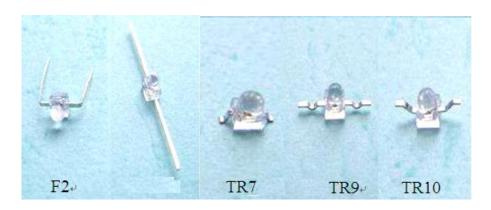


# DATASHEET

# SMD ■ A 95-21UYC/S530-XX/XXX



#### **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 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	
AlGaInP	Super Yellow	Water Clear	

# Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit	
Reverse Voltage	$V_R$	5	V	
Forward Current	l <sub>F</sub>	20	mA	
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	60	mA	
Power Dissipation	Pd	160	mW	
Operating Temperature	$T_{opr}$	-40 ~ +85	$^{\circ}\!\mathbb{C}$	
Storage Temperature	Tstg	-40 ~ +90	$^{\circ}\!\mathbb{C}$	
Electrostatic Discharge	ESD	2000	V	
Soldering Temperature	T <sub>sol</sub>	Reflow Soldering : 260 $^{\circ}\mathrm{C}$ for 10 sec. Hand Soldering : 350 $^{\circ}\mathrm{C}$ for 3 sec.		

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

Parameter	Symbol	Rank	Min.	Тур.	Max.	Unit	Condition
Luminous Intensity		A2	198	529		- - - mcd -	I <sub>F</sub> =20mA
		A3	463	714			
	lv	A4	661	892			
	IV	A5	793	1156			
		A6	991	1454			
		A7	1150	1600			
Viewing Angle	2θ <sub>1/2</sub>			25		deg	I <sub>F</sub> =20mA
Peak Wavelength	λр			591		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λd			589		nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	Δλ			15		nm	I <sub>F</sub> =20mA
Forward Voltage	$V_{F}$			2.0	2.4	V	I <sub>F</sub> =20mA
Reverse Current	$I_R$				10	μΑ	V <sub>R</sub> =5V

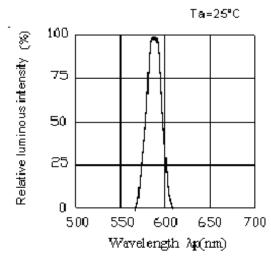
#### Note:

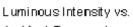
- 1.T0olerance of Luminous Intensity: ±11%
- 2. Tolerance of Dominant Wavelength ±1nm
- 3. Tolerance of Forward Voltage: ±0.1V

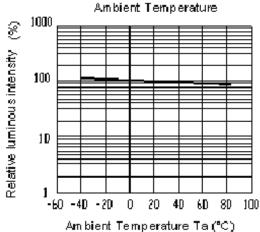


## **Typical Electro-Optical Characteristics Curves**

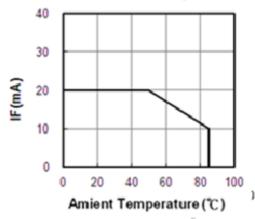




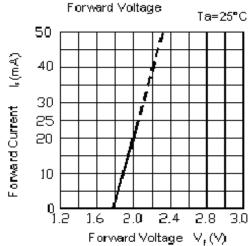




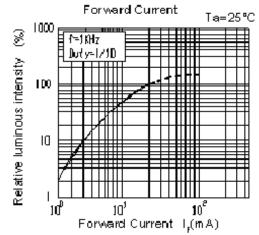
## Forward Current Denating Curve



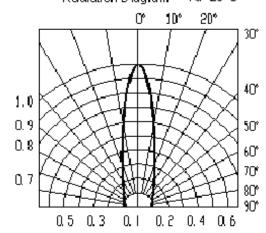
#### Forward Current vs. Forward Voltage



### Luminous Intensity vs

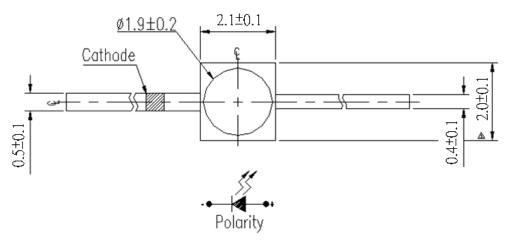


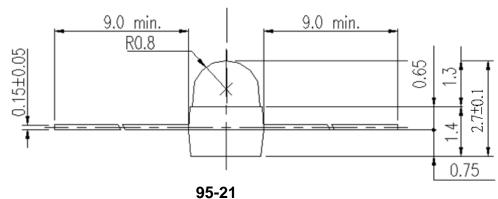
### Radiation Diagram Ta=25°C

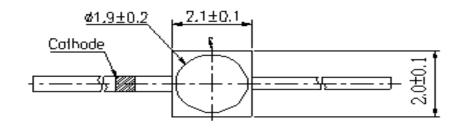


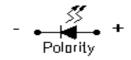
# **Package Outline Dimensions**

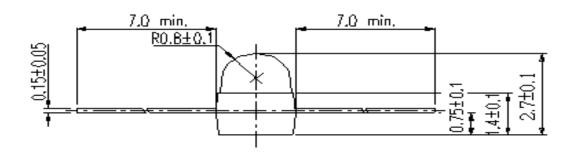


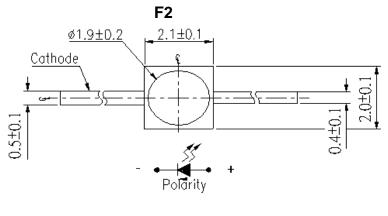


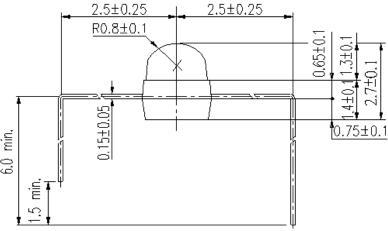




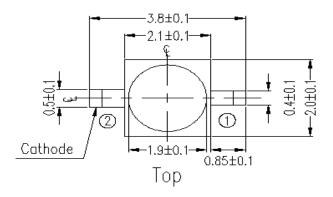


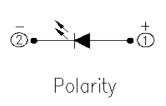


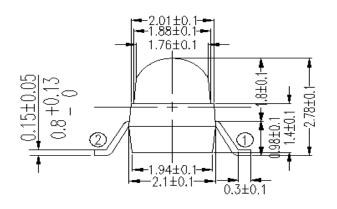


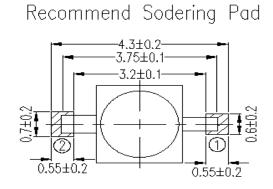


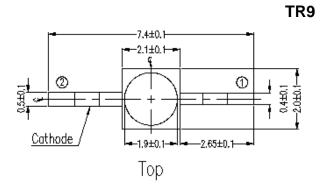
**TR7** 

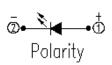


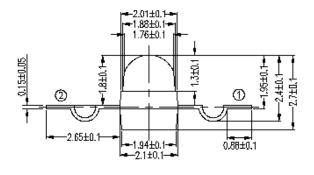


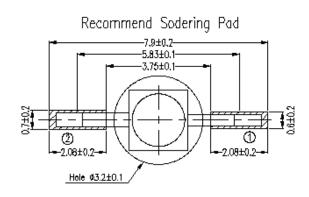


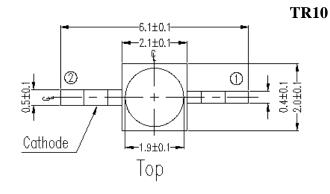


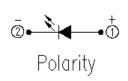


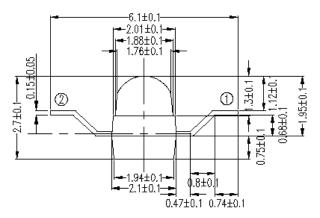


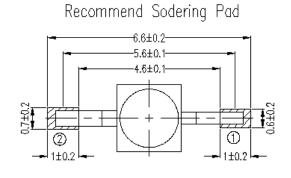










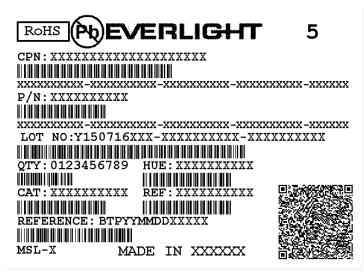


Note: The tolerances unless mentioned are ±0.1, unit=mm.



### **Package Outline Dimensions**

#### **Label Explanation**

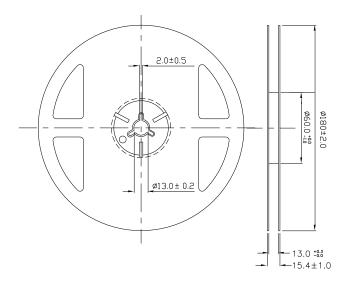


· CPN: Customer's Product Number

P/N: Product NumberLOT No: Lot NumberQTY: Packing Quantity

CAT: Luminous Intensity RankHUE: Dom. Wavelength RankREF: Forward Voltage Rank

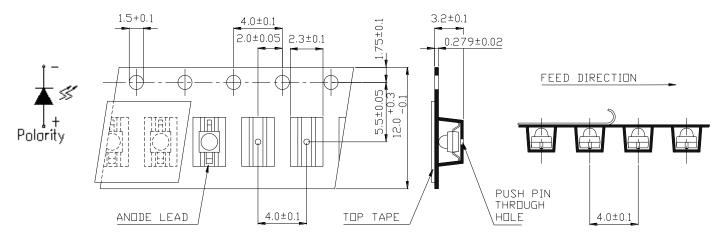
# **Reel & Carrier Tape Dimensions**



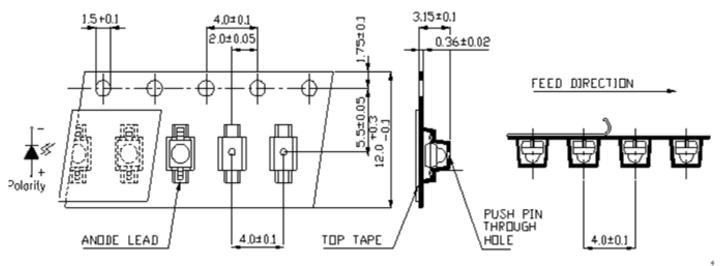
Note: The tolerances unless mentioned are ±0.1, unit=mm.

# Loaded quantity is 1000 PCS/bag bulk

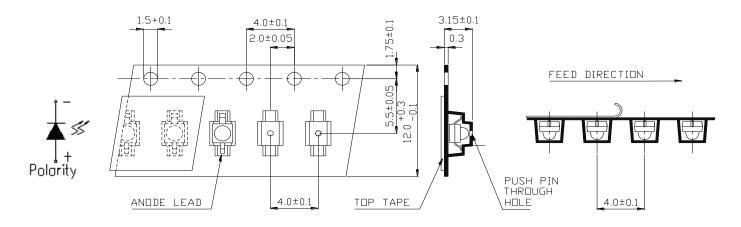
# 95-21/TR7



### 95-21/TR9



## 95-21/TR10



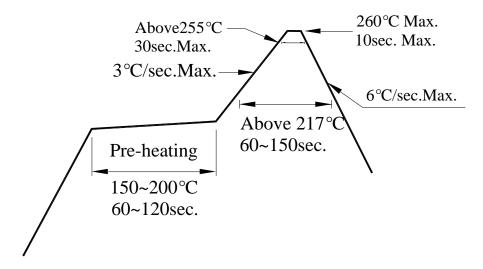


### **Precautions For Use**

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°℃ 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 :  $60\pm5^{\circ}$ 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.

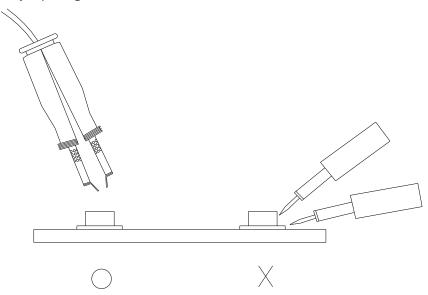


#### 4. Soldering Iron

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