



## Technical Data Sheet

### 0805 Package Chip LEDs

#### 17-21USOC/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 17-21 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

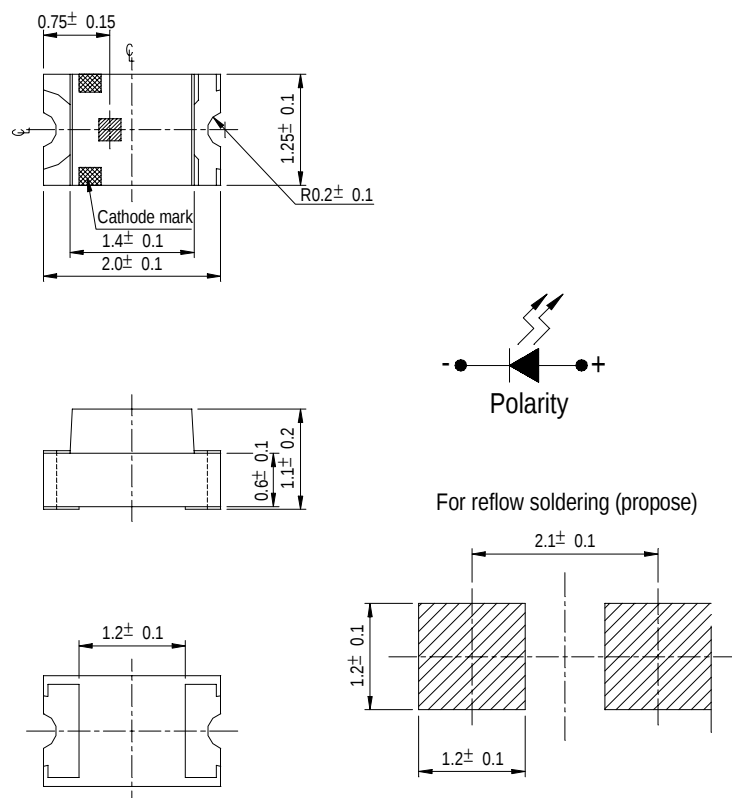
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.



#### Device Selection Guide

| Chip     |                     | Lens Color  |
|----------|---------------------|-------------|
| Material | Emitted Color       |             |
| AlGaInP  | Super Sunset Orange | Water Clear |

## 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)

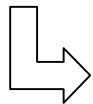
| Parameter                                 | Symbol    | Rating                | Unit |
|-------------------------------------------|-----------|-----------------------|------|
| Reverse Voltage                           | $V_R$     | 5                     | V    |
| Forward Current                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

**17-21USOC/S530-XX/TR8**

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

| Parameter                    | Symbol | *Chip Rank | Min.  | Typ.  | Max.  | Unit | Condition |
|------------------------------|--------|------------|-------|-------|-------|------|-----------|
| Luminous Intensity           | Iv     | A2         | 15    | 38    | ----- | mcd  | IF=20 mA  |
|                              |        | A3         | 40    | 60    | ----- |      |           |
|                              |        | A4         | 50    | 75    | ----- |      |           |
|                              |        | A5         | 60    | 90    | ----- |      |           |
|                              |        | A6         | 85    | 128   | ----- |      |           |
| Viewing Angle                | 2θ 1/2 | -----      | ----- | 140   | ----- | deg  | IF=20mA   |
| Peak Wavelength              | λ p    | -----      | ----- | 621   | ----- | nm   | IF=20mA   |
| Dominant Wavelength          | λ d    | -----      | ----- | 615   | ----- | nm   | IF=20mA   |
| Spectrum Radiation Bandwidth | △ λ    | -----      | ----- | 18    | ----- | nm   | IF=20mA   |
| Forward Voltage              | VF     | -----      | ----- | 2.0   | 2.4   | V    | IF=20mA   |
| Reverse Current              | IR     | -----      | ----- | ----- | 10    | μ A  | VR=5V     |

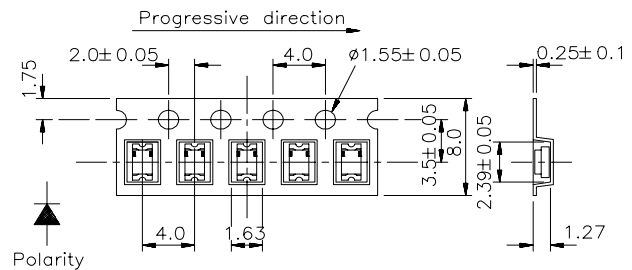
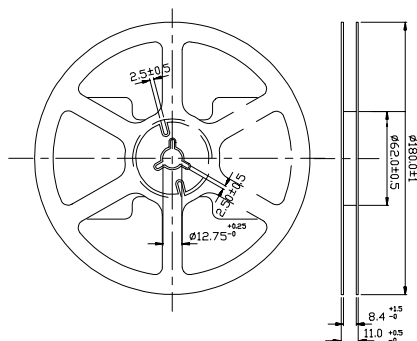
**\*17-21USOC/S530-XX/TR8**



**Chip Rank**

**Reel & Carrier Tape Dimensions**

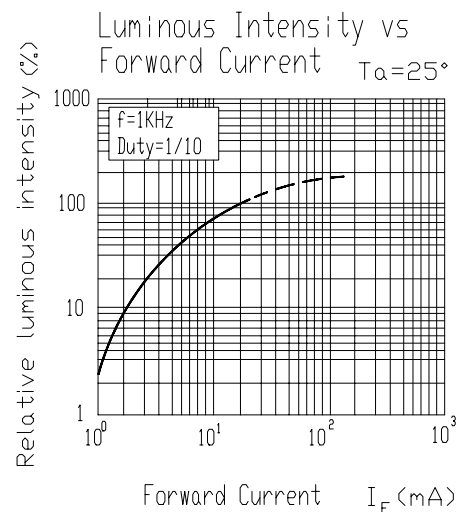
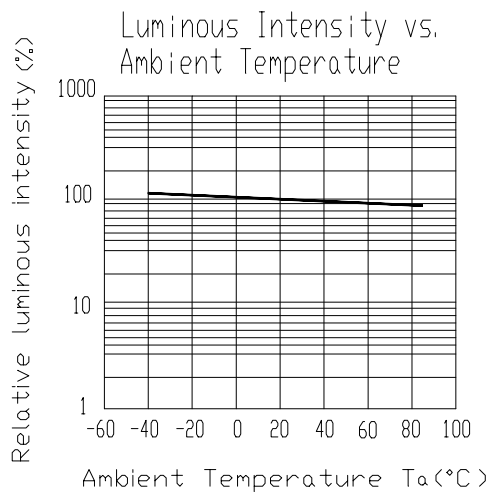
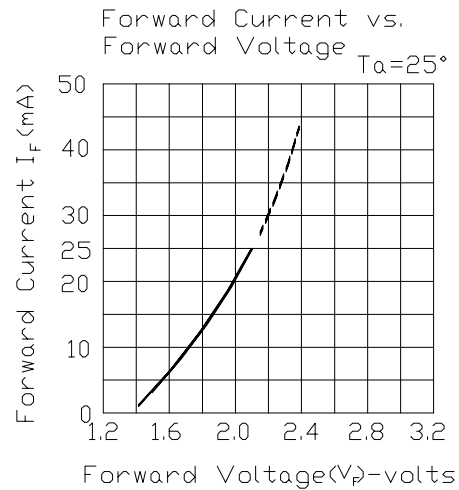
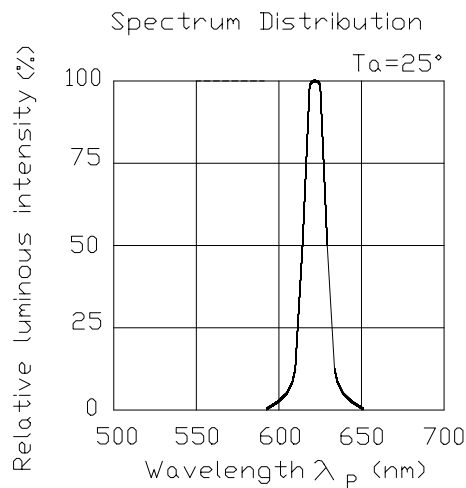
**Loaded quantity per reel 3000 PCS/reel**



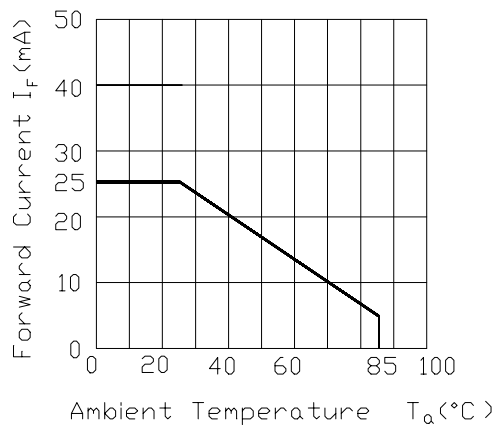
**Notes:** Tolerances Unless Dimension ± 0.1mm , Angle± 0.5° ,Unit = mm

**17-21USOC/S530-XX/TR8**

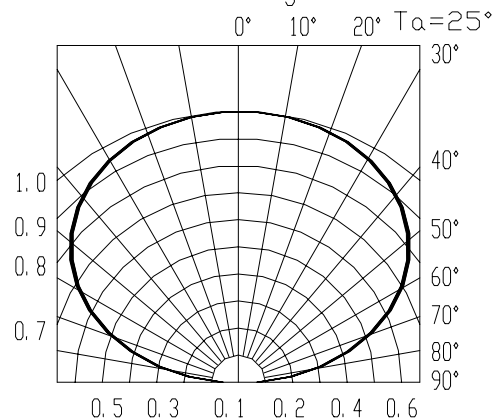
**Typical Electro-Optical Characteristics Curves**



Forward Current Derating Curve



Radiation Diagram



**17-21USOC/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/Rc |
|-----|----------------------------------|--------------------------------------------------|-------------------|-------------|-------|
| 1   | Reflow                           | Temp. : 240°C± 5°C<br>Min. 5 sec.                | 6 min.            | 22 Pcs.     | 0/1   |
| 2   | Temperature Cycle                | H : +85°C 30min.<br>∫ 5 min.<br>L : -55°C 30min. | 50 Cycles         | 22 Pcs.     | 0/1   |
| 3   | Thermal Shock                    | H : +100°C 5min.<br>∫ 10 sec.<br>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 <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 :  $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$  , RH60%.

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

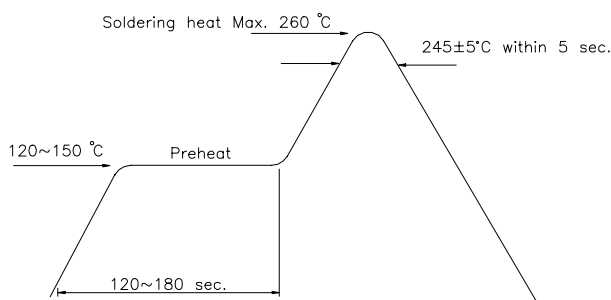
Otherwise, they should be kept in a damp proof box with descanting agent.

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

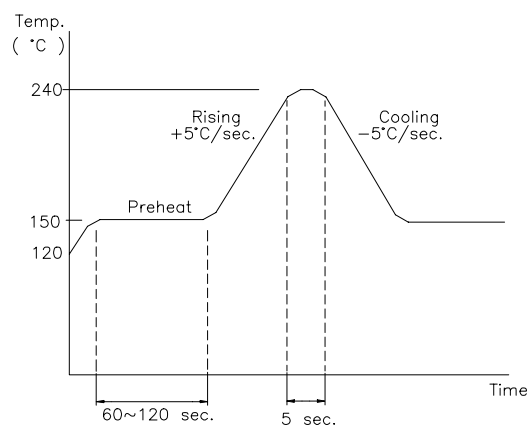
2.3 If opened more than one week in an atmosphere  $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$  , RH 60%, they should be treated at  $60^{\circ}\text{C}\pm 5^{\circ}\text{C}$  for 15hrs.

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

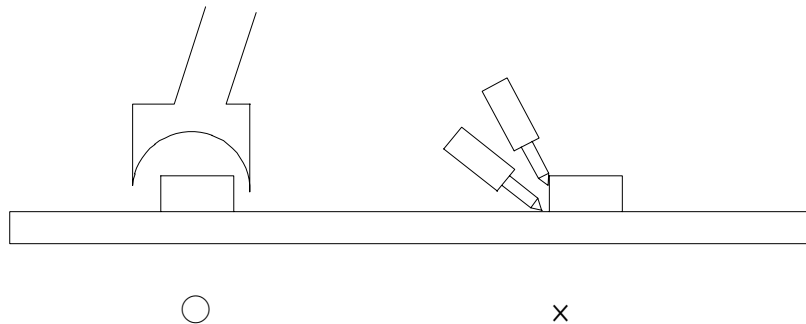


## Soldering Iron

Basic spec is  $\leq 5$  sec when  $260^{\circ}\text{C}$ . 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  $230^{\circ}\text{C}$ .

**17-21USOC/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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