

### SMD ▪ A 28-21SDRC/S530-A3/TR8



#### Features

- Package in 12mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- EIA Std. package. • Mono-color type. • Pb-free.
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)

#### Description

- The 28-21 SMD LED 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, light weight makes them ideal for miniature applications.
- Furthermore by automation assembly machines the accuracy is anticipated.

#### Applications

- Small indicator for indoor applications.
- Flat backlight for LCD, switches and symbols.
- Indicator and backlight in office equipment.
- Indicator and backlight for battery driven equipment.
- Indicator and backlight for audio and video equipment.
- Automotive : backlighting in dashboards and switches
- Telecommunication : indicator and backlighting in telephone and fax.

## Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Deep-Red	Water Clear

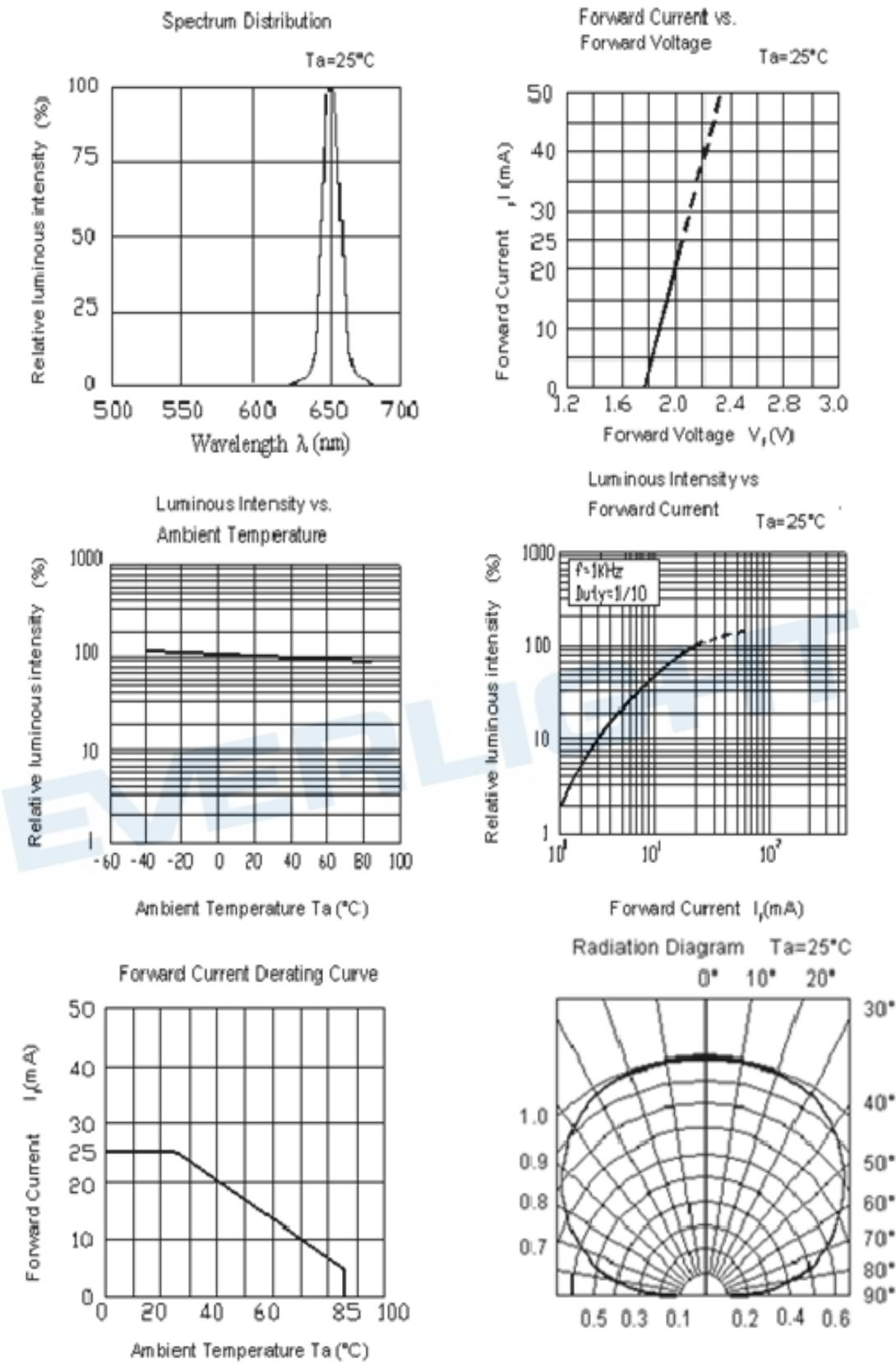
## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
Forward Current	I <sub>F</sub>	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	60	mA
Power Dissipation	P <sub>d</sub>	60	mW
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +90	°C
Electrostatic Discharge	ESD <sub>HBM</sub>	2000	V
Soldering Temperature	T <sub>sol</sub>	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

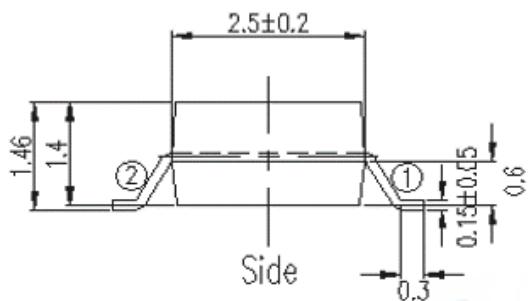
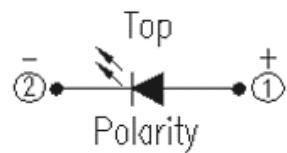
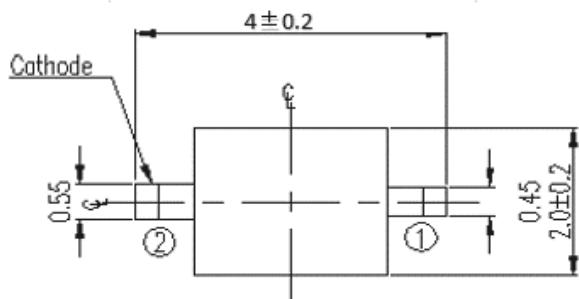
## Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	20	27	----	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	----	150	----	deg	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	----	650	----	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	----	639	----	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	△λ	----	20	----	nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	1.7	2.0	2.4	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	----	----	10	μA	V <sub>R</sub> =5V

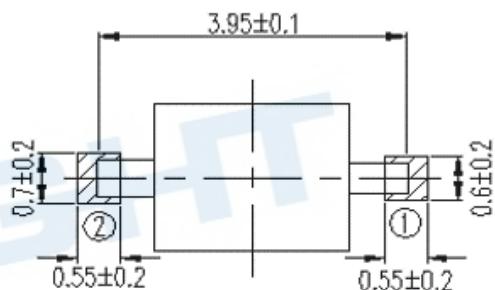
## Typical Electro-Optical Characteristics Curves



### Package Outline Dimensions

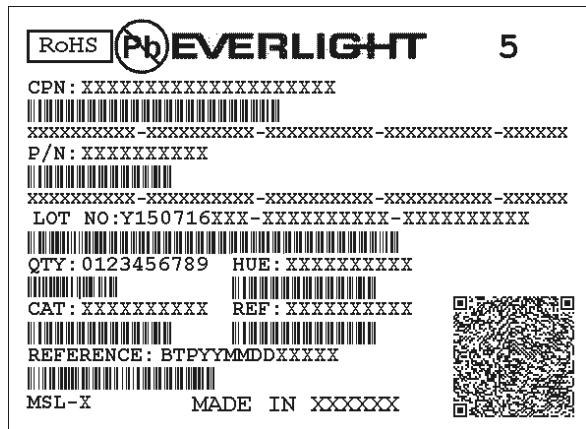


Recommend Sodering Pad



Note: The tolerances unless mentioned are  $\pm 0.1$ , unit=mm.

## Moisture Resistant Packing Materials Label explanation



CPN: Customer's Production Number

P/N : Production Number

LOT No: Lot Number

QTY: Packing Quantity

HUE: Peak Wavelength

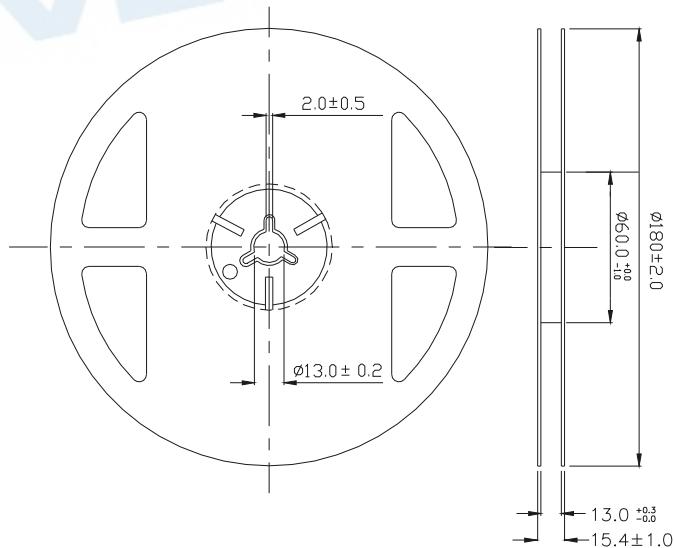
CAT: Ranks

REF: Reference

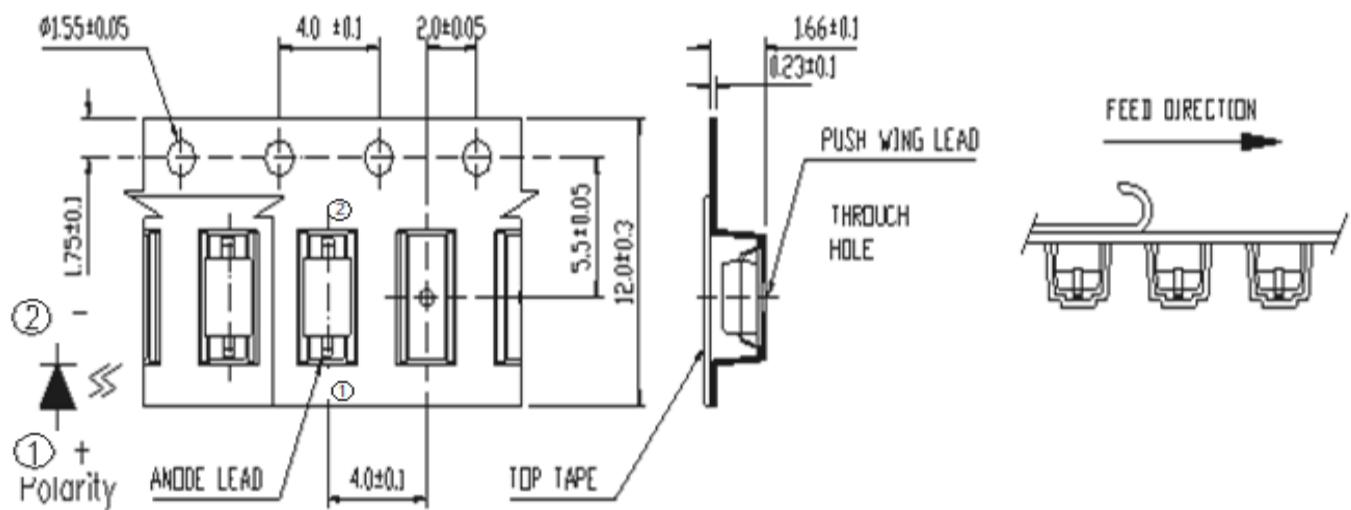
MSL-X: MSL Level

Made In: Manufacture place

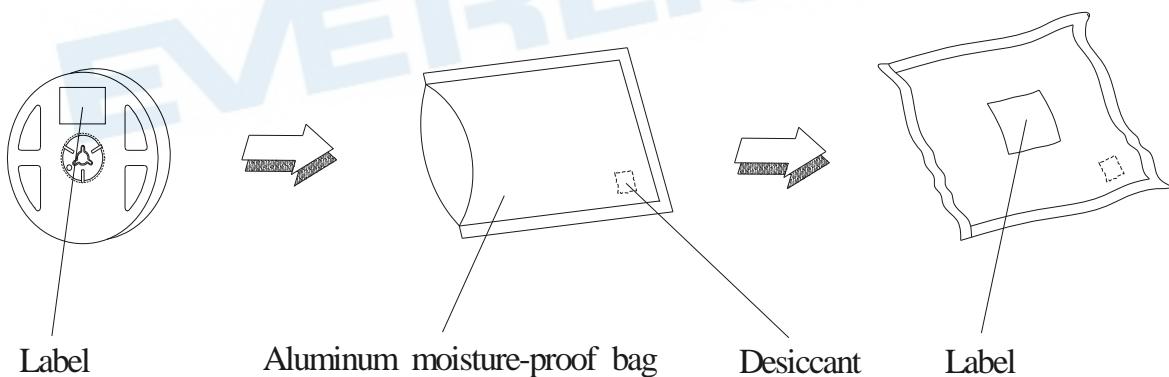
## Reel & Carrier Tape Dimensions



Loaded quantity 2000 PCS/reel



## Moisture Resistant Packaging



**Note:** Tolerances Unless Dimension is  $\pm 0.1$  mm, Unit = mm

## 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

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 After opening the package: The LEDs should be kept at 30°C or less and 60%RH or less.

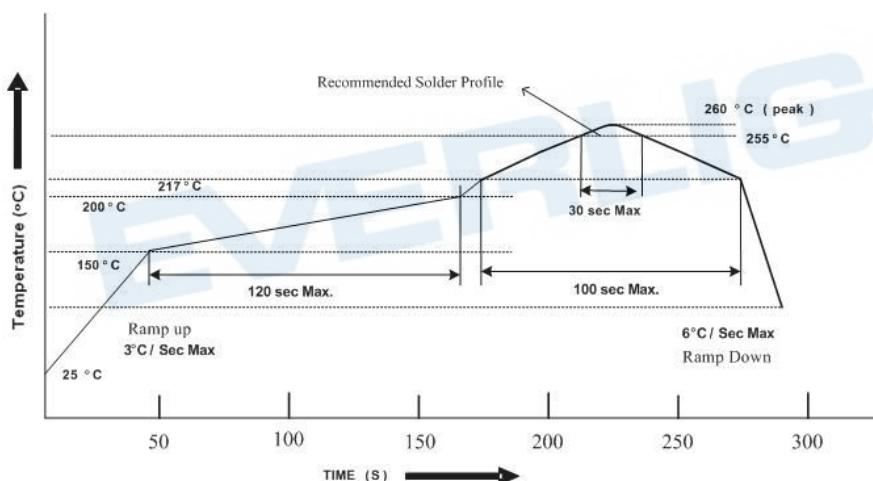
2.3 The LEDs should be used within 168 hours (7days) after opening the package .

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment :  $60 \pm 5^\circ\text{C}$  for 24 hours.

### 3. Soldering Condition

#### 3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

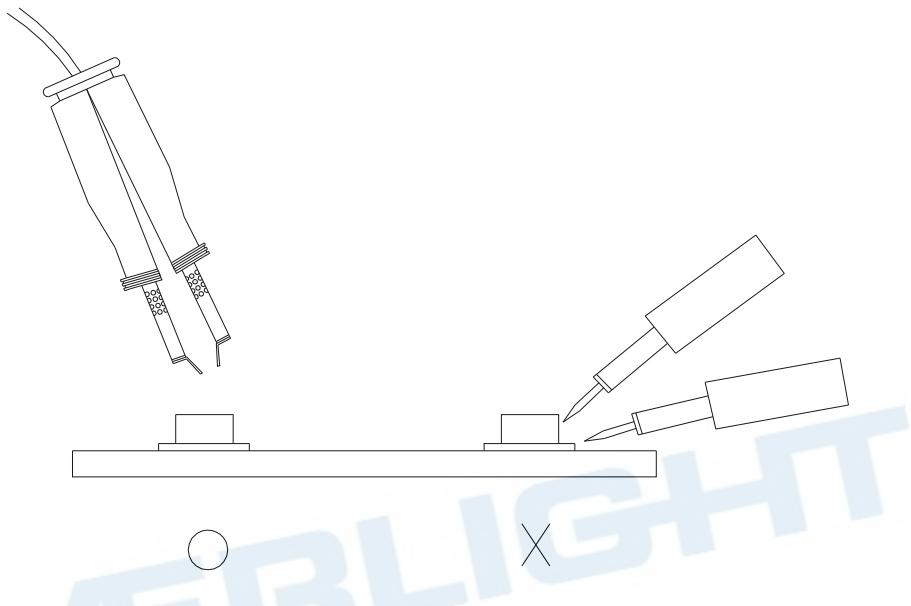
3.4 After soldering, do not warp the circuit board.

#### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

#### 5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



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