



PART NO.: 27-21SYGC/S530-E1/TR8

Device Number : DSE-271-004 REV. 1.0

Chip LEDs with Right Angle Lens

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Features :

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

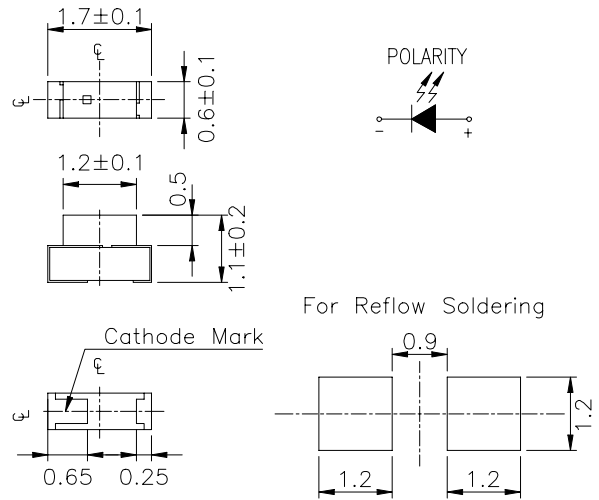
Descriptions :

- The 27-21 SMD Taping is much smaller than leaded 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.

Package Dimensions :



Notes :

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

| PART NO | Chip | | Lens Color |
|------------------------|----------|-----------------------|-------------|
| | Material | Emitted Color | |
| 27-21 SYGC/S530-E1/TR8 | AlGaInP | Super Yellow Green | Water Clear |

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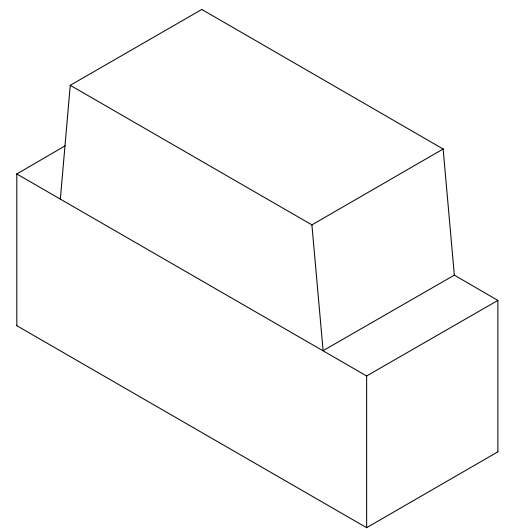
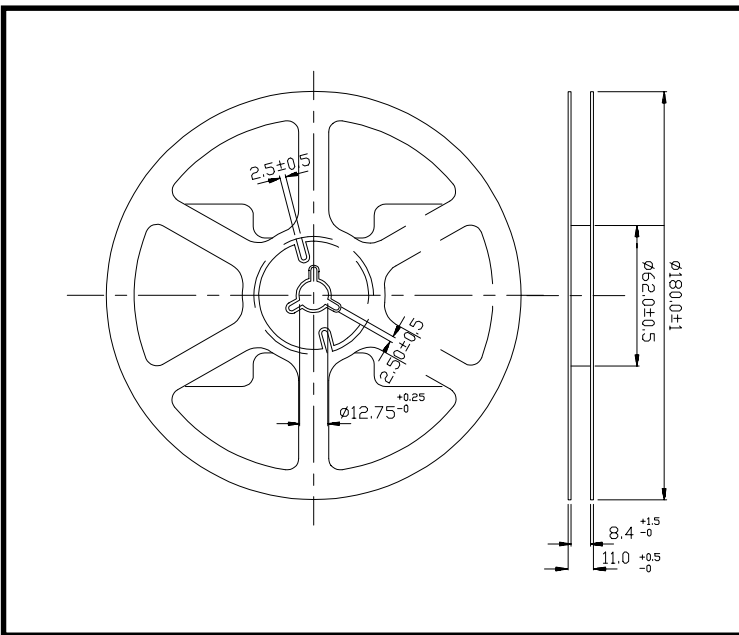
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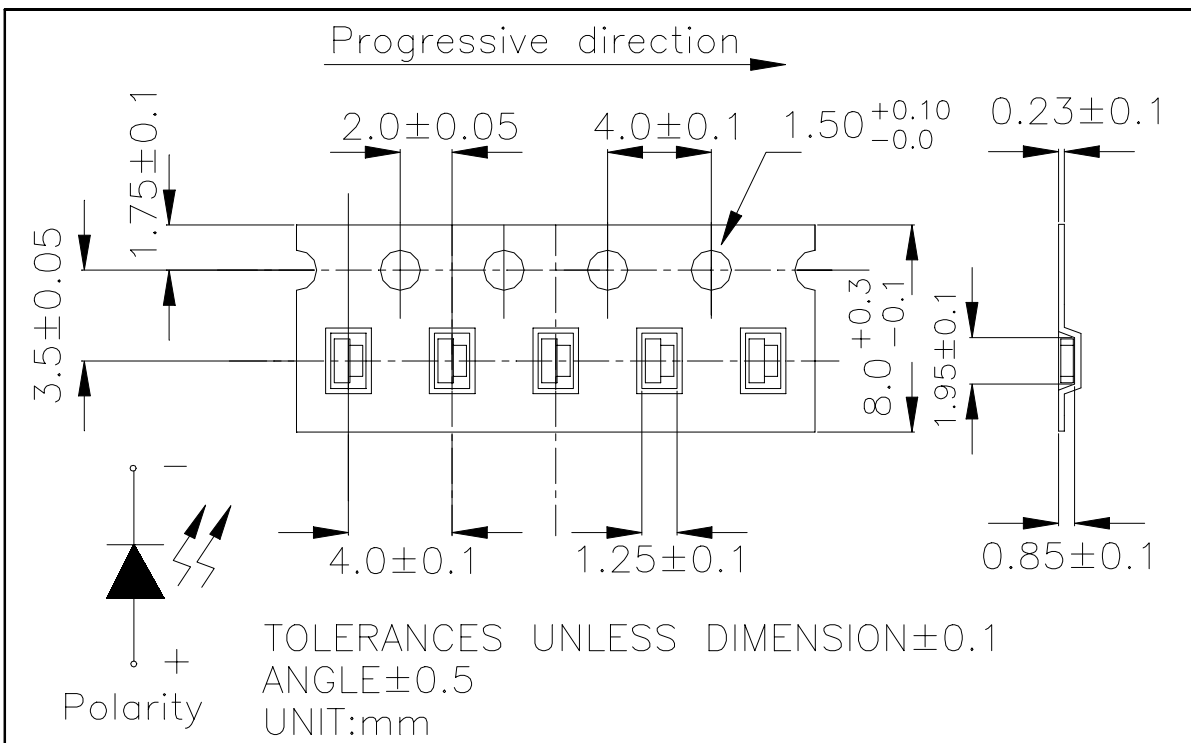
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■ Package Dimensions :



■ Loaded quantity per reel 3000 PCS/reel :





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■ **Absolute Maximum Ratings at 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 ~ +90 | °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 (Peak) | 160 | mA |

■ **Electronic Optical Characteristics :**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|----------------|-------|-------|-------|------|----------------------|
| Luminous Intensity | I _V | ----- | 1 | ----- | mcd | I _F =2mA |
| | | 10 | 15 | ----- | mcd | I _F =20mA |
| Viewing Angle | 2θ 1/2 | ----- | 130 | ----- | deg | I _F =20mA |
| Peak Wavelength | λ _p | ----- | 575 | ----- | nm | I _F =20mA |
| Dominant Wavelength | λ _d | ----- | 573 | ----- | nm | I _F =20mA |
| Spectrum Radiation Bandwidth | Δλ | ----- | 20 | ----- | nm | I _F =20mA |
| Forward Voltage | V _F | ----- | 2.0 | 2.4 | V | I _F =20mA |
| Reverse Current | I _R | ----- | ----- | 10 | μA | V _R =5V |



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■ Reliability Test Items And Conditions

| 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 CYCLES | 76 PCS | 0/1 |
| 3 | Thermal Shock | H : +100°C 5min. ∫ 10 sec. L : -10°C 5min. | 50 CYCLES | 76 PCS | 0/1 |
| 4 | High Temperature Storage | TEMP. : 100°C | 1000 HR. | 76 PCS | 0/1 |
| 5 | Low Temperature Storage | TEMP. : -55°C | 1000 HR. | 76 PCS | 0/1 |
| 6 | DC Operating Life | IF= 20 mA | 1000 HR. | 76 PCS | 0/1 |
| 7 | High Temperature / High Humidity | 85°C/RH85% | 1000 HR. | 76 PCS | 0/1 |



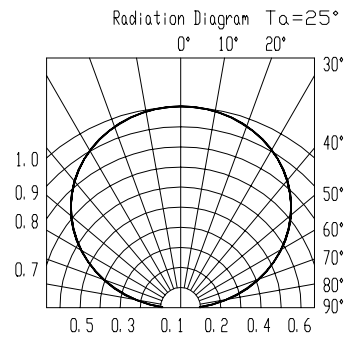
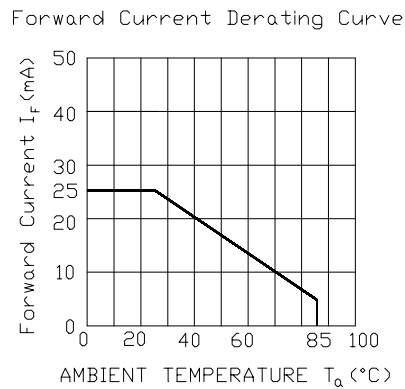
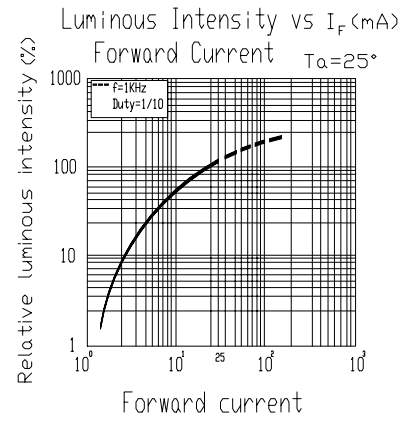
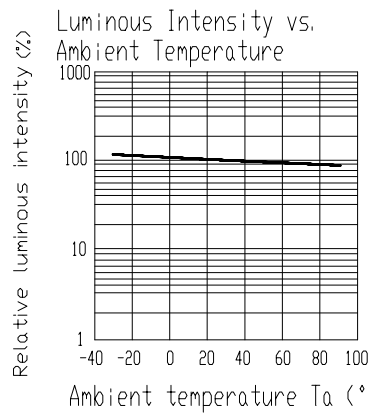
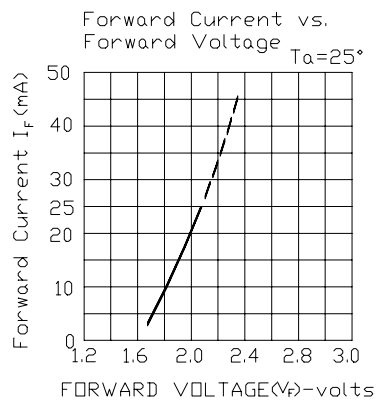
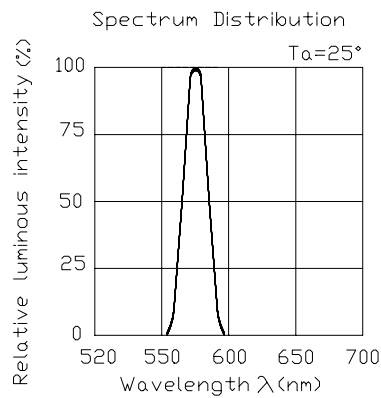
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Typical Electro-Optical Characteristic Curves



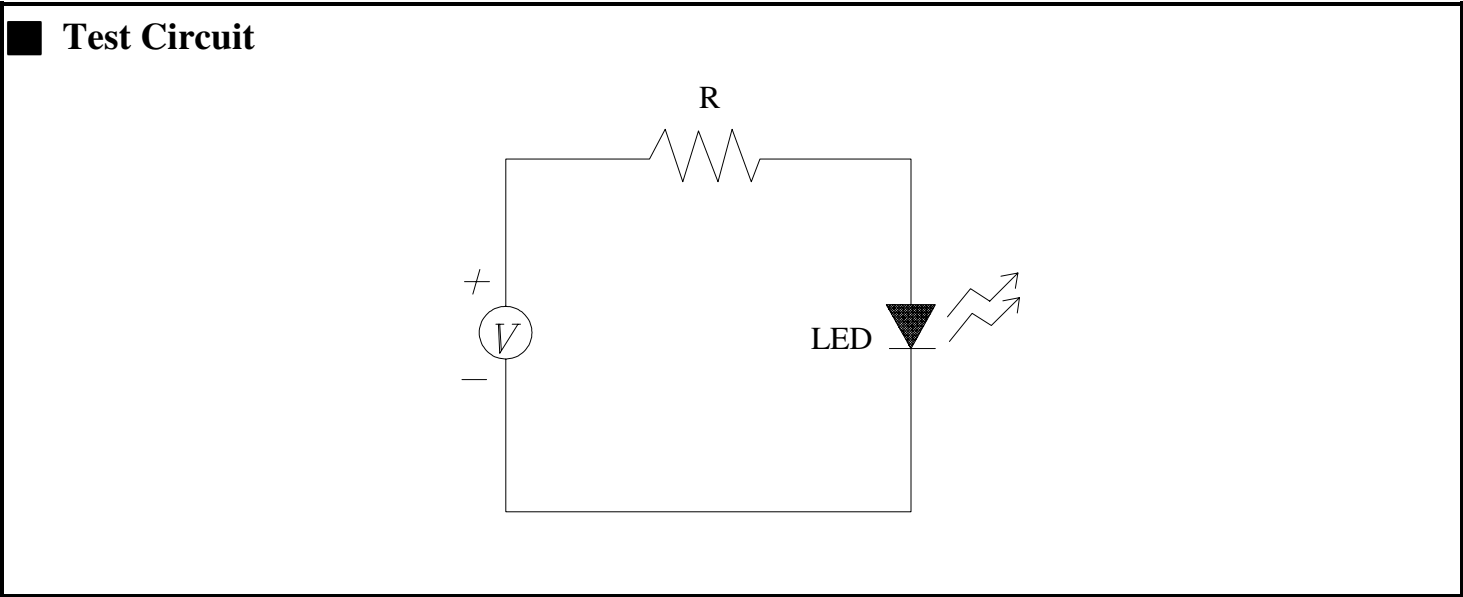


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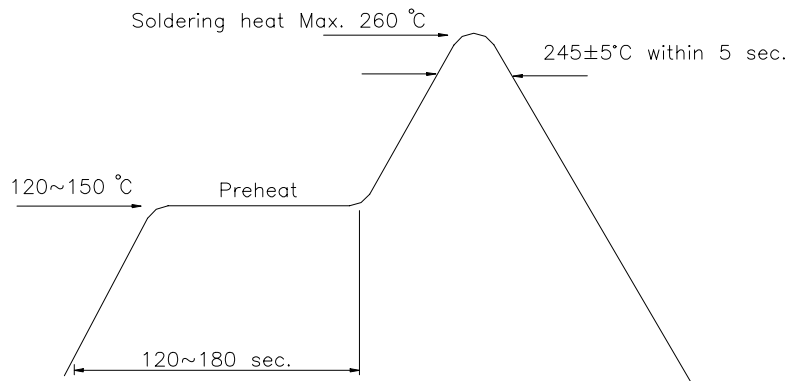


- **Precautions For Use**
1. Over-current-proof
Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change (Burn out will happen).

 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 desiccating 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 $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, RH60%, 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 reliability (DIP)**

Please refer to the following figure :

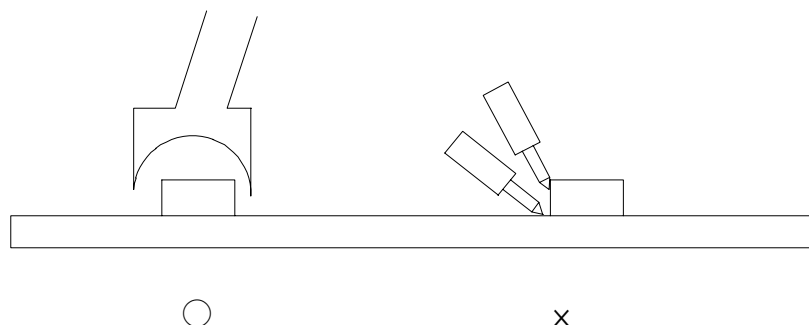


■ **Soldering Iron**

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

