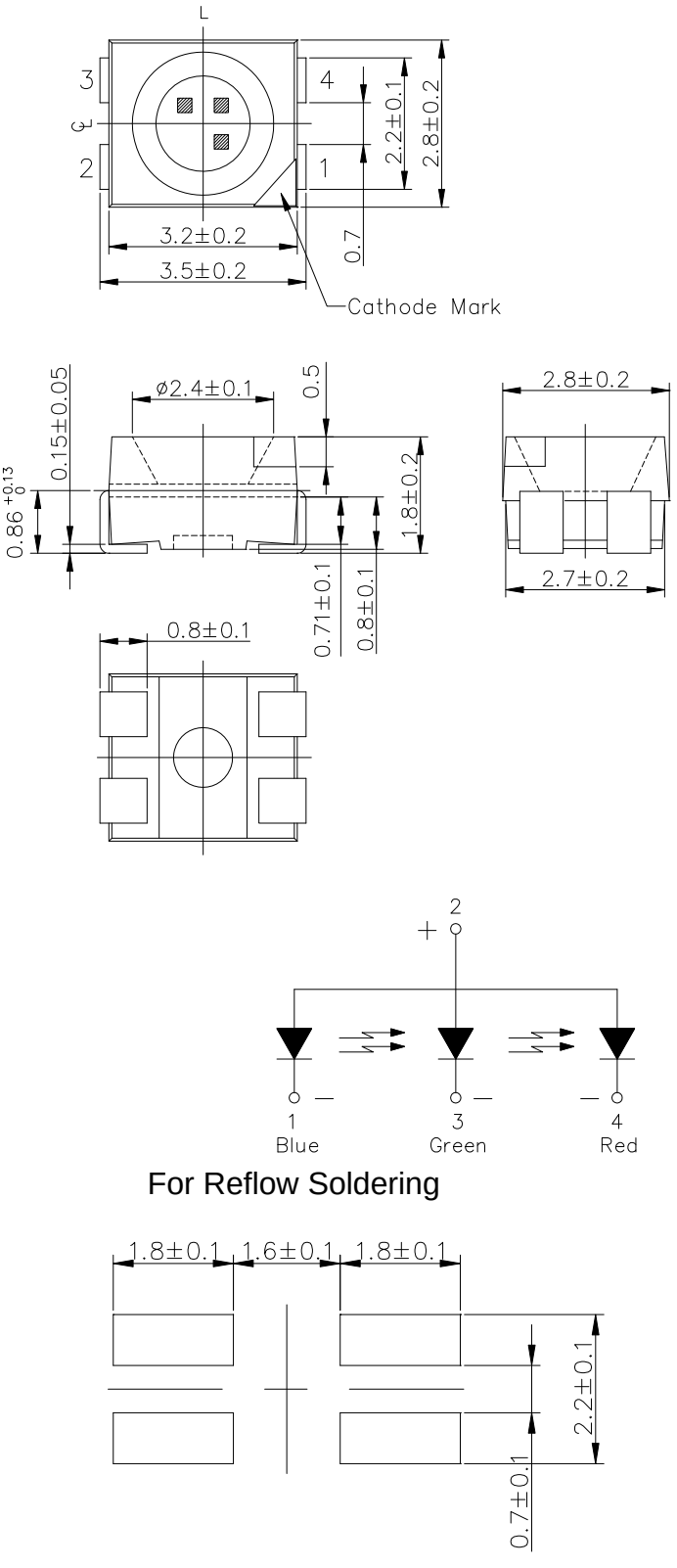
A-BRIGHT INDUSTRIAL CO., LTD.

SURFACE MOUNT CHIP LED LAMPS

Top View With Full Color LEDs

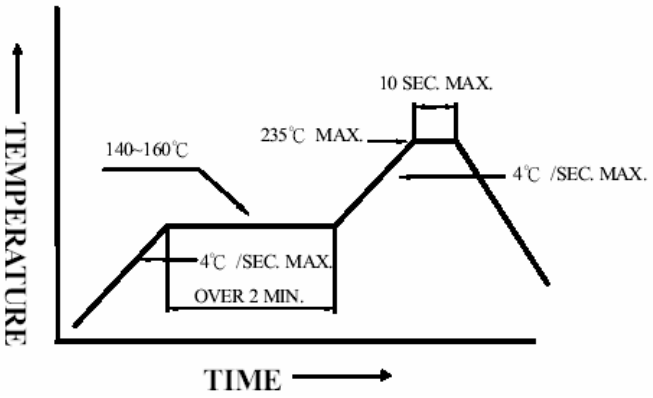
Part Number: 67-23SURSUGSUBC

Package outlines & Re-flow Profile



For Reflow Soldering

■Reflow Temp/Time



■Soldering iron

Basic spec is ≤ 5sec when 260℃. If temperature is higher, time should be shorter (+10℃→ -1sec).Power dissipation of iron should be smaller than 15W, and temperatures should be controllable .Surface temperature of the device should be under 230℃ .

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

NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerances are ±0.1mm (0.004inch) unless otherwise noted.
3. Polarity referring onto the cathode mark is reversed on the red.

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ELECTRO-OPTICAL CHARACTERISTICS (T_A=25℃)

Parameter	Emitted Color	Test Condition	Symbol	Value MIN.	Value TYP.	Value MAX.	Unit
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	–	160	–	mcd
	G			–	280	–	
	B			–	70	–	
Wavelength	R	I_F=20mA	λp	–	632	–	nm
	G			–	530	–	
	B			–	470	–	
	R		λd	–	625	–	
	G			–	525	–	
	B			–	470	–	
Spectral Line Half-Width	R	I_F=20mA	△λ		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℃)

Parameter	Symbol	Value	Unit
Viewing angle at 50% Iv	2 θ 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	℃
Storage temperature range	Tstg	-30 ~+85	℃

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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 If=20mA Ta=Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS C 7021 :B-11	Ta=+65℃ ±5℃ RH=90%-95% Test time=240hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS C 7021 :B-10	High Ta=+85℃ ±5℃ Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-35℃ ±5℃ 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℃ ~ +25℃ ~ +85℃ ~ +25℃ 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	-35℃ ±5℃ ~+85℃ ±5 ℃ 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS C 7021 :A-1	Preheating： 140℃-160℃,within 2 minutes. Operation heating： 235℃(Max.), within 10seconds. (Max.)	0/20

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

2009/2/20

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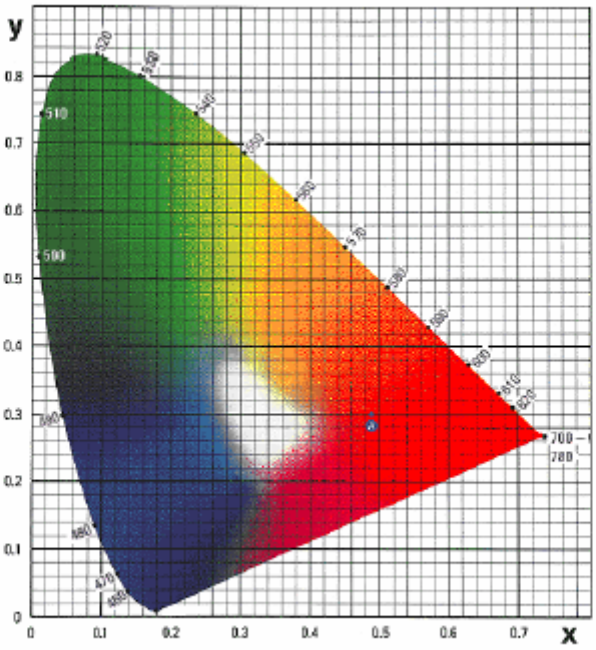
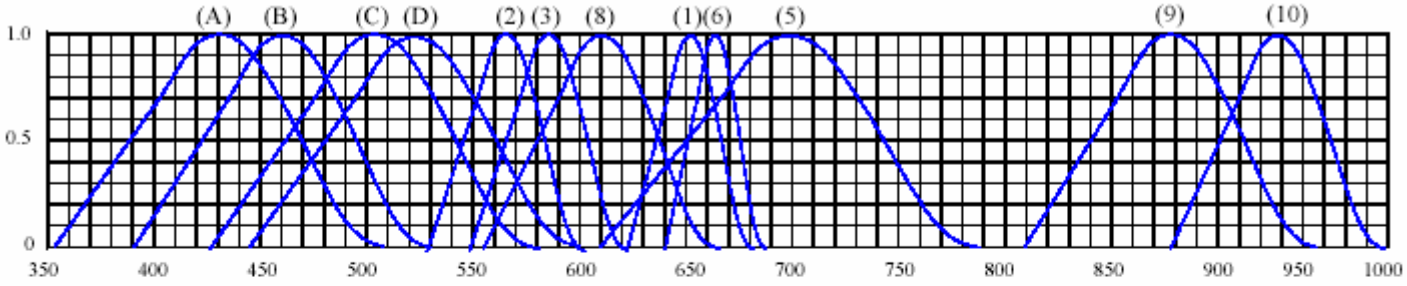
Part Number: 67-23SURSUGSUBC

Typical Electro-Optical Characteristic Curves

◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES





RELATIVE INTENSITY VS. WAVELENGTH(λp)

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

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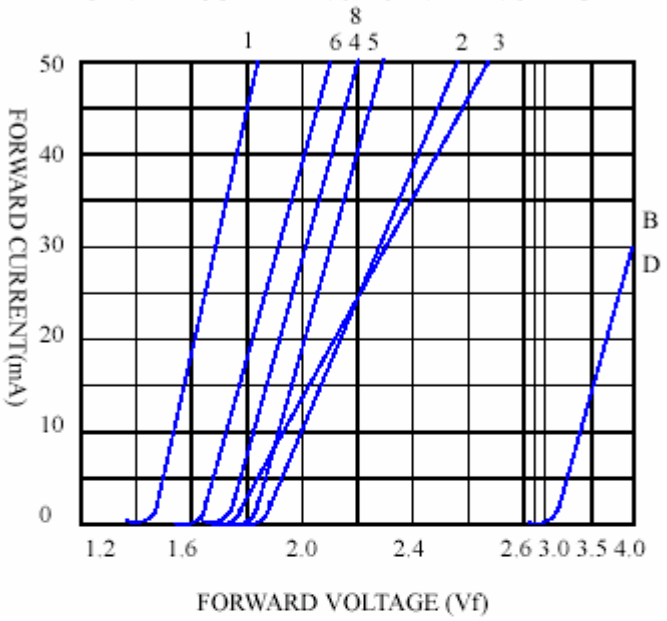
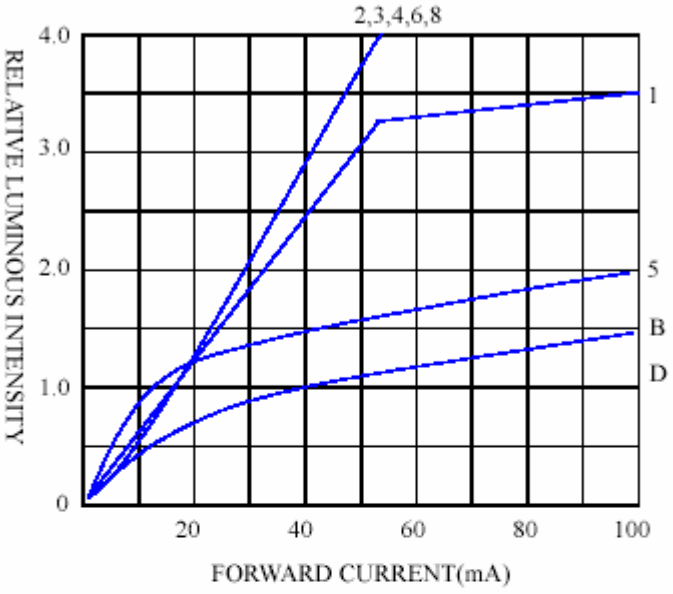
Typical Electro-Optical Characteristic Curves

◆ **CHARACTERISTICS DIAGRAMS**

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE