



## Technical Data Sheet

### Reverse Package Chip LED

#### 24-21SYGC/S530-XX/TR8

#### 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 24-21 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

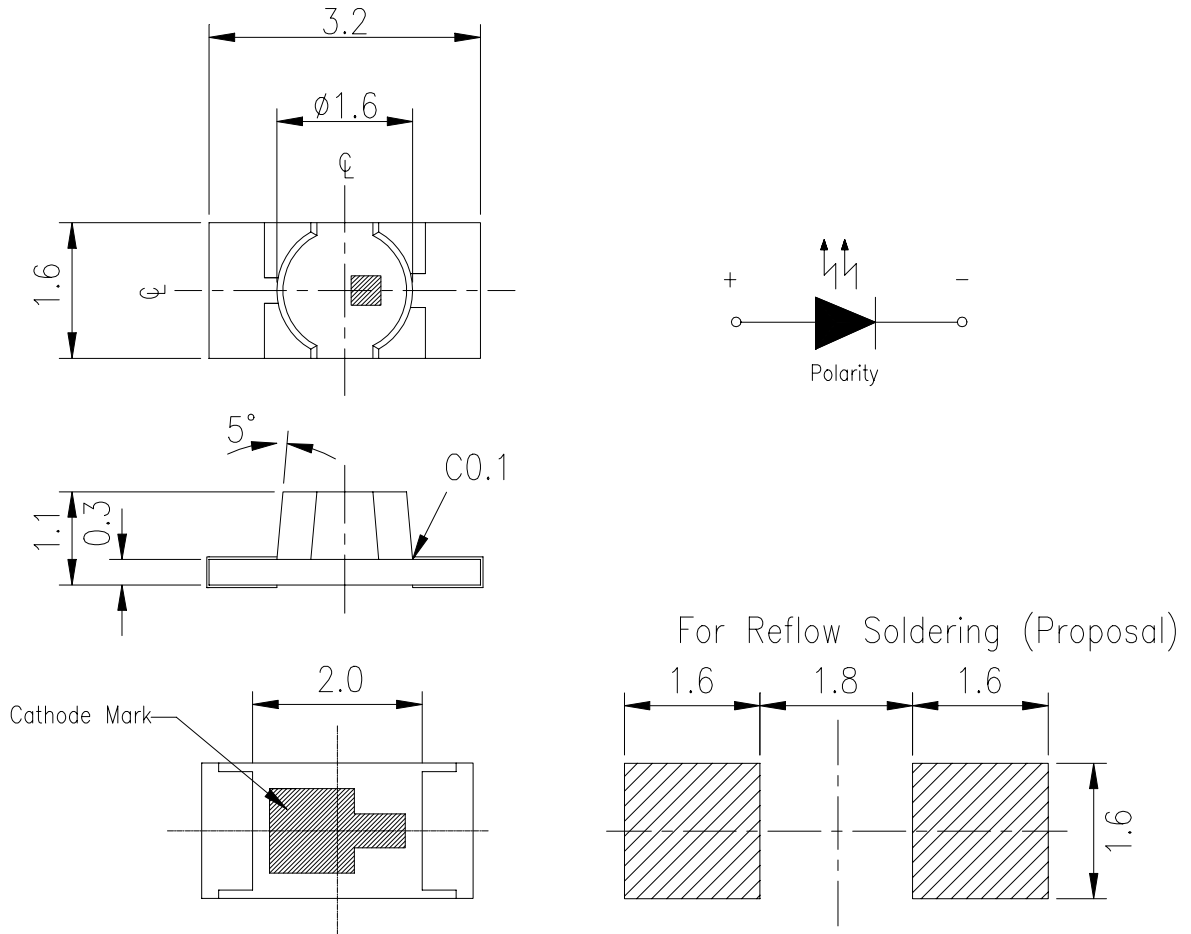
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.



#### Device Selection Guide

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

**Package Outline Dimensions**



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

**24-21SYGC/S530-XX/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>   | 25                    | mA   |
| Operating Temperature                     | T <sub>opr</sub> | -40 ~ +85             | °C   |
| Storage Temperature                       | T <sub>stg</sub> | -40~ +90              | °C   |
| Soldering Temperature                     | T <sub>sol</sub> | 260<br>(for 5 second) | °C   |
| Electrostatic Discharge                   | ESD              | 2000                  | V    |
| Power Dissipation                         | P <sub>d</sub>   | 60                    | mW   |
| Peak Forward Current<br>(Duty 1/10 @1KHz) | I <sub>F</sub>   | 60                    | mA   |

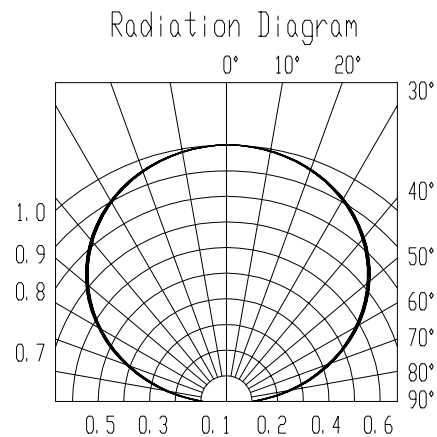
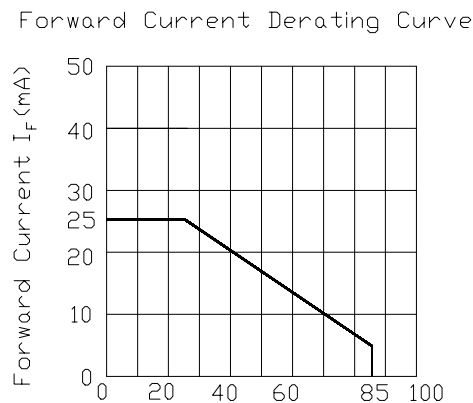
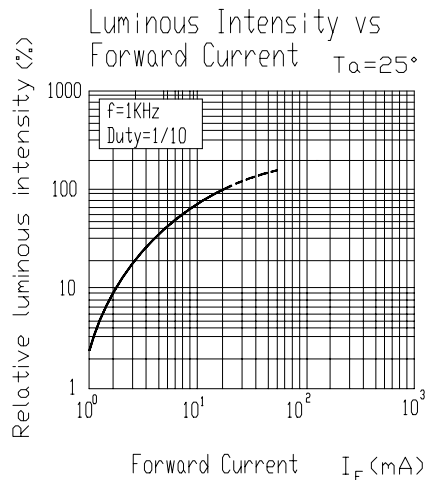
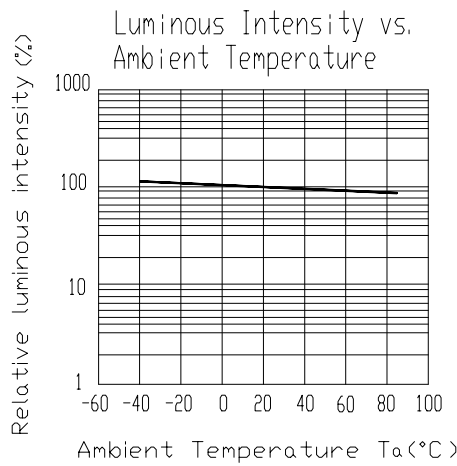
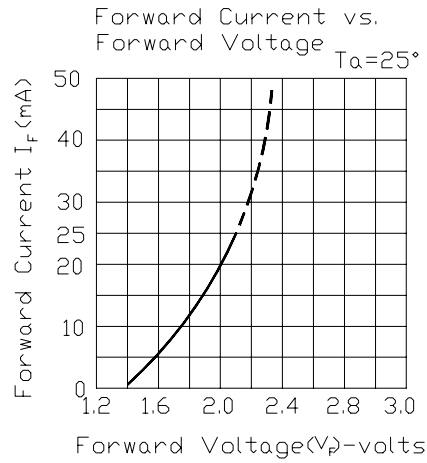
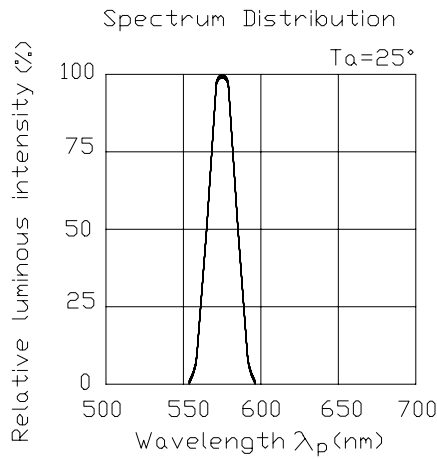
**Electro-Optical Characteristics (Ta=25°C)**

| Parameter                    | Symbol         | *Chip Rank | Min.  | Typ.  | Max.  | Unit | Condition             |
|------------------------------|----------------|------------|-------|-------|-------|------|-----------------------|
| Luminous Intensity           | I <sub>v</sub> | E1         | 11    | 16    | ----- | mcd  | I <sub>F</sub> =20 mA |
|                              |                | E2         | 16    | 22    | ----- |      |                       |
|                              |                | E3         | 22    | 29    | ----- |      |                       |
|                              |                | E4         | 29    | 35    | ----- |      |                       |
| Viewing Angle                | 2θ 1/2         | -----      | ----- | 130   | ----- | deg  | I <sub>F</sub> =20mA  |
| Peak Wavelength              | λ <sub>p</sub> | -----      | ----- | 575   | ----- | nm   | I <sub>F</sub> =20mA  |
| Dominant Wavelength          | λ <sub>d</sub> | -----      | ----- | 573   | ----- | nm   | I <sub>F</sub> =20mA  |
| Spectrum Radiation Bandwidth | Δλ             | -----      | ----- | 20    | ----- | nm   | I <sub>F</sub> =20mA  |
| Forward Voltage              | V <sub>F</sub> | -----      | ----- | 2.0   | 2.4   | V    | I <sub>F</sub> =20mA  |
| Reverse Current              | I <sub>R</sub> | -----      | ----- | ----- | 10    | μA   | V <sub>R</sub> =5V    |

**\*24-21SYGC/S530-XX/TR8**



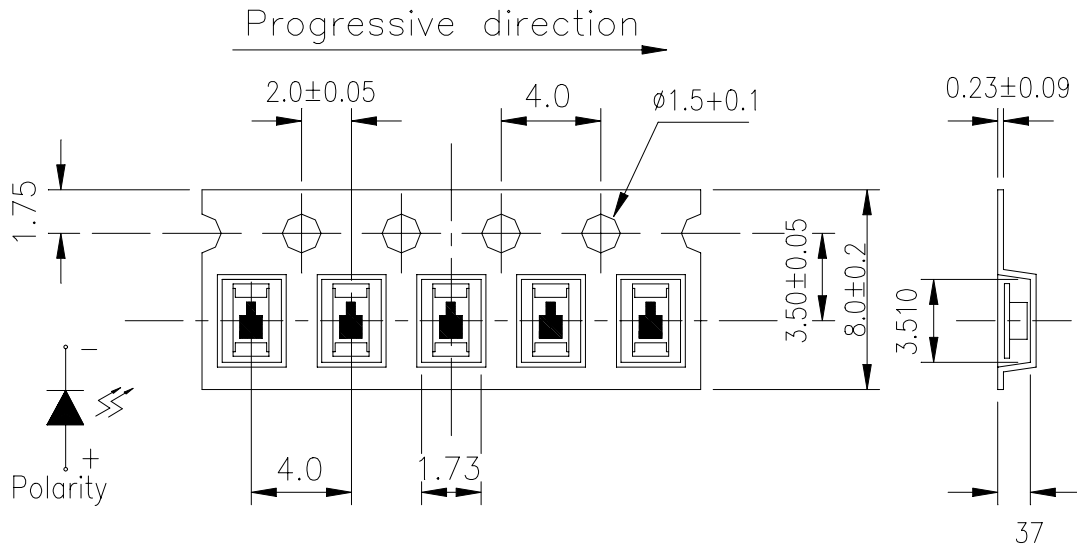
**Typical Electro-Optical Characteristics Curves**





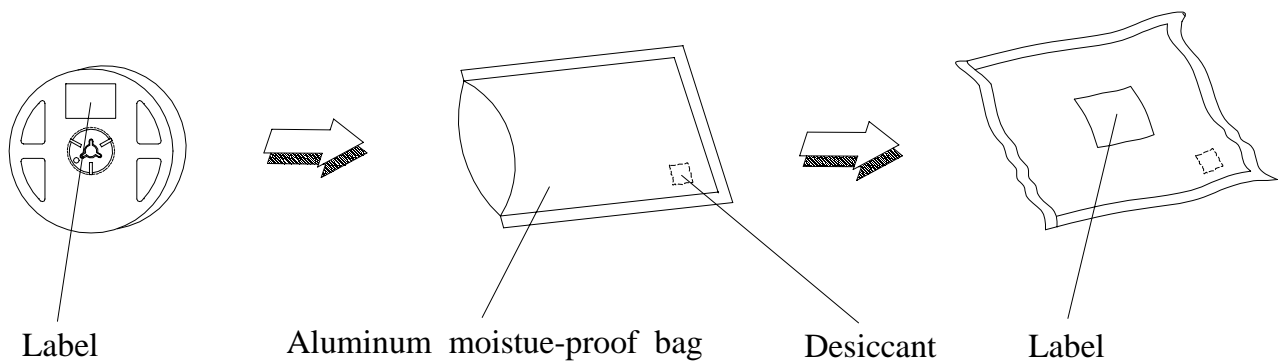
**24-21SYGC/S530-XX/TR8**

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



**Note:** Tolerances

■ **Moisture Resistant Packaging**



**24-21SYGC/S530-XX/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<br>Min. 5 sec.                | 6 min.            | 22 Pcs.     | 0/1   |
| 2   | Temperature Cycle                | H : +100°C 15min.<br>∫ 5 min.<br>L : -40°C 15min. | 300 Cycles        | 22 Pcs.     | 0/1   |
| 3   | Thermal Shock                    | H : +100°C 5min.<br>∫ 10 sec.<br>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 <sub>F</sub> = 20 mA                            | 1000 Hrs.         | 22 Pcs.     | 0/1   |
| 7   | High Temperature / High Humidity | 85°C/R.H85%                                       | 1000 Hrs.         | 22 Pcs.     | 0/1   |

**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

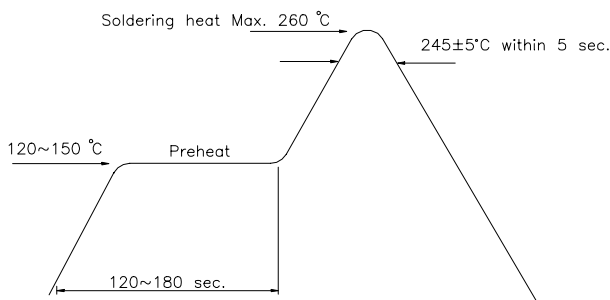
2.1 The operation of Temperature and RH are : 5°C~35°C , RH60%.

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

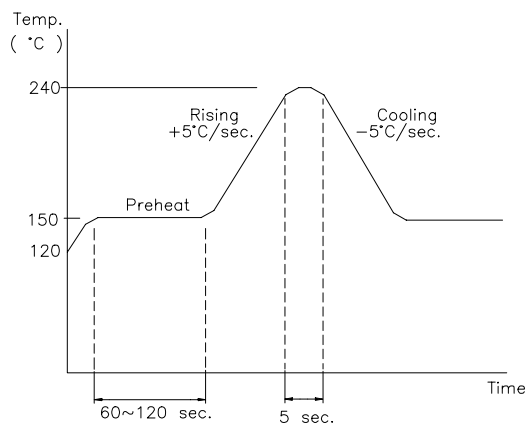
2.3 If opened more than one week in an atmosphere 5°C~35°C , RH 60% , they should be treated at 60°C± 5°C for 15hrs.

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**



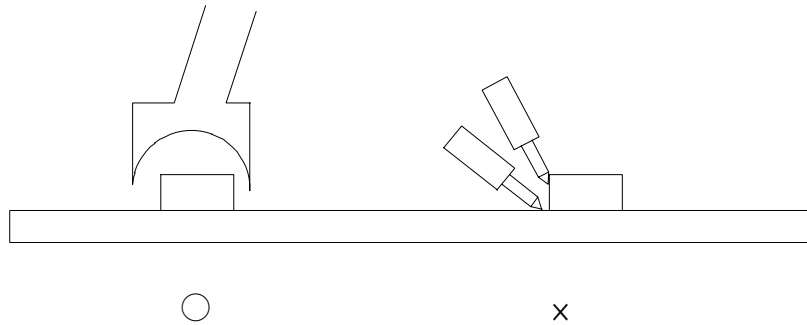
**Soldering Iron**

Basic spec is ≤5 sec when 260°C. If temperature is higher, time should be shorter (+10°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 .



**24-21SYGC/S530-XX/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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