

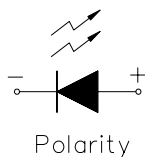
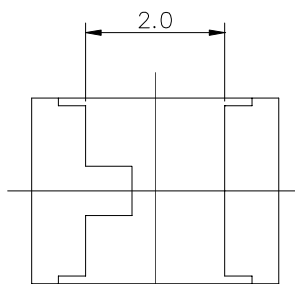
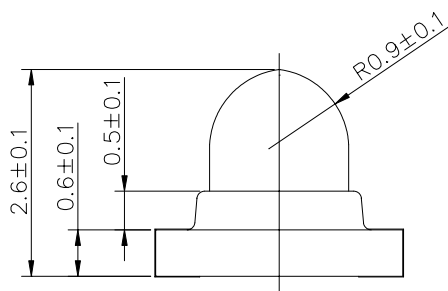
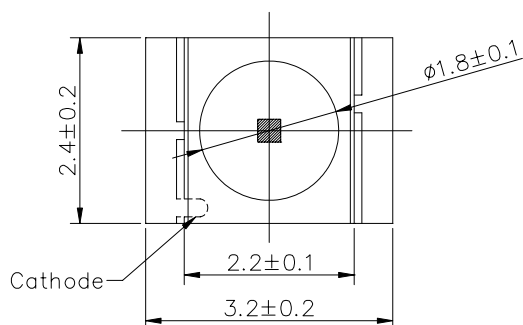
A-BRIGHT A-BRIGHT INDUSTRIAL CO., LTD.

SURFACE MOUNT LED LAMPS

1.8mm Round Subminiature SMD Chip LED Lamps

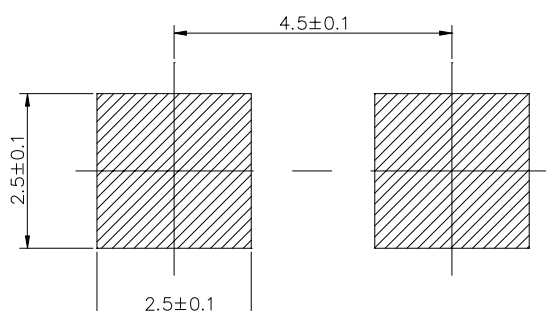
Part Number: 42-21UYC/S530-A4

Package outlines & Re-flow Profile

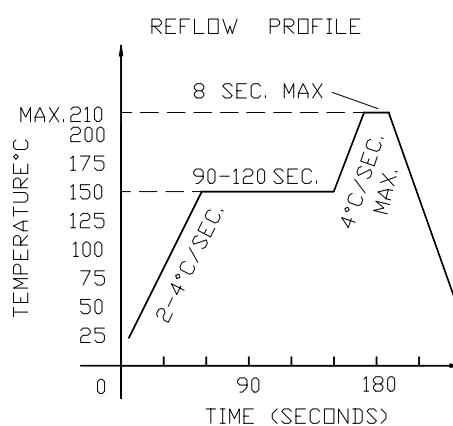


Polarity

For reflow soldering



■ 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 .

ITEM	MATERIALS
Resin (mold)	Epoxy
Lens color	Water Clear
Printed circuit board	BT
Dice	AlGaInP
Emitted color	Super Yellow

NOTES:

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

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Part Number: 42-21UYC/S530-A4

ELECTRO-OPTICAL CHARACTERISTICS (T_A=25°C)

Parameter	Test Condition	Symbol	Value	Unit
Viewing angle at 50% I _v	I _F =10mA	2 θ 1/2	30	Deg
Forward voltage (Typ.)	I _F =20mA	V _F	2.0	V
(Max.)			2.4	
Luminous intensity (Min.)	I _F =20mA	I _v	310	mcd
(Typ.)			470	
Wavelength	I _F =20mA	λ p	591	nm
		λ d	589	
Spectral Line Half-Width	I _F =20mA	△λ	15	nm
Peak pulsing current (1/10 duty f=1kHz)		I _{FP}	160	mA

Absolute maximum ratings (T_A=25°C)

Parameter	Symbol	Value	Unit
Forward current	I _F	25	mA
Reverse voltage	V _R	5	V
Reverse current	I _R	25	μA
Power Dissipation	P _D	60	mW
Operating temperature range	Top	-40 ~+85	°C
Storage temperature range	Tstg	-40 ~+90	°C

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Test items and results of reliability

Type	Test Item	REF. Standard	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	JIS C 7021 (1977)A-4	$-20^{\circ}\text{C} \Rightarrow 25^{\circ}\text{C} \Rightarrow 80^{\circ}\text{C} \Rightarrow 25^{\circ}\text{C}$ 30mins, 5mins, 30mins, 5mins	100 cycle	0/100
	Thermal Shock	MIL-STD-107D	$-20^{\circ}\text{C} \Rightarrow 80^{\circ}\text{C}$ 15mins, 15mins	100 cycle	0/100
	High Humidity Heat Cycle	JIS C 7021 (1977)A-5	$30^{\circ}\text{C} \Rightarrow 65^{\circ}\text{C}$ 90%RH 24hrs/1cycle	10 cycle	0/100
	High Temperature Storage	JIS C 7021 (1977)B-10	$T_a=80^{\circ}\text{C}$	1000 hrs	0/100
	Humidity Heat Storage	JIS C 7021 (1977)B-11	$T_a=60^{\circ}\text{C}$ RH=90%	1000 hrs	0/100
	Low Temperature Storage	JIS C 7021 (1977)B-12	$T_a=-30^{\circ}\text{C}$	1000 hrs	0/100
Operation Sequence	Life Test	JIS C 7035 (1985)	$T_a=25^{\circ}\text{C}$ $I_F=20\text{mA}$	1000 hrs	0/100
	High Humidity Heat Life Test	*	60°C RH=90% $I_F=20\text{mA}$	500 hrs	0/100
	Low Temperature Life Test	*	$T_a=-20^{\circ}\text{C}$ $I_F=20\text{mA}$	1000 hrs	0/100

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

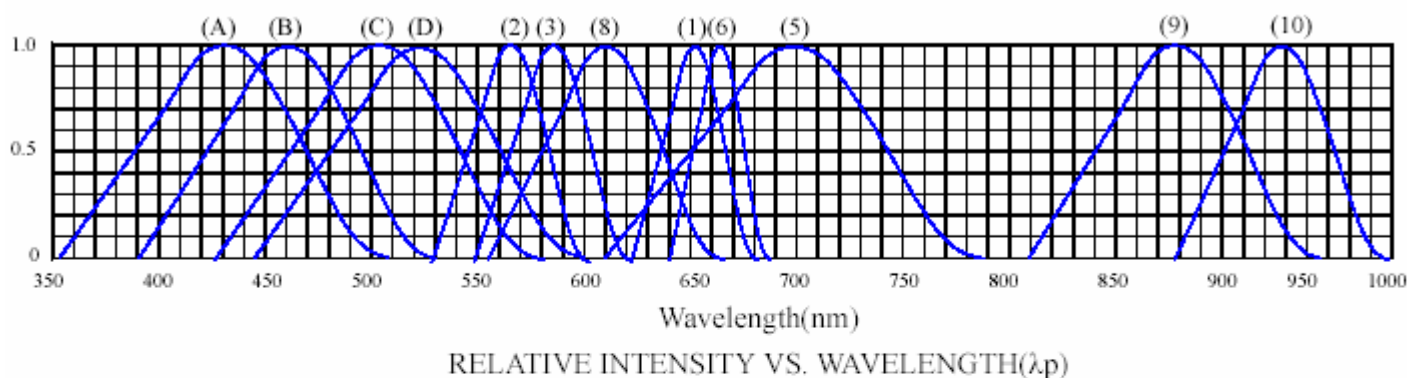
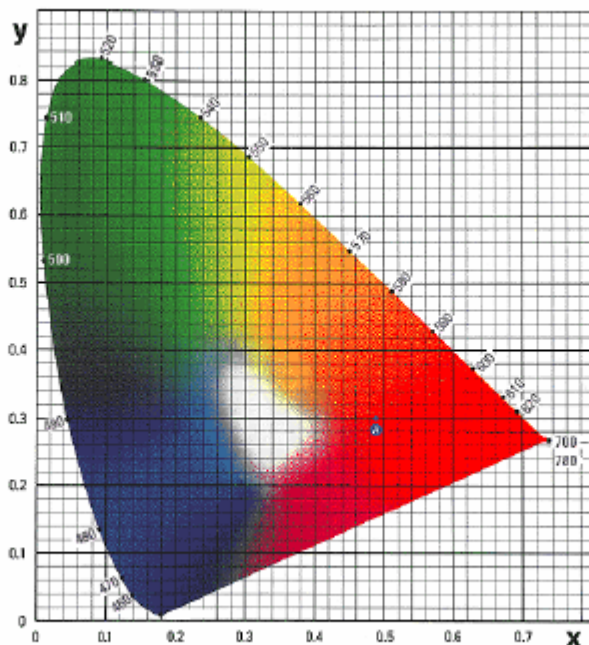
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SURFACE MOUNT LED LAMPS

Part Number: 42-21UYC/S530-A4

Typical Electro-Optical Characteristics

◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



- (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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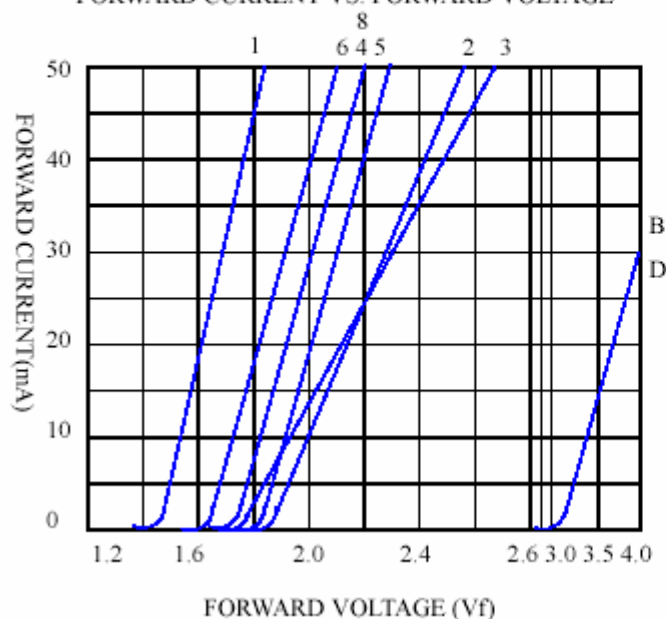
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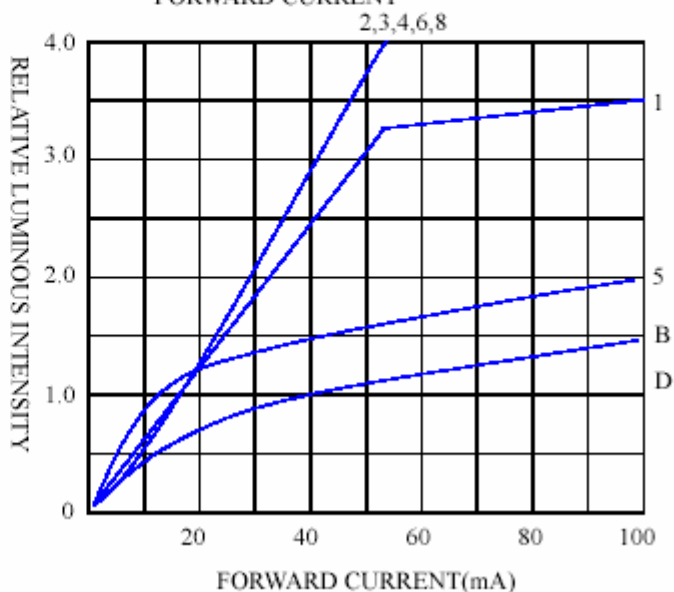
Typical Electro-Optical Characteristics

◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

