



MODEL NO: 12-22 SURSYGC/S530-A2/TR8 Device Number : DSE-122-001 REV. 1.0

Right Angle Lens Chip LEDs with Bi-Color(Multi-Color)

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Features :

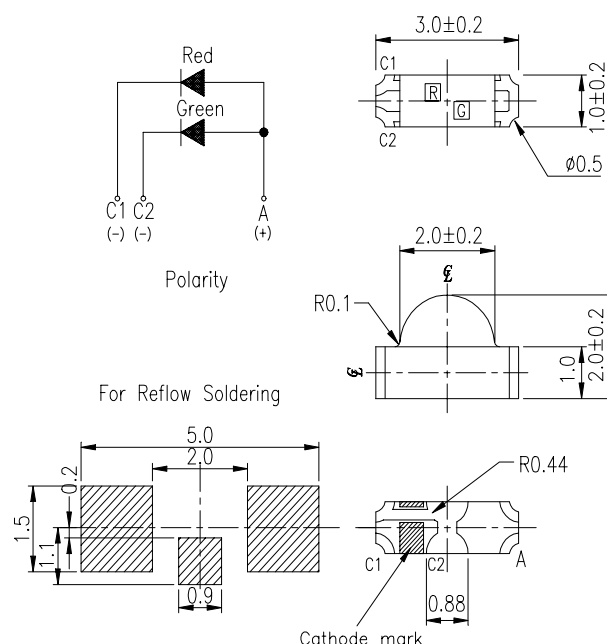
- Package in 8mm tape on 7" diameter reel .
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflows solder process.
- Multi-color type.

Descriptions :

- The 12-22 SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, light Weight makes them ideal for miniature applications, etc.

Applications :

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.

Package Dimensions :**Notes :**

Tolerances Unless Dimension \pm
0.1mm
Angle $\pm 0.5^\circ$ Unit=mm

PART NO	Chip		Lens Color
	Material	Emitted Color	
12-22SURSYGC/S530-A2/TR8	SUR: AlGaInP	Hyper Red	Water Clear
	SYG: AlGaInP	Super Yellow Green	

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<http://www.everlight.com>



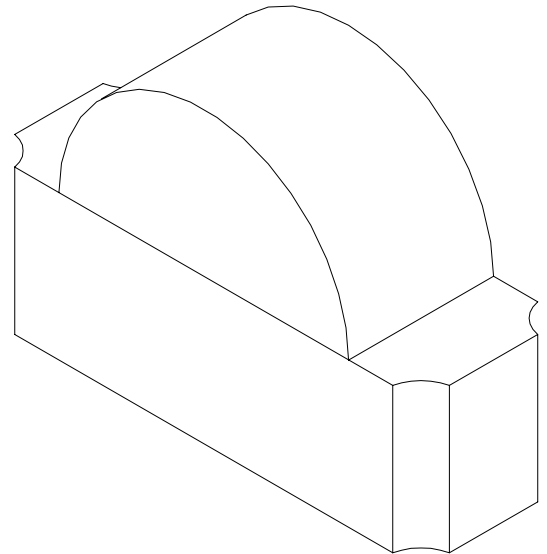
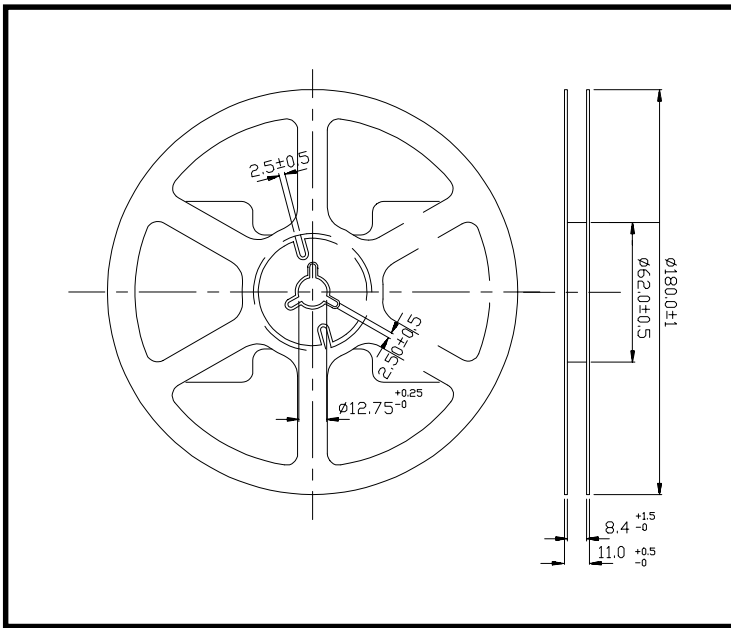
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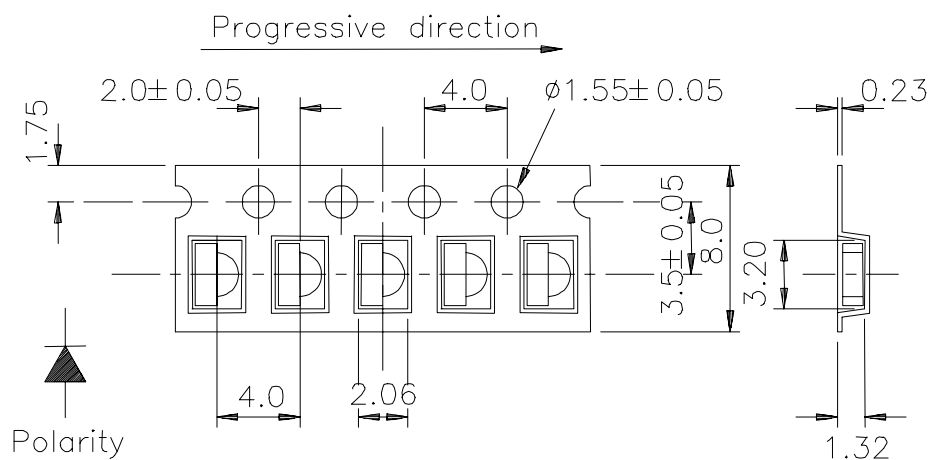
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■ Package Dimensions :



■ Loaded quantity per reel 2000 pcs/reel :



TOLERANCES UNLESS DIMENSION ± 0.1
ANGLE ± 0.5
UNIT:mm
SCALE:3=1



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Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Rating	Unit
Reverse Voltage	Vr	5	V
Forward Current	If	SUR: 25 SYG: 25	mA
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +90	°C
Soldering Temperature	Tsol	260 (for 5 second)	°C
Power Dissipation	Pd	SUR: 60 SYG: 60	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	If(Peak)	SUR: 160 SYG: 160	mA

Reliability Test Item And Condition

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 SEC	76 Pcs	0/1
2	Temperature Cycle	H : +85°C 30min ∩ 5 min L : -55°C 30min	50 CYCLE	76 Pcs	0/1
3	Thermal Shock	H : +100°C 5min ∩ 10 sec L : -10°C 5min	50 CYCLE	76 Pcs	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 Pcs	0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 Pcs	0/1
6	DC Operating Life	If = 20 m A	1000 HRS	76 Pcs	0/1
7	High Temperature / High Humidity	85°C/85% RH	1000 HRS	76 Pcs	0/1



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■ **Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	I _v SUR: SYG:	19 13	46 19	-----	mcd	If=20mA
Viewing Angle	2 θ 1/2	-----	120	-----	deg	If=20mA
Peak Wavelength	λ p SUR: SYG:	-----	632 575	-----	nm	If=20mA
Dominant Wavelength	λ d SUR: SYG:	-----	624 573	-----	nm	If=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$ SUR: SYG:	-----	20 20	-----	nm	If=20mA
Forward Voltage	V _f SUR: SYG:	-----	2.0 2.0	2.4 2.4	V	If=20mA
Reverse Current	I _r	-----	-----	10	μ A	V _r =5V



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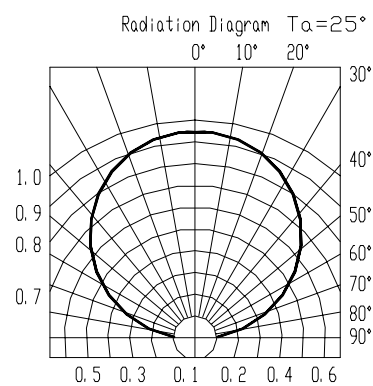
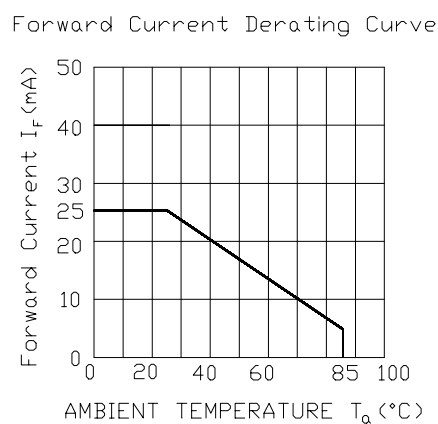
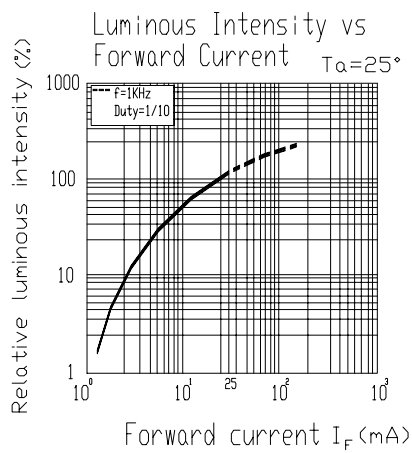
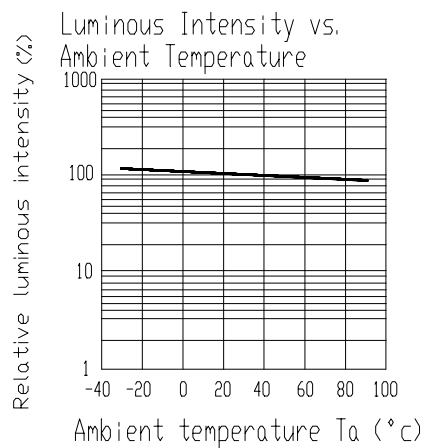
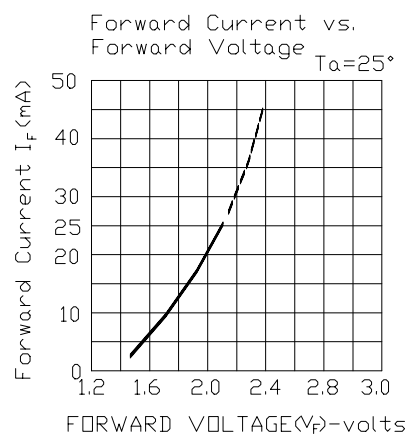
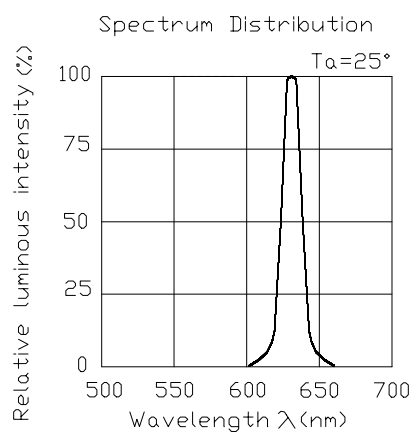
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Typical Electro-Optical Characteristic Curves

SUR





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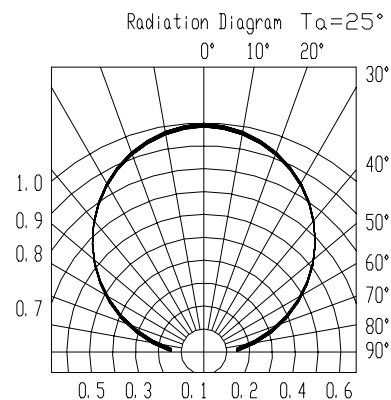
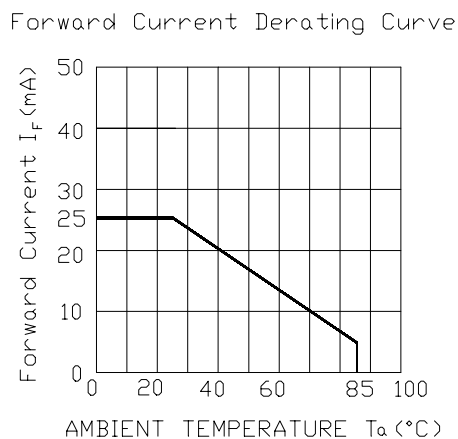
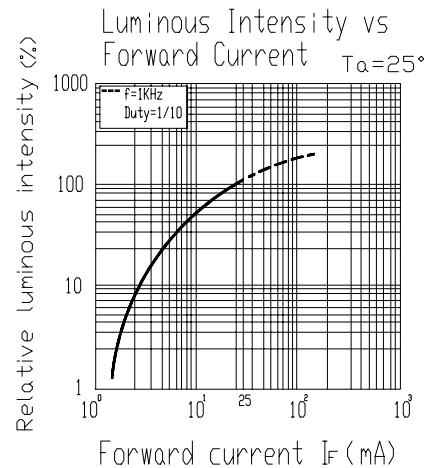
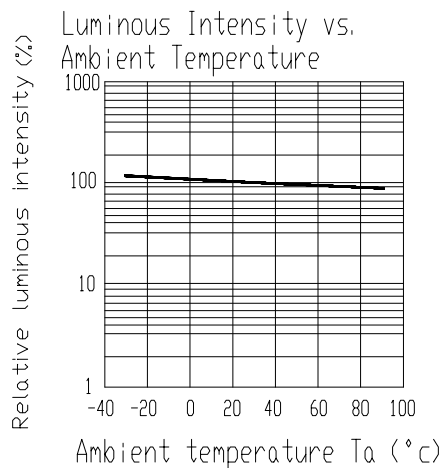
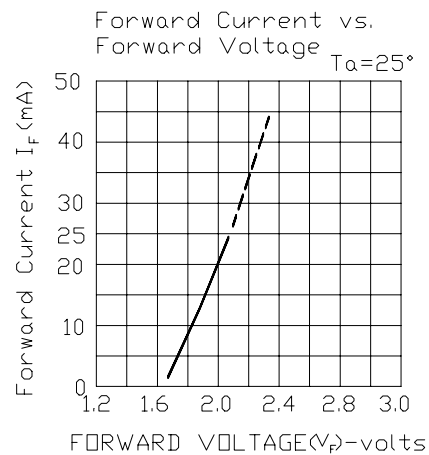
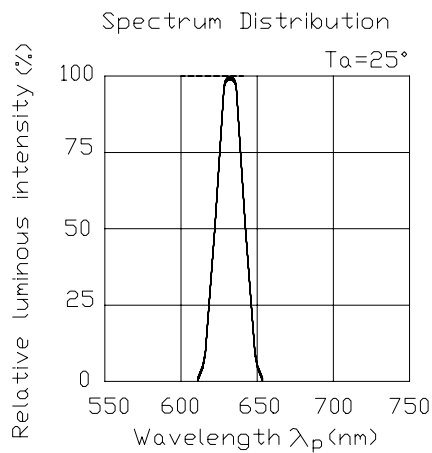
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Typical Electro-Optical Characteristic Curves

SYG





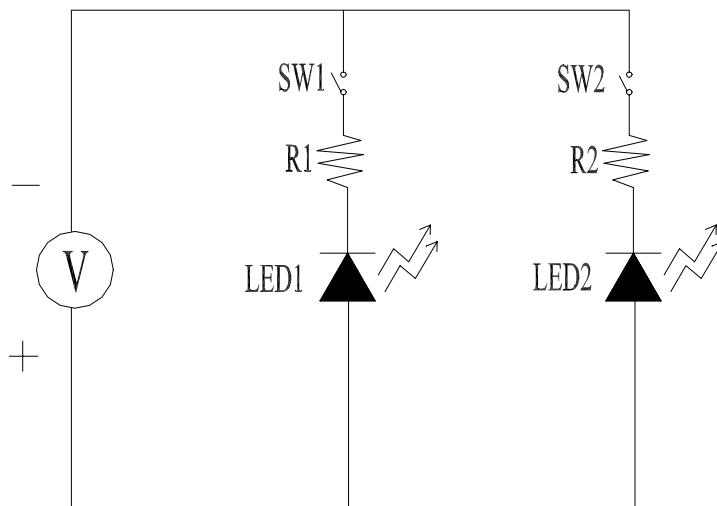
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■ Test Circuit



■ 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 time

2.1 The operation of temperature and R.H. are : $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, R.H.60%.

2.2 Once the package is opened , the products should be used within a week.

Otherwise , they should be keep in a damp proof box with desiccants.

Considering the tape life , we suggest our customers to use our products within a year(from production date).

2.3 If opened more than one week in an atmosphere $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, R.H.60%, they should be treated at $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 15hrs.

2.4 When you discover that the desiccant in the package has a pink color (normal=blue) , you should treat them in the same conditions as 2.3.



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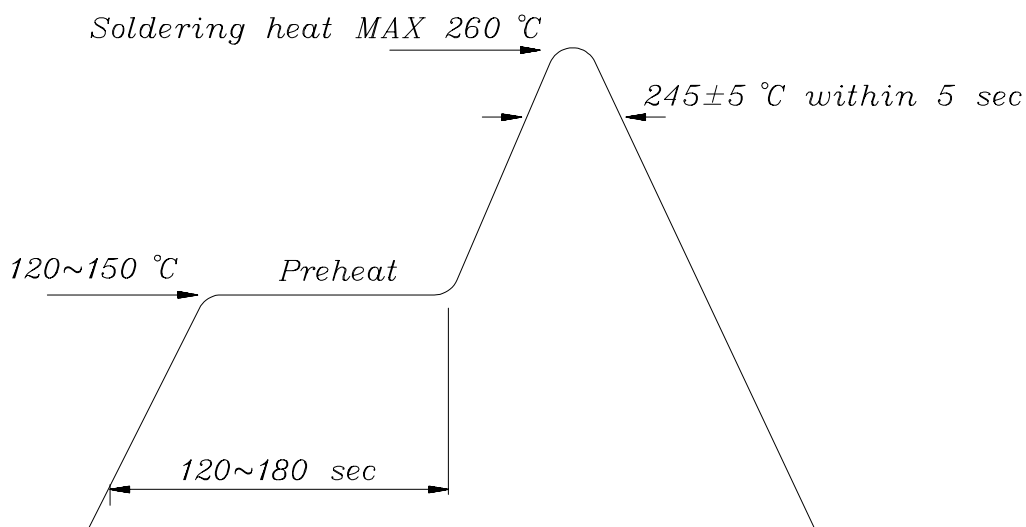
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■ Soldering heat reliability (DIP)

Please refer to the following figure :

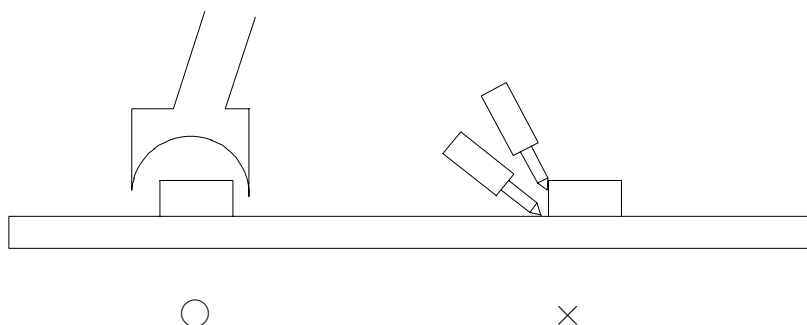


■ Soldering Iron

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

■ Rework

1. Customer must finish rework within 5 sec under 260°C .
2. Copper foil can not be touched by the head of iron.
3. Twin-head type is preferred.





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■ Reflow Temp / Time :

