



Technical Data Sheet

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

12-22SURSUGC/S530-A3/A4/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.

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, 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.



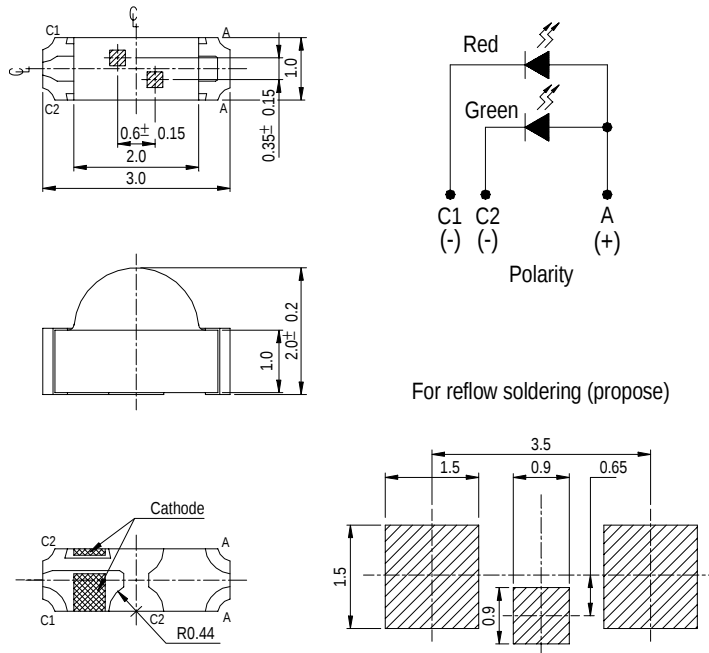
Device Selection Guide

Chip			Lens Color
Type	Material	Emitted Color	
SUR	AlGaInP	Hyper Red	Water Clear
SUG	InGaN	Super Green	

B91010457

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Package Outline Dimensions



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

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	SUR:25 SUG:30	mA
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40~ +90	°C
Soldering Temperature	T_{sol}	260 (for 5 second)	°C
Electrostatic Discharge	ESD	SUR:2000 SUG:150	V
Power Dissipation	P_d	SUR:60 SUG:110	mW
Peak Forward Current (Duty 1/10 @1KHz)	I_F	SUR:160 SUG:100	mA

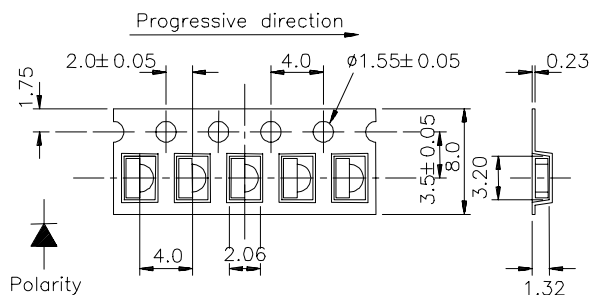
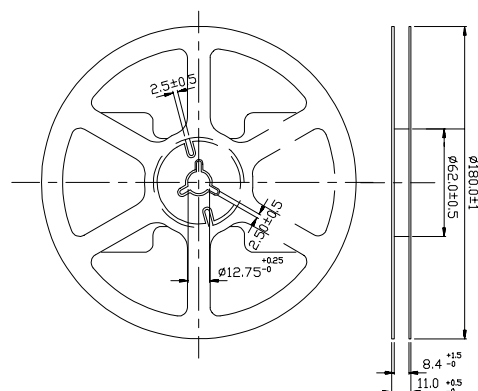
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Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v SUR SUG	45 100	68 210	----- -----	mcd	I _F =20mA
Viewing Angle	2 θ 1/2	-----	120	-----	deg	I _F =20mA
Peak Wavelength	λ _p SUR SUG	-----	632 518	-----	nm	I _F =20mA
Dominant Wavelength	λ _d SUR SUG	----- -----	624 525	----- -----	nm	I _F =20mA
Spectrum Radiation Bandwidth	△ λ SUR SUG	----- -----	20 35	-----	nm	I _F =20mA
Forward Voltage	V _F SUR SUG	----- -----	2.0 3.5	2.4 4.3	V	I _F =20mA
Reverse Current	I _R SUR SUG	----- -----	-----	10 50	μ A	V _R =5V

Reel & Carrier Tape Dimensions

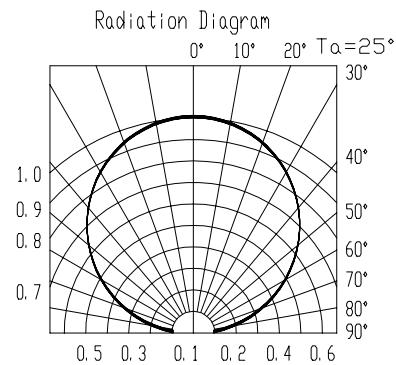
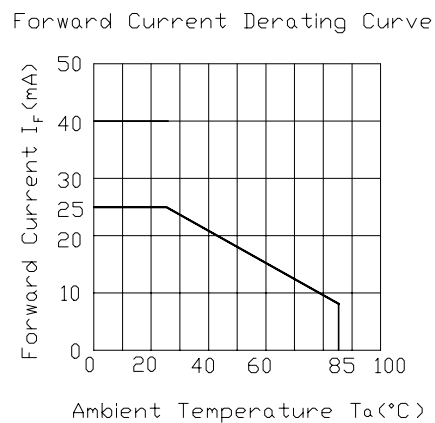
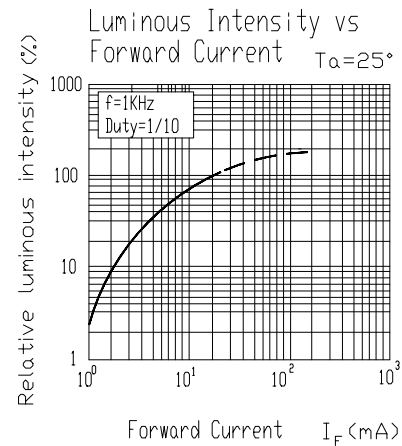
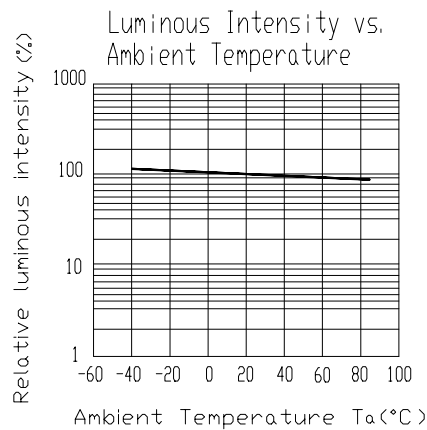
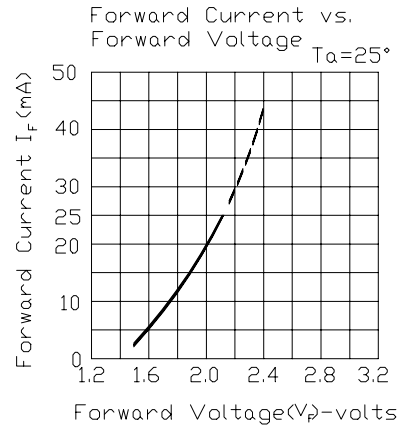
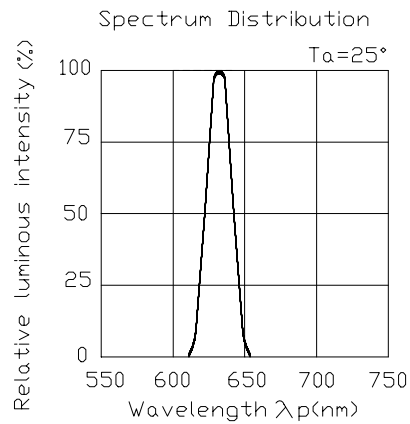
Loaded quantity per reel 2000 PCS/reel



Notes: Tolerances Unless Dimension ± 0.1mm , Angle± 0.5° ,Unit = mm

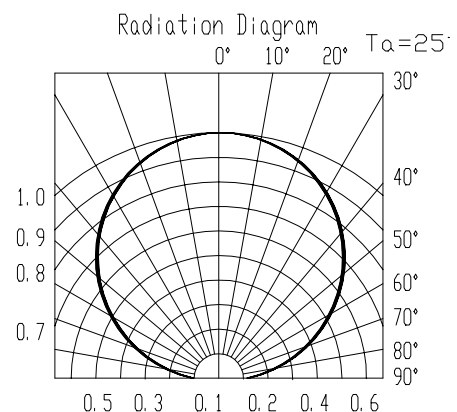
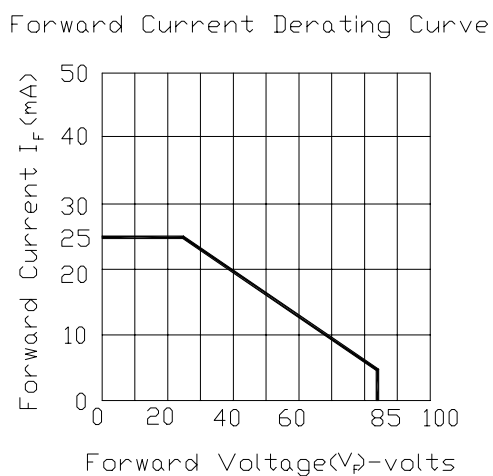
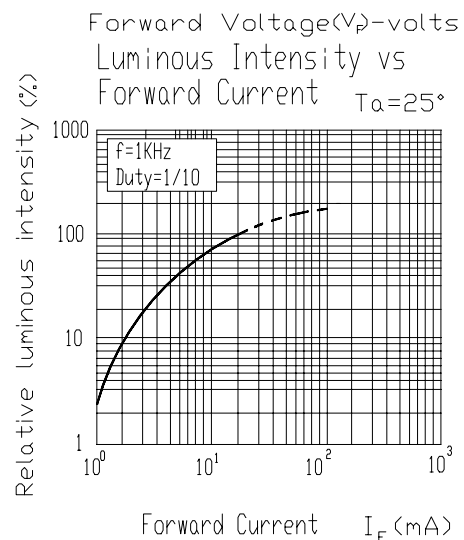
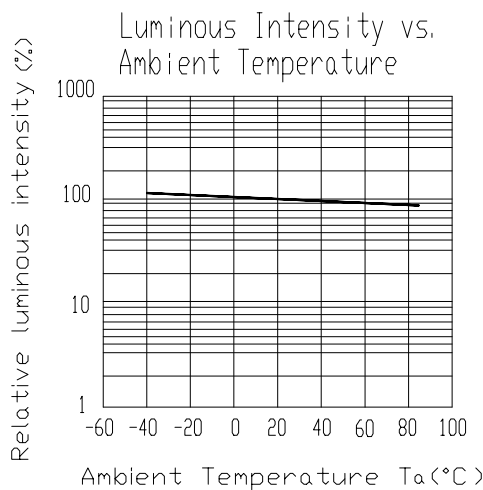
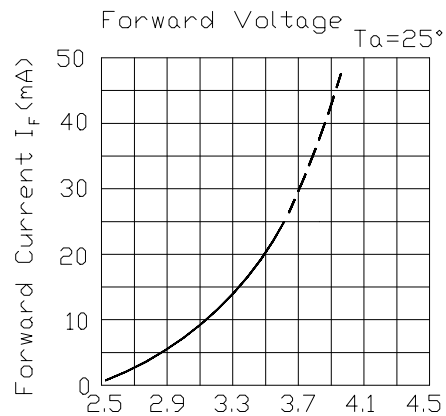
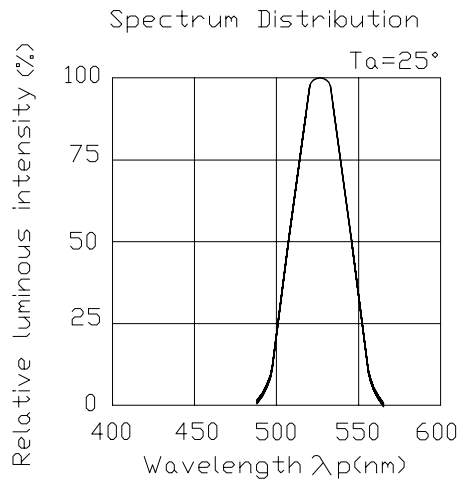
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Typical Electro-Optical Characteristics Curves SUR



12-22SURSUGC/S530-A3/A4/TR8

Typical Electro-Optical Characteristics Curves
SUG



12-22SURSUGC/S530-A3/A4/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/Rc
1	Reflow	Temp. : 240°C ± 5°C Min. 5 sec.	6 min.	22 Pcs.	0/1
2	Temperature Cycle	H : +85°C 30min. ∫ 5 min. L : -55°C 30min.	50 Cycles	22 Pcs.	0/1
3	Thermal Shock	H : +100°C 5min. ∫ 10 sec. L : -10°C 5min.	50 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	I _F = 20 mA	1000 Hrs.	22 Pcs.	0/1
7	High Temperature / High Humidity	85°C/R.H85%	1000 Hrs.	22 Pcs.	0/1

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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 : $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$, RH60%.

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

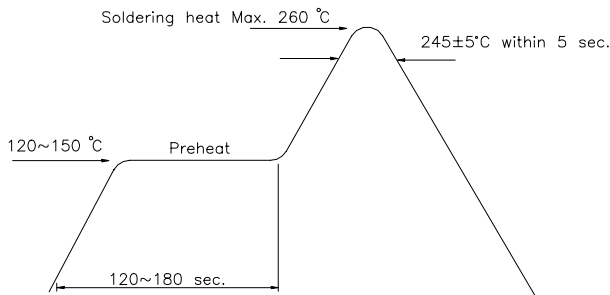
Otherwise, they should be kept in a damp proof box with descanting agent.

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

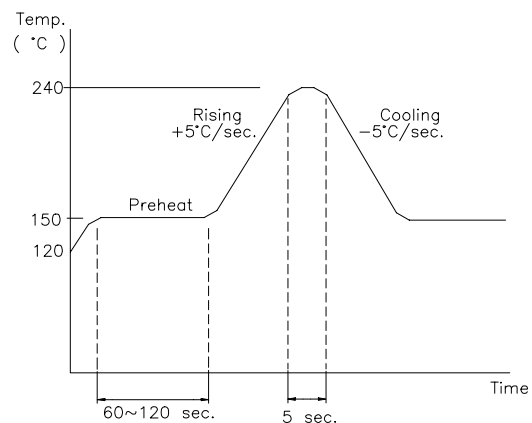
2.3 If opened more than one week in an atmosphere $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$, RH 60%, they should be treated at $60^{\circ}\text{C}\pm 5^{\circ}\text{C}$ for 15hrs.

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.

Soldering heat



Reflow Temp / Time



Soldering Iron

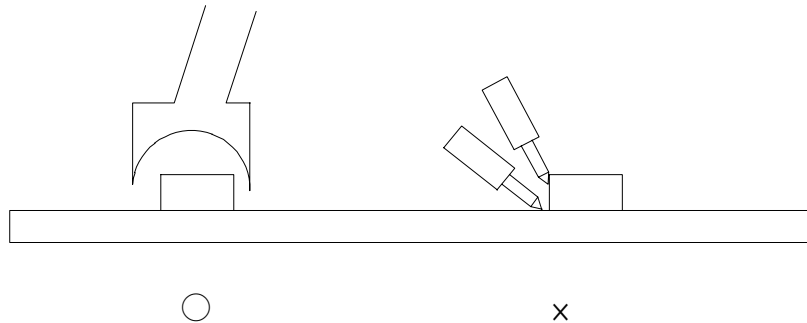
Basic spec is ≤ 5 sec when 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec}$).

Power dissipation of Iron should be smaller than 15 W , and temperature should be controllable.

Surface temperature of the device should be under 230°C .

12-22SURSUGC/S530-A3/A4/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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