



# Technical Data Sheet

## Chip LED with Bi-Color(Multi-Color)

### 19-22SURSYGC/S530-A3/E3/TR8

#### Features

- Package in 8mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Multicolor type.
- Pb Free
- The product itself will remain within RoHS compliant version.



#### Descriptions

- The 19-22 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, lightweight makes them ideal for miniature applications. etc.

#### Applications

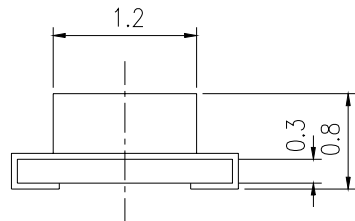
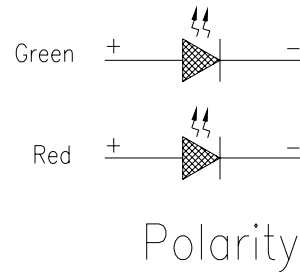
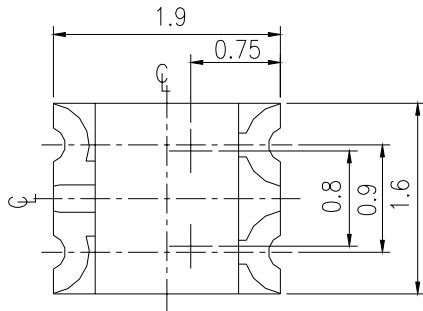
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.

#### Device Selection Guide

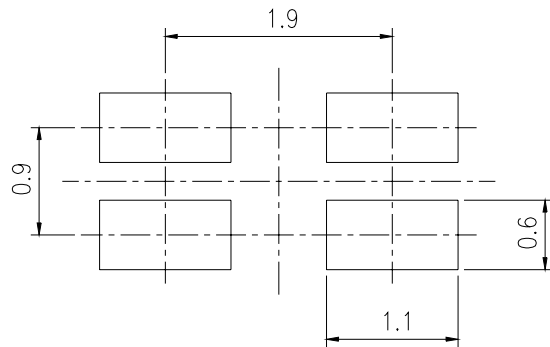
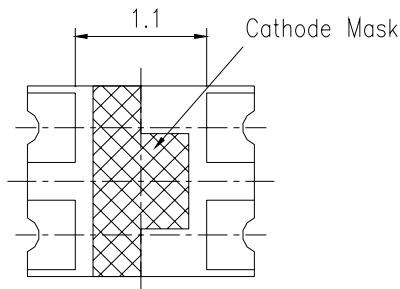
Chip			Lens Color
Type	Material	Emitted Color	
SUR	AlGaInP	Hyper-Red	Water Clear
SYG	AlGaInP	Super Yellow Green	

**19-22SURSYGC/S530-A3/E3/TR8**

**Package Outline Dimensions**



For reflow soldering



**Note:** Tolerances Unless Dimension  $\pm 0.1\text{mm}$  , Angle  $\pm 0.5^\circ$  , Unit = mm

**19-22SURSYGC/S530-A3/E3/TR8**
**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
Forward Current	I <sub>F</sub>	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
Electrostatic Discharge	ESD	2000	V
Power Dissipation	Pd	SUR:60 SYG:60	mW
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>F</sub>	SUR:60 SYG:60	mA

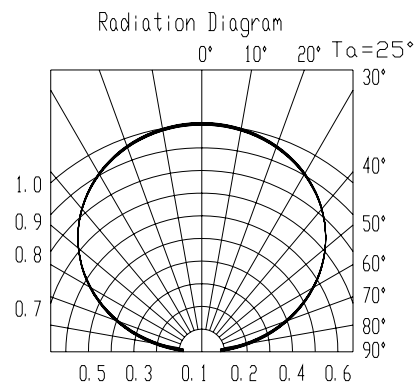
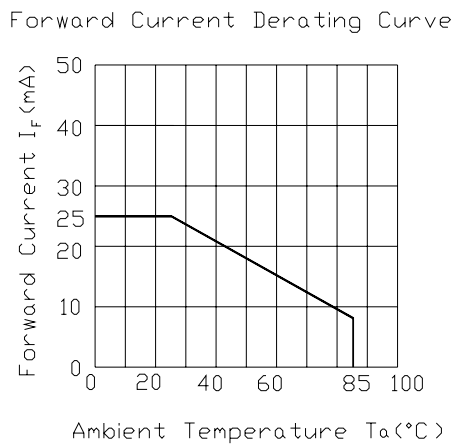
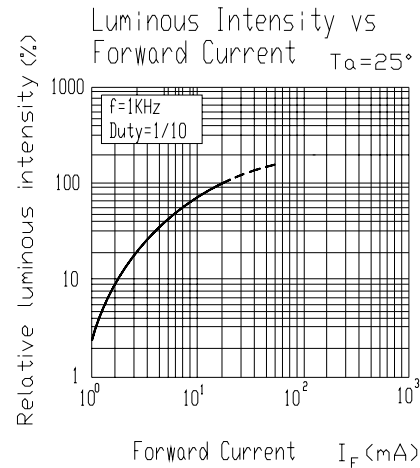
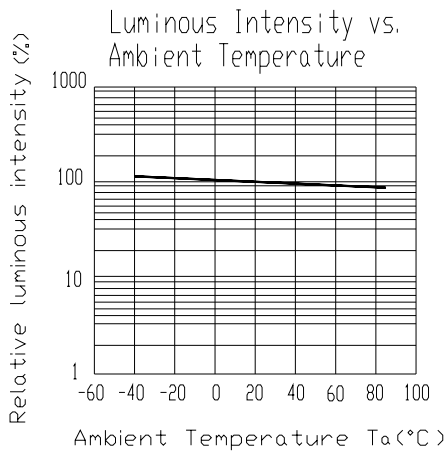
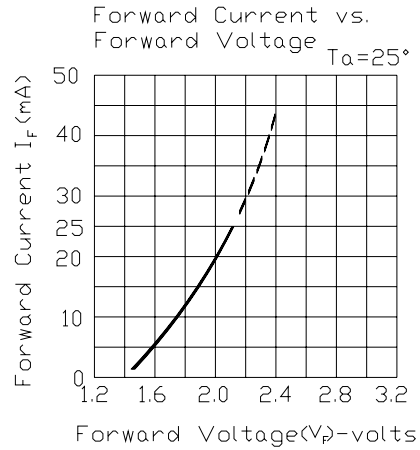
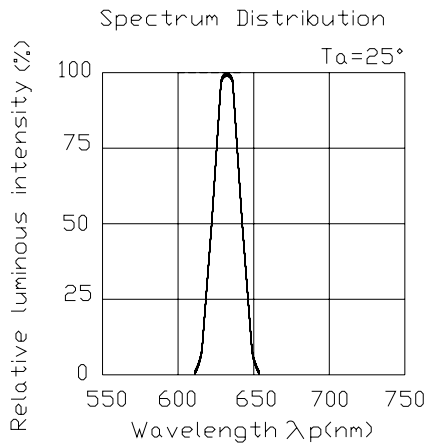
**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub> SUR	37	56	-----	mcd	I <sub>F</sub> =20mA
	SYG	21	29	-----		
Viewing Angle	2θ 1/2	-----	130	-----	deg	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub> SUR	-----	632	-----	nm	I <sub>F</sub> =20mA
	SYG	-----	575	-----		
Dominant Wavelength	λ <sub>d</sub> SUR	-----	624	-----	nm	I <sub>F</sub> =20mA
	SYG	-----	573	-----		
Spectrum Radiation Bandwidth	Δλ SUR	-----	20	-----	nm	I <sub>F</sub> =20mA
	SYG	-----	20	-----		
Forward Voltage	V <sub>F</sub>	-----	2.0	2.4	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub> SUR SYG	-----	-----	10	μA	V <sub>R</sub> =5V

**19-22SURSYGC/S530-A3/E3/TR8**

**Typical Electro-Optical Characteristics Curves**

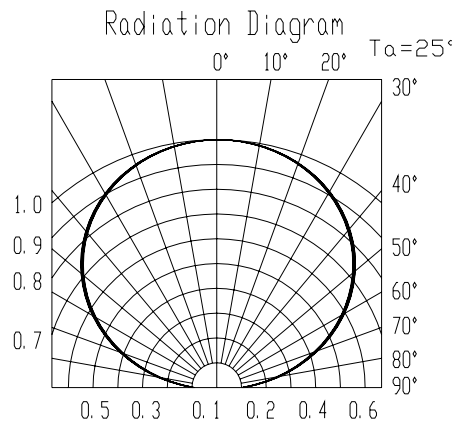
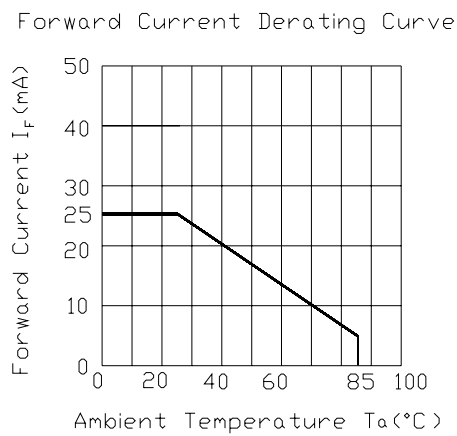
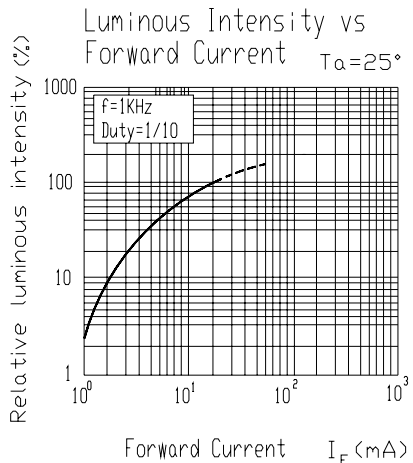
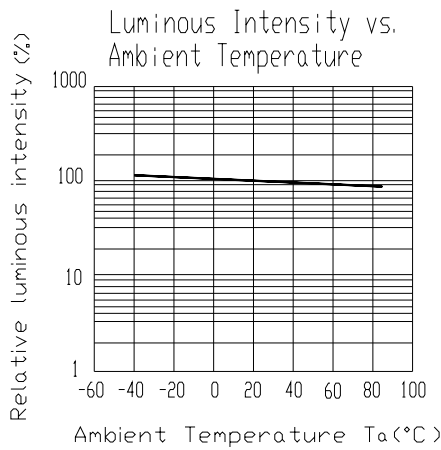
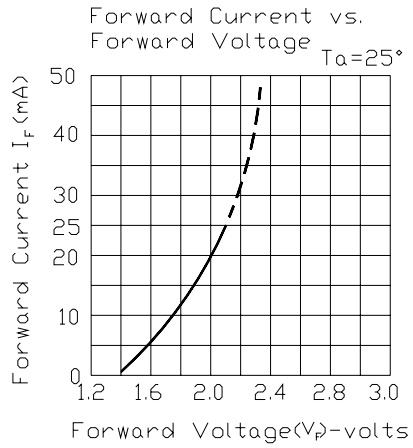
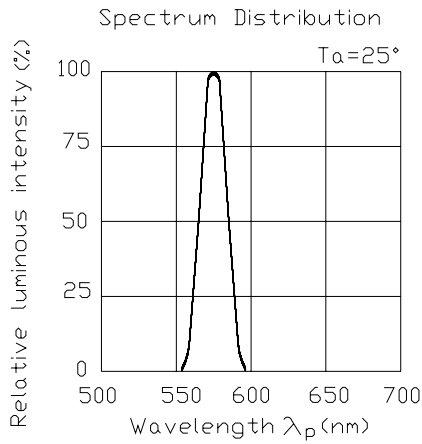
**SUR**



**19-22SURSYGC/S530-A3/E3/TR8**

**Typical Electro-Optical Characteristics Curves**

**SYG**





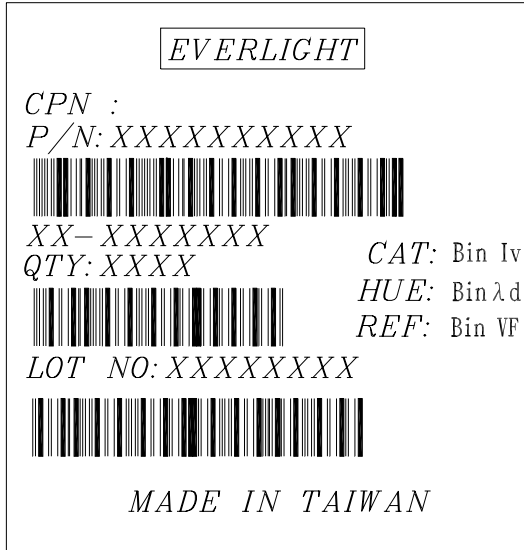
**19-22SURSYGC/S530-A3/E3/TR8**

**Label explanation**

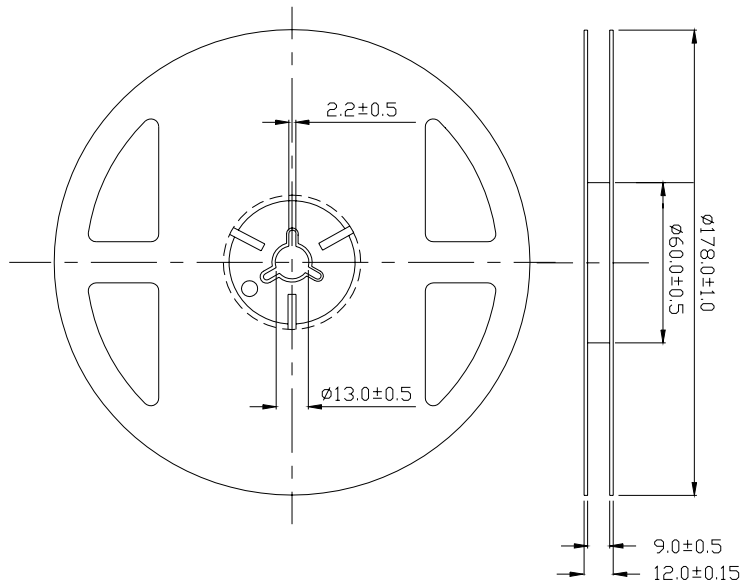
**CAT: Luminous Intensity (mcd)**

**HUE: Dom. Wavelength (nm)**

**REF: Forward Voltage (V)**



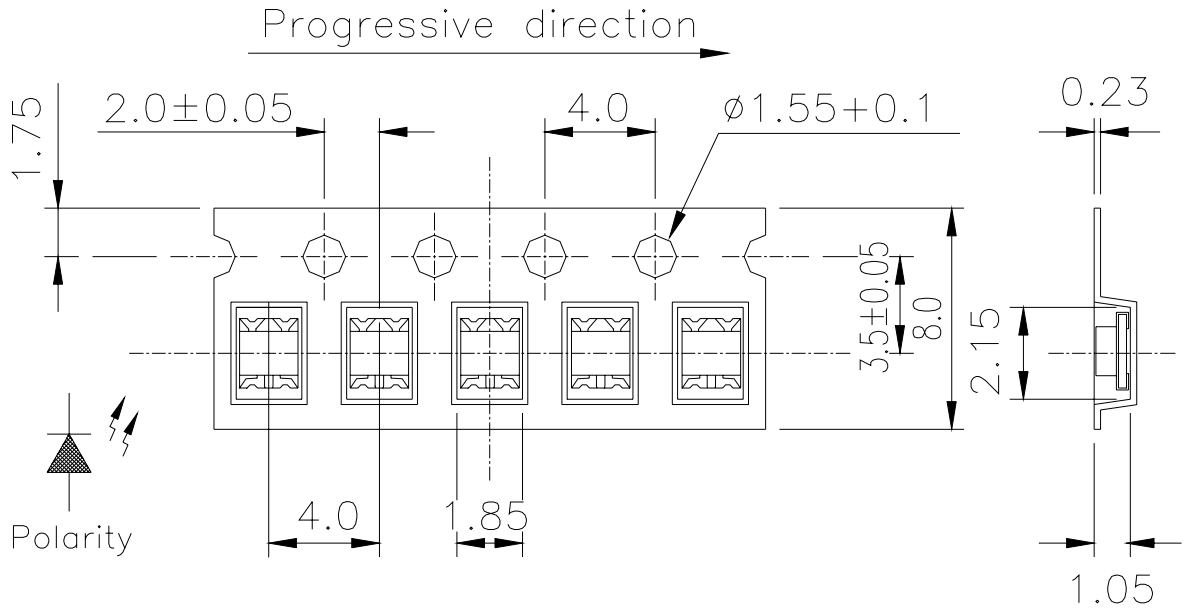
**Reel Dimensions**



**Note:** Tolerances Unless Dimension  $\pm 0.1\text{mm}$  , Angle  $\pm 0.5^\circ$  ,Unit = mm

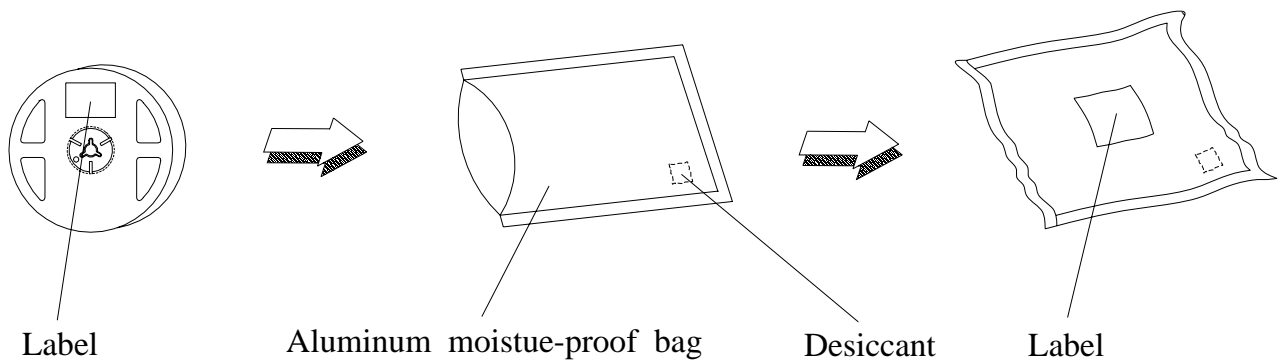
**19-22SURSYGC/S530-A3/E3/TR8**

**Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel**



**Note:** Tolerances Unless Dimension  $\pm 0.1\text{mm}$  , Angle  $\pm 0.5^\circ$  ,Unit = mm

**Moisture Resistant Packaging**



**19-22SURSYGC/S530-A3/E3/TR8****Reliability Test Items And Conditions**

The reliability of products shall be satisfied with items listed below.

Confidence level : 90 %

LTPD : 10 %

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow	Temp. : 240°C ±5°C Min. 5 sec.	6 min.	22 Pcs.	0/1
2	Temperature Cycle	H : +100°C 15 min. ∫ 5 min. L : -40°C 15 min.	300 Cycles	22 Pcs.	0/1
3	Thermal Shock	H : +100°C 5 min. ∫ 10 sec. L : -10°C 5 min.	300 Cycles	22 Pcs.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 Pcs.	0/1
5	Low Temperature Storage	Temp. : -55°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/RH 85%	1000 Hrs.	22 Pcs.	0/1



**19-22SURSYGC/S530-A3/E3/TR8**

**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 RH are : 5°C~35°C , RH60%.

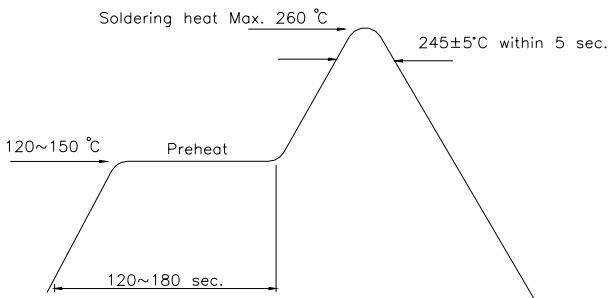
2.2 Once the package is opened, the products should be used within a week.

Otherwise, they should be kept in a damp proof box with descanting agent.

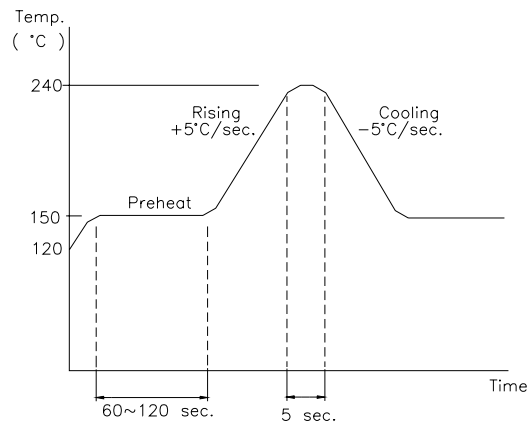
Considering the tape life , we suggest our customers to use our products within a year(from production date).

2.3 If opened more than one week in an atmosphere 5°C~35°C , RH 60%, they should be treated at 60°C±5°C for 15hrs.

**Soldering heat**



**Reflow Temp / Time**

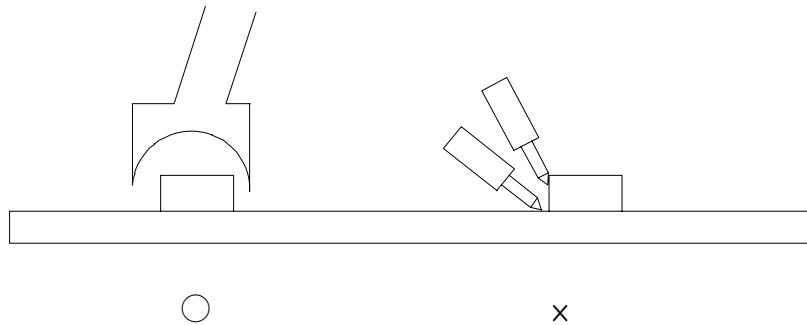


**Soldering Iron**

Basic spec is  $\leq 5$  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 .

**19-22SURSYGC/S530-A3/E3/TR8****Rework**

1. Customer must finish rework within 5 sec under 245°C.
2. The head of iron can not touch copper foil.
3. Twin-head type is preferred.

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