

### **DATASHEET**

# SMD • A 95-21SUBC/S400-A4/TR9



#### **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.

#### **Description**

- The 95-21 SMD LED 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.
- · Backlighting in dashboards and switches.
- Telecommunication: indicator and backlighting in telephone and fax.



#### **Device Selection Guide**

Chip Materials	Emitted Color	Resin Color
InGaN	Blue	Water Clear

### Absolute Maximum Ratings (Ta=25℃)

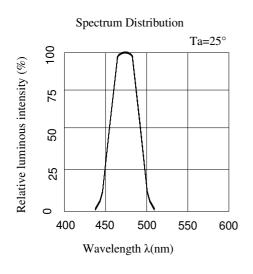
Parameter	Symbol	Rating	Unit	
Reverse Voltage	$V_{R}$	5	V	
Forward Current	I <sub>F</sub>	25	mA	
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	100	mA	
Power Dissipation	Pd	95	mW	
Operating Temperature	$T_{opr}$	-40 ~ +85	$^{\circ}\mathrm{C}$	
Storage Temperature	Tstg	-40 ~ +90	$^{\circ}\mathrm{C}$	
Electrostatic Discharge	ESD <sub>HBM</sub>	150	V	
Soldering Temperature	$T_{sol}$	Reflow Soldering : 260 $^{\circ}$ C for 10 sec. Hand Soldering : 350 $^{\circ}$ C for 3 sec.		

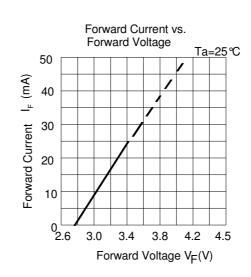
### **Electro-Optical Characteristics (Ta=25℃)**

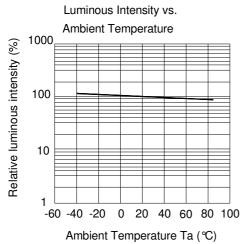
Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
Luminous Intensity	lv	400	500		mcd	I <sub>F</sub> =20mA
Viewing Angle	$2\theta_{1/2}$		25		deg	I <sub>F</sub> =20mA
Peak Wavelength	λр		468		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λd		470		nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	$\triangle \lambda$		25		nm	I <sub>F</sub> =20mA
Forward Voltage	$V_{F}$		3.5	4.3	V	I <sub>F</sub> =20mA
Reverse Current	$I_R$			50	μΑ	V <sub>R</sub> =5V

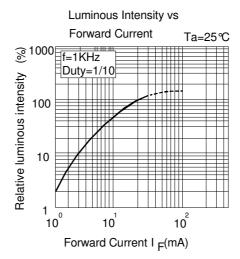


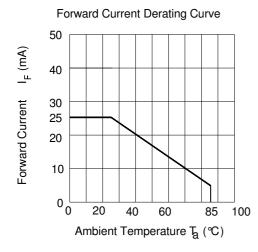
### **Typical Electro-Optical Characteristics Curves**

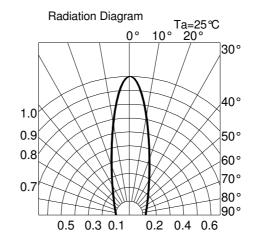






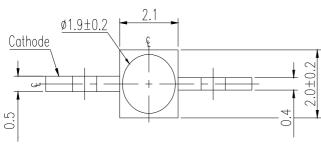


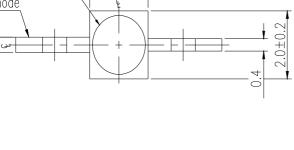


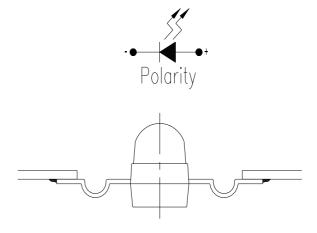


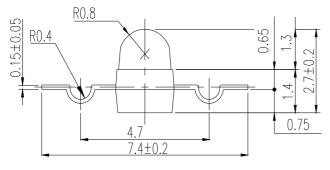


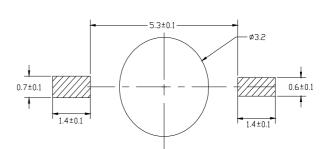
### **Package Outline Dimensions**











Note: The tolerances unless mentioned are ±0.1, unit=mm.



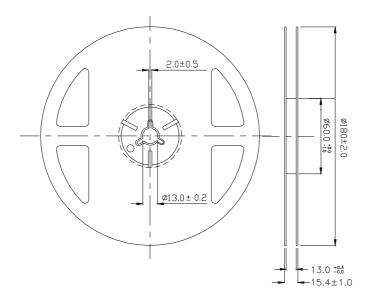
#### **Package Outline Dimensions**

#### **Label Explanation**



- · CAT: Luminous Intensity Rank
- · HUE: Dom. Wavelength Rank
- · REF: Forward Voltage Rank

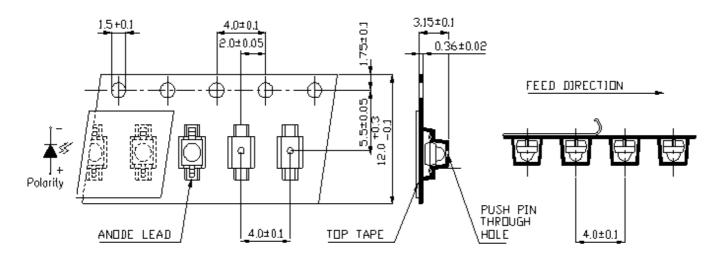
#### **Reel & Carrier Tape Dimensions**



Note: The tolerances unless mentioned are ±0.1, unit=mm

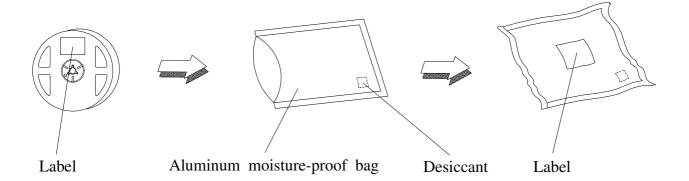


# Loaded quantity 1000 PCS per reel



Note: The tolerances unless mentioned are ±0.1, unit=mm.

### **Moisture Resistant Packaging**





#### **Precautions For Use**

1. Over-current-proof

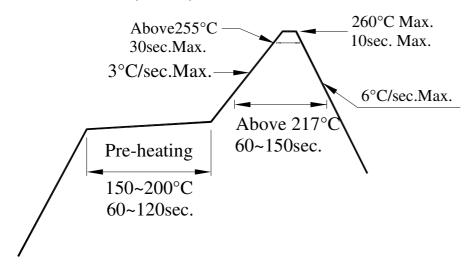
Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change ( Burn out will happen ).

- 2. Storage
- 2.1 Do not open moisture proof bag before the products are ready to use.
- 2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.
- 2.3 After opening the package: The LED's floor life is 72 hours under 30℃ or less and 60% RH or less.

  If unused LEDs remain, it should be stored in moisture proof packages.
- 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 :  $60\pm5$  °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.

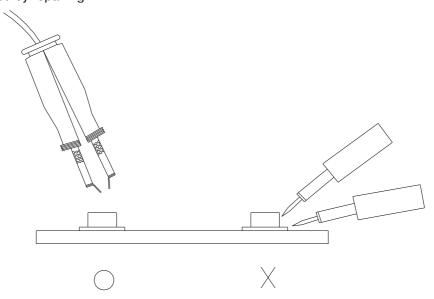


#### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than  $350^{\circ}$  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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