



Technical Data Sheet

TOP LEDs

67-21SYGC/S530-E3/S605/TR8

Features

- P-LCC-2 package.
- White package.
- Optical indicator.
- Colorless clear window.
- Wide viewing angle.
- Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- Computable with automatic placement equipment.
- Available on tape and reel (8mm Tape).



Descriptions

- The 67-21 series is available in soft orange, green, blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the SMT TOP LED ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

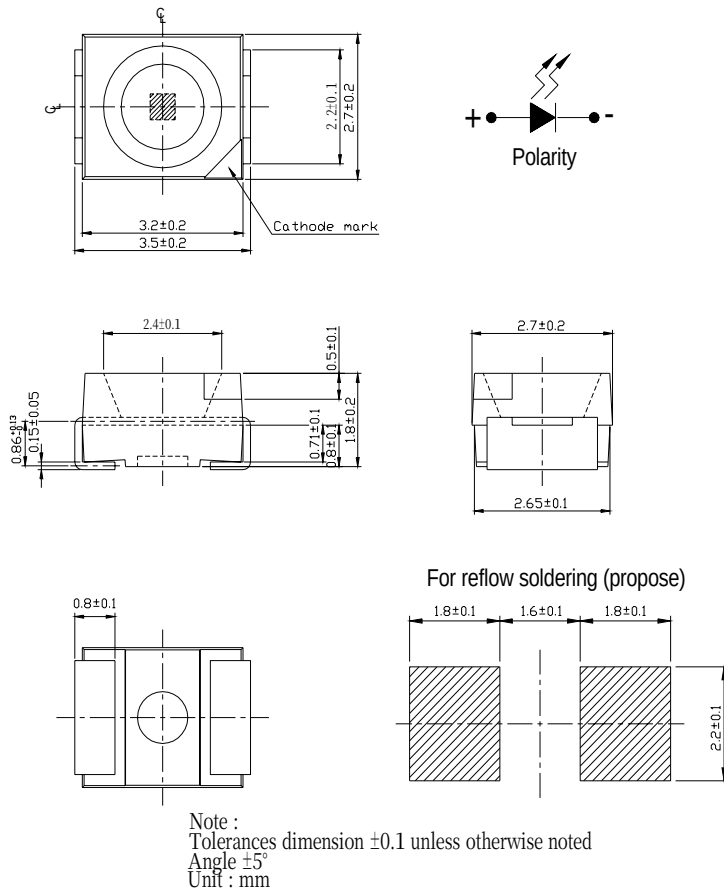
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- Light pipe application.
- General use.

Device Selection Guide

Chip		Lens Color
Material	Emitted Color	
AlGaInP	Super Yellow Green	Water Clear

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Package Dimensions



Absolute Maximum Ratings (Ta=25°C)

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

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Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	*Chip Rank	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	E3	32	-----	72	mcd	I _F =20mA
Viewing Angle	2 θ 1/2	-----	-----	120	-----	deg	I _F =20mA
Peak Wavelength	λ _p	-----	-----	575	-----	nm	I _F =20mA
Dominant Wavelength	λ _d	-----	568	-----	573	nm	I _F =20mA
Spectrum Radiation Bandwidth	△λ	-----	-----	20	-----	nm	I _F =20mA
Forward Voltage	V _F	-----	1.8	2.0	2.4	V	I _F =20mA
Reverse Current	I _R	-----	-----	-----	10	μ A	V _R =5V

Notice : 1. I_v tolerance=±10%

2. λ_d tolerance=±1nm

3. V_F tolerance=±0.1 voltage

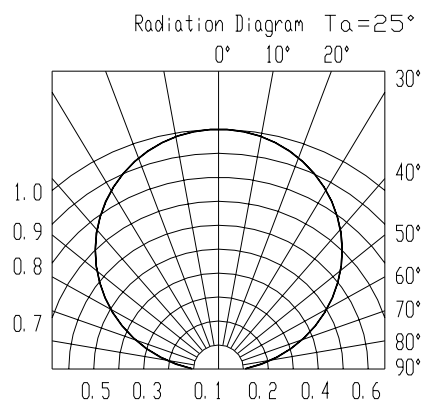
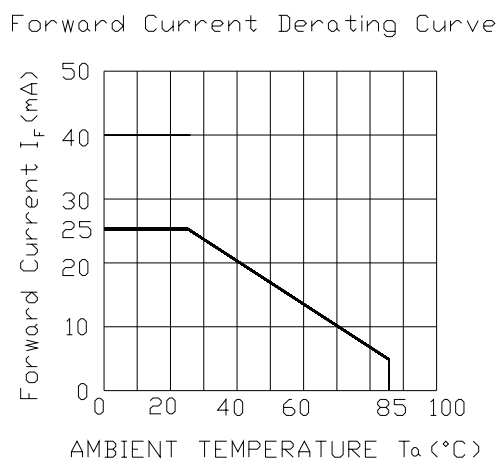
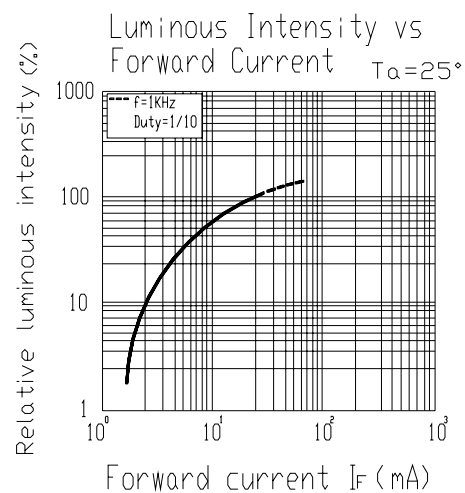
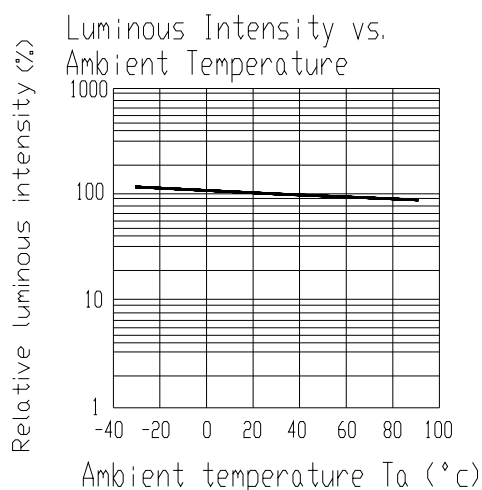
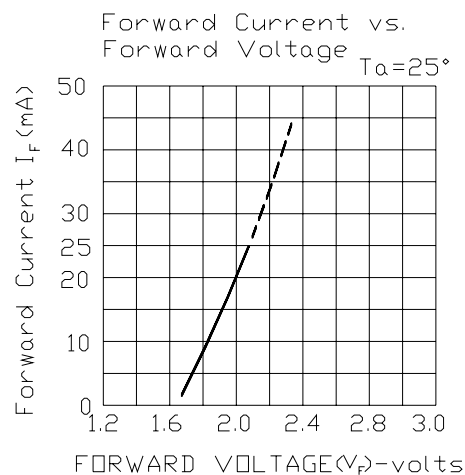
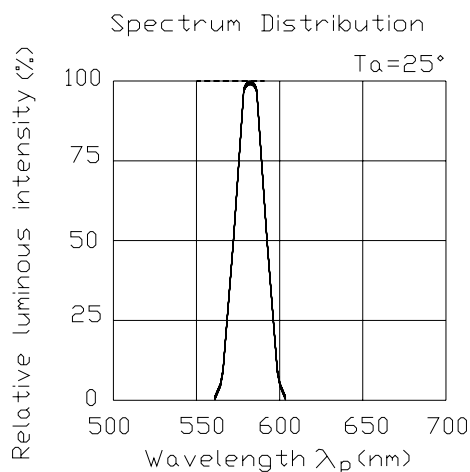
Rank	Dominant Wavelength special spec	
	Min.	Max.-
D1	568	571
D2	570	573

Rank	Luminous intensity special spec.	
	Min.	Max.-
N2	32.0	45.0
P1	45.0	57.0
P2	57.0	72.0

Rank	Forward current special spec.	
	Min.	Max.-
V1	1.80	2.00
V2	2.00	2.20
V3	2.20	2.40

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Typical Electro-Optical Characteristics Curves

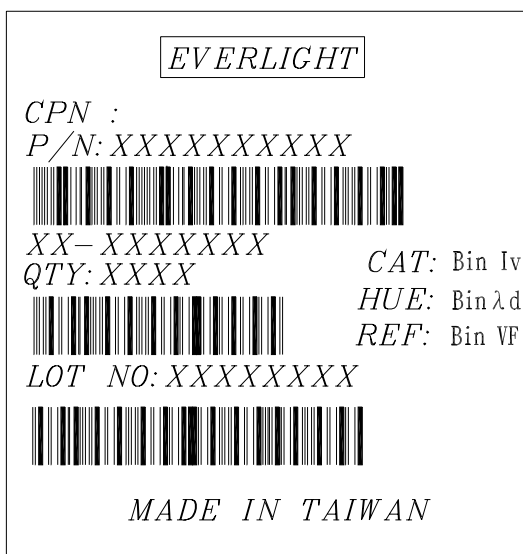


Label explanation

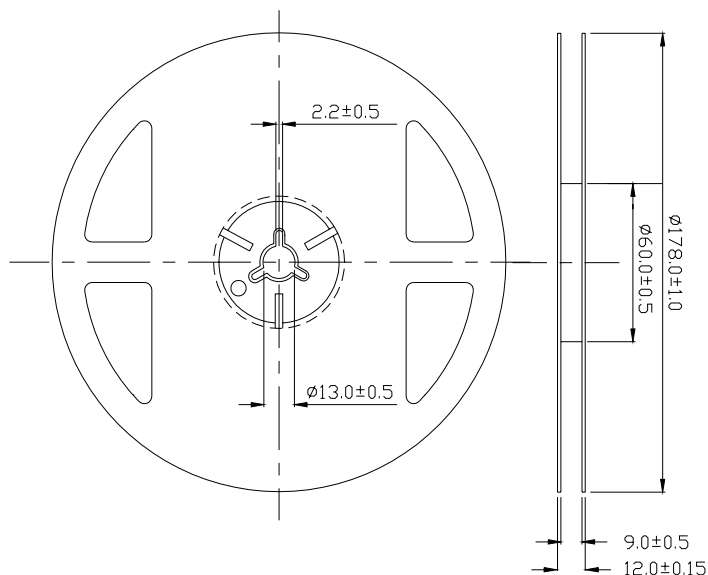
CAT: Luminous Intensity (mcd)

HUE: Dom. Wavelength (nm)

REF: Forward Voltage (V)



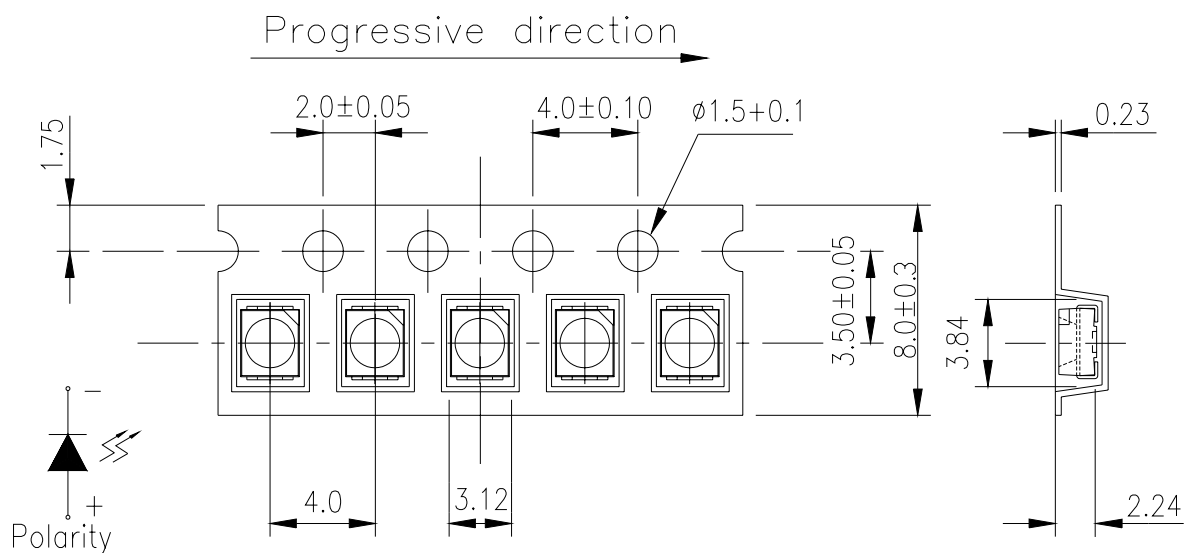
Reel Dimensions



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

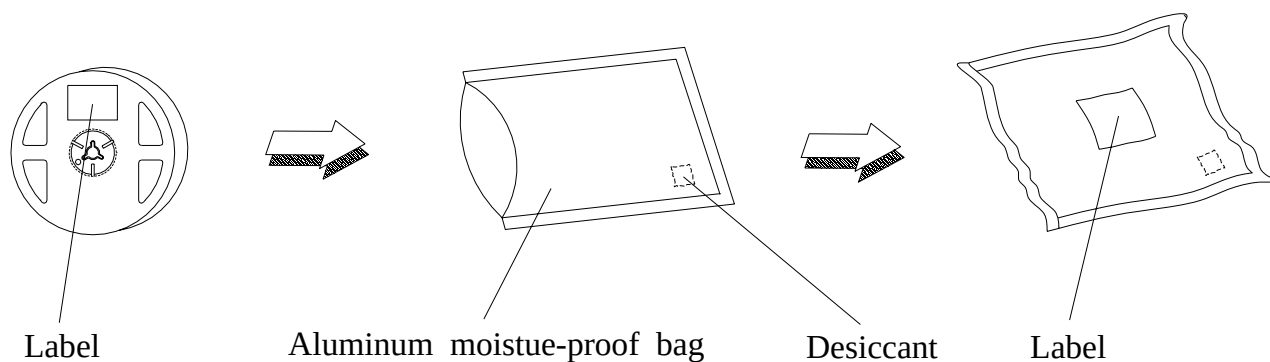
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■ **Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel**



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

■ **Moisture Resistant Packaging**



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 $\pm$ 5°C Min 5sec.	6 Min	22 PCS.	0/1
2	Temperature Cycle	H : +100°C 15min ∫ 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10 sec L : -10°C 5min	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	I _F = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C/RH85%	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.

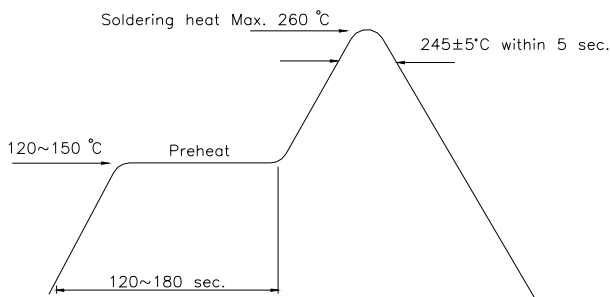
Otherwise, they should be kept in a damp proof box with descanting agent.

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

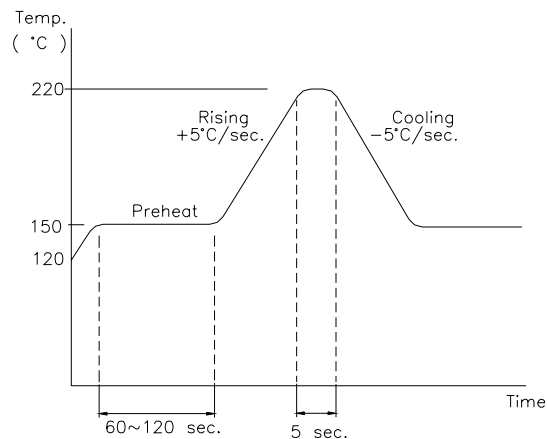
2.3 If opened more than one week in an atmosphere $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$, RH 60%, they should be treated at $60^{\circ}\text{C}\pm 5^{\circ}\text{C}$ for 12hrs.

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

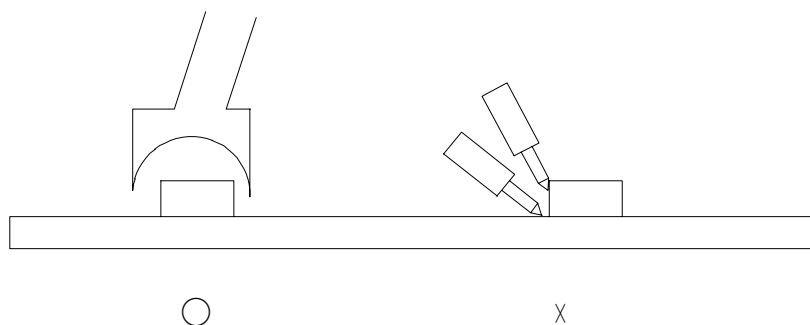


Soldering Iron

Basic spec is ≤ 5 sec when 245°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 .

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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