

Technical Data Sheet

Reverse Package Chip LEDs

23-21BSDRC/S530-A2/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 23-21 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

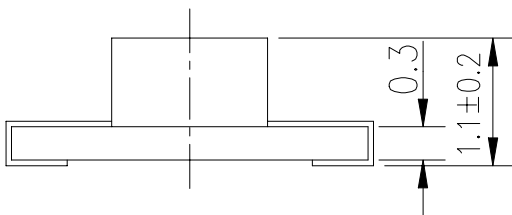
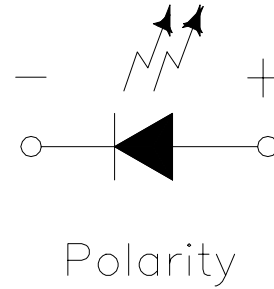
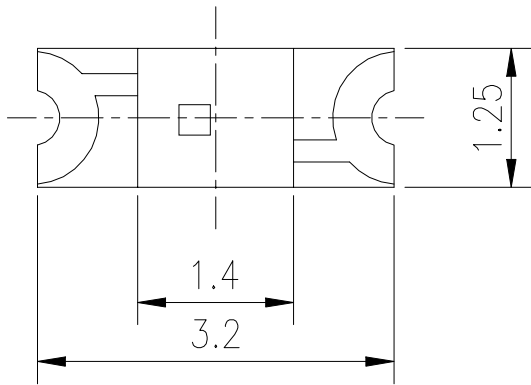
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.



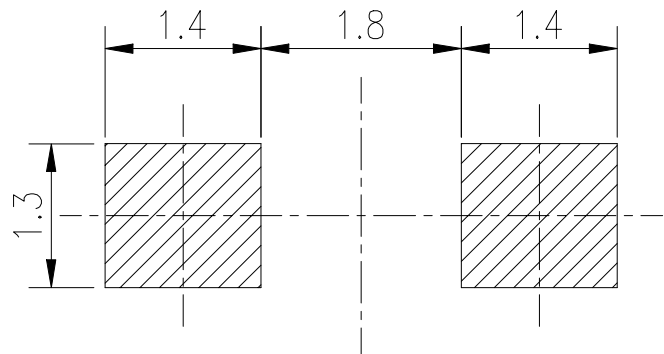
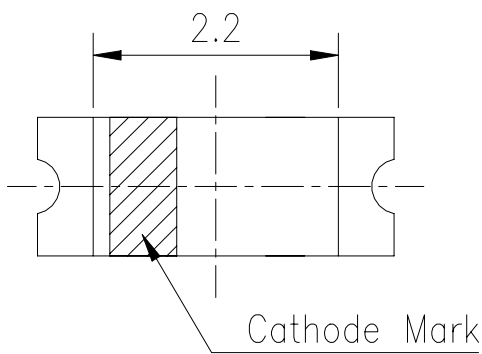
Device Selection Guide

| Chip | | Lens Color |
|----------|----------------|-------------|
| Material | Emitted Color | |
| AlGaInP | Super Deep Red | Water Clear |

Package Outline Dimensions



For reflow soldering



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

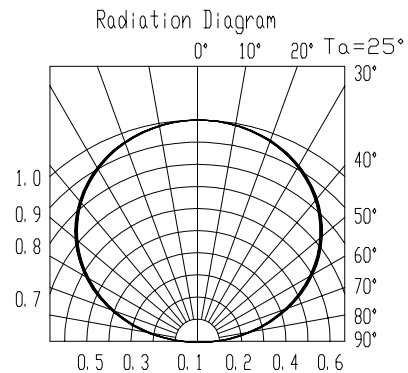
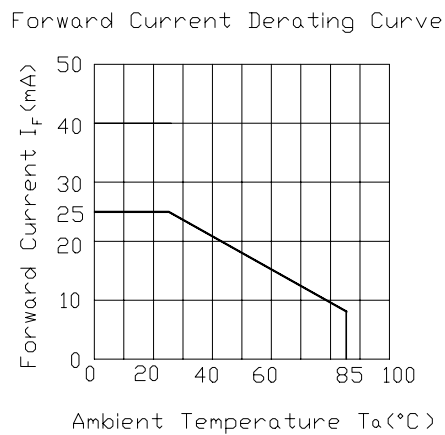
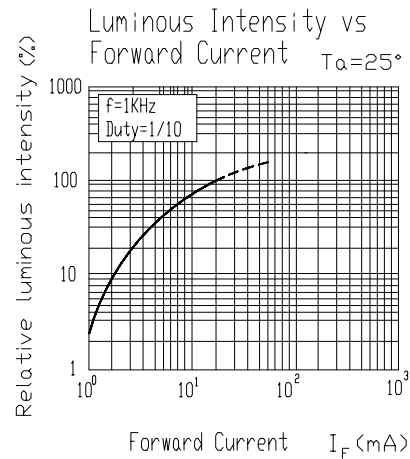
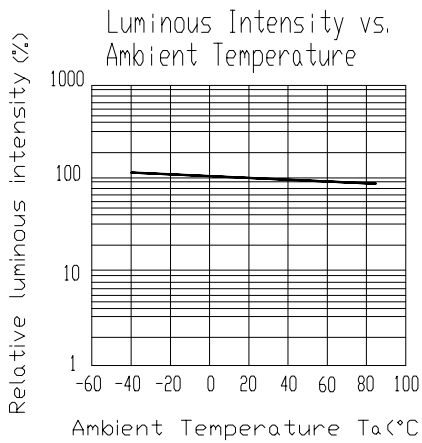
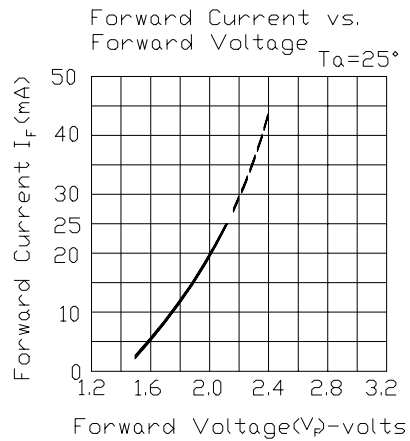
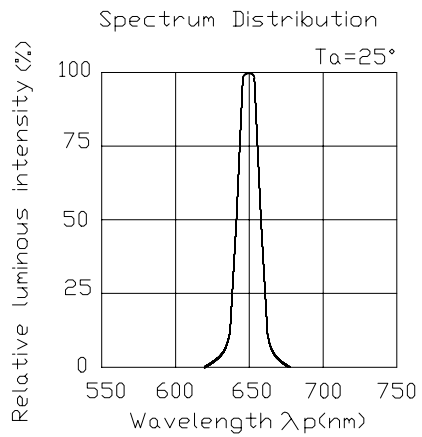
Absolute Maximum Ratings (Ta=25°C)

| 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 (for 5 second) | °C |
| Electrostatic Discharge | ESD | 2000 | V |
| Power Dissipation | P _d | 60 | mW |
| Peak Forward Current (Duty 1/10 @1KHz) | I _F | 60 | mA |

Electro-Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|----------------|-------|-------|-------|------|-----------------------|
| Luminous Intensity | I _v | 16 | 28 | ----- | mcd | I _F =20 mA |
| Viewing Angle | 2θ 1/2 | ----- | 130 | ----- | deg | I _F =20mA |
| Peak Wavelength | λ _p | ----- | 650 | ----- | nm | I _F =20mA |
| Dominant Wavelength | λ _d | ----- | 639 | ----- | 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 |

Typical Electro-Optical Characteristics Curves



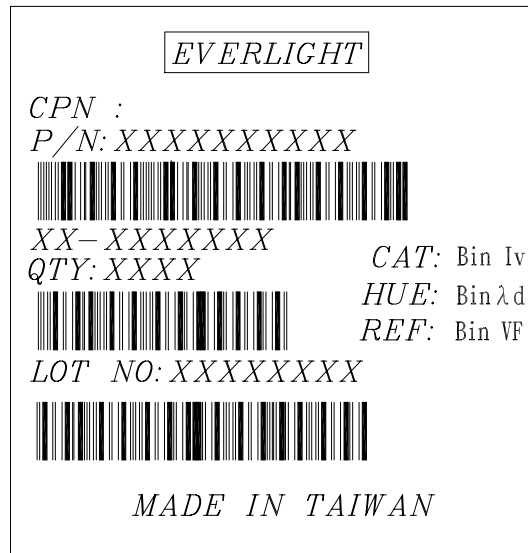
23-21BSDRC/S530-A2/TR8

■ **Label explanation**

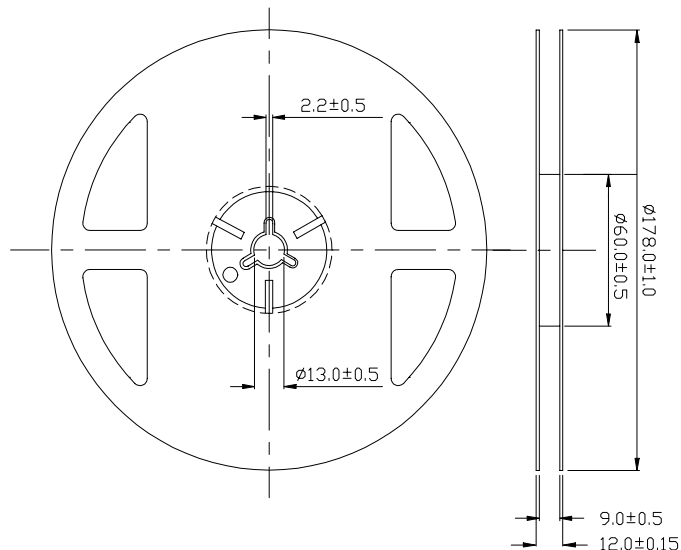
CAT: Luminous Intensity (mcd)

HUE: Dom. Wavelength (nm)

REF: Forward Voltage (V)

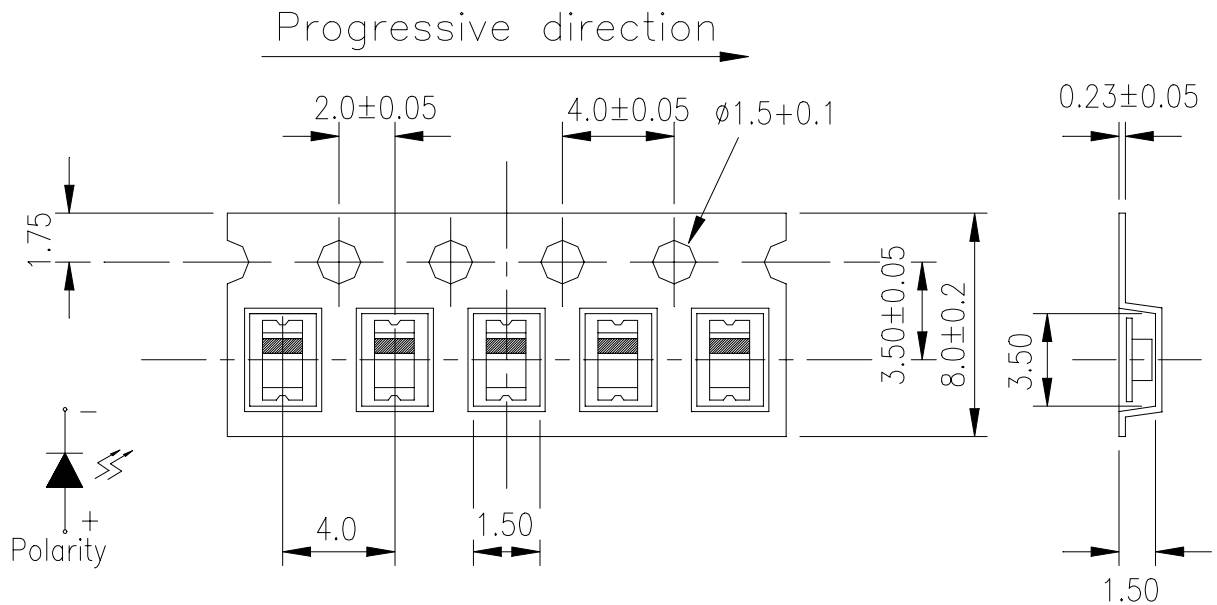


■ **Reel Dimensions**



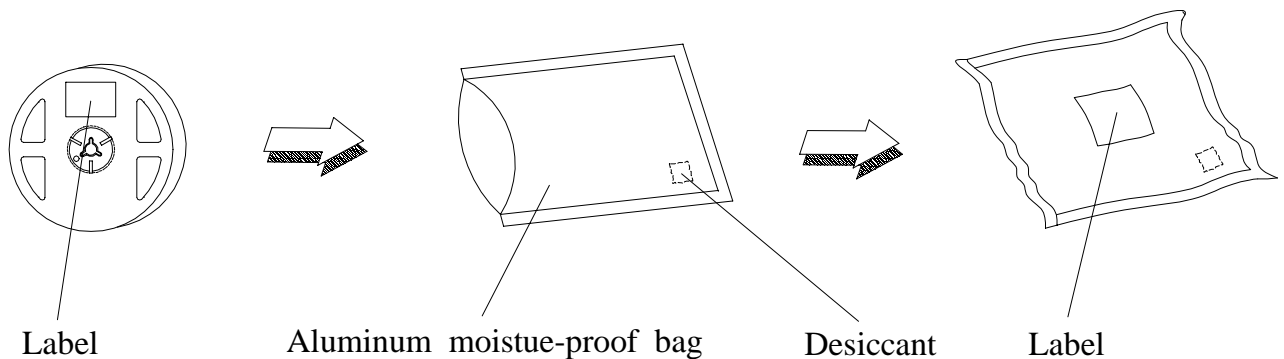
Note: Tolerances Unless Dimension $\pm 0.1\text{mm}$, Angle $\pm 0.5^\circ$,Unit = mm

■ **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/Re |
|-----|----------------------------------|---|-------------------|-------------|-------|
| 1 | Reflow | Temp. : 240°C ± 5°C Min. 5 sec. | 6 Min. | 22 Pcs. | 0/1 |
| 2 | Temperature Cycle | H : +100°C 15 min. § 5 min. L : -40°C 15 min. | 300 Cycles | 22 Pcs. | 0/1 |
| 3 | Thermal Shock | H : +100°C 5 min. § 10 sec. L : -10°C 5 min. | 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 | IF = 20 mA | 1000 Hrs. | 22 Pcs. | 0/1 |
| 7 | High Temperature / High Humidity | 85°C/RH 85% | 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.

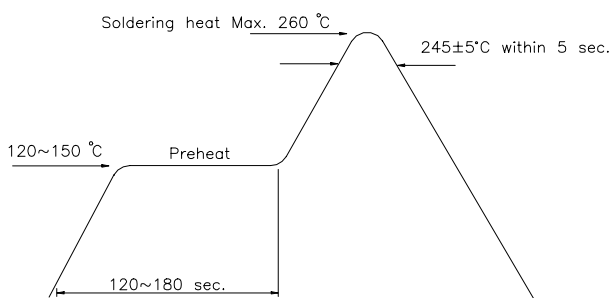
Otherwise, they should be kept in a damp proof box with desiccating agent.

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

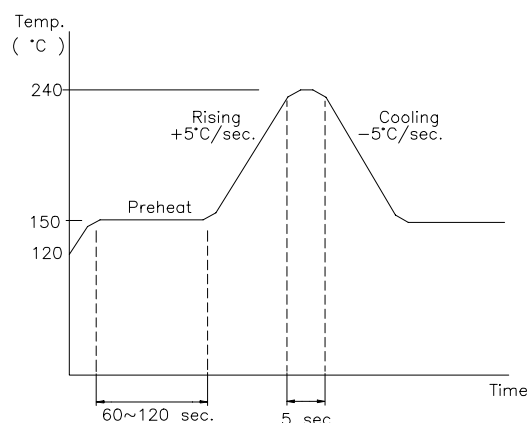
2.3 If opened more than one week in an atmosphere $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, RH 60% , they should be treated at $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 15hrs.

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

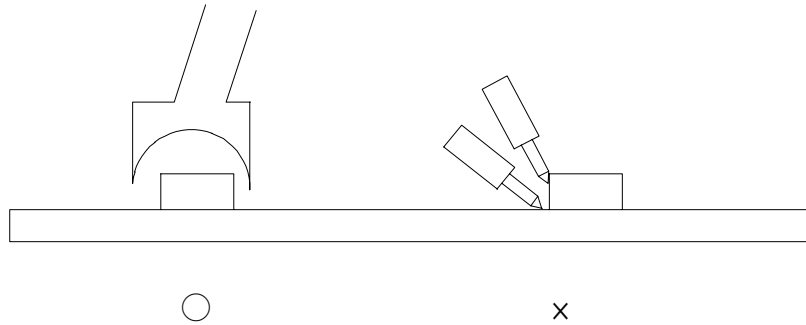


Soldering Iron

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