



EVERLIGHT ELECTRONICS CO.,LTD.

MODEL NO: 12-21UYC/S75/TR8

Device Number : DSE-121-035 REV. 1.0

*Chip LEDs with Right Angle Lens*

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#### 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.

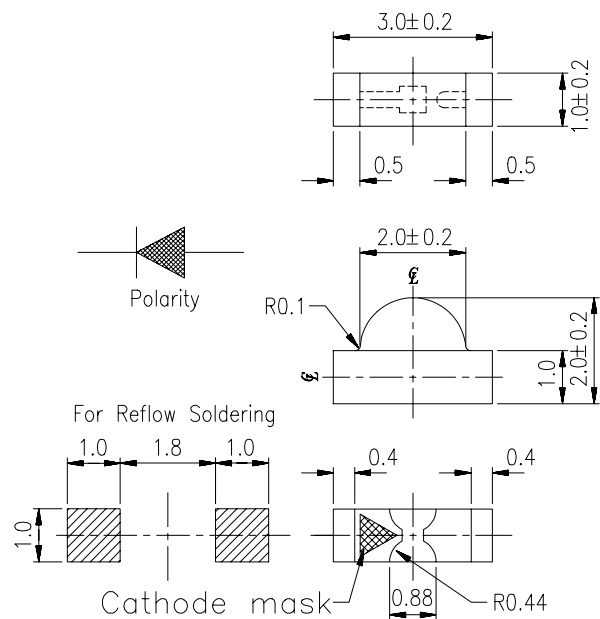
#### Description :

- The 12-21 SMD 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 application, 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.

#### Package Dimension :



#### Notes :

Tolerances Unless Dimension  $\pm$   
0.1mm  
Angle  $\pm 0.5^\circ$

PART NO	CHIP		Lens Color
	Material	Emitted Color	
12-21 UYC/S75/TR8	AlGaInP	Super Yellow	Water Clear

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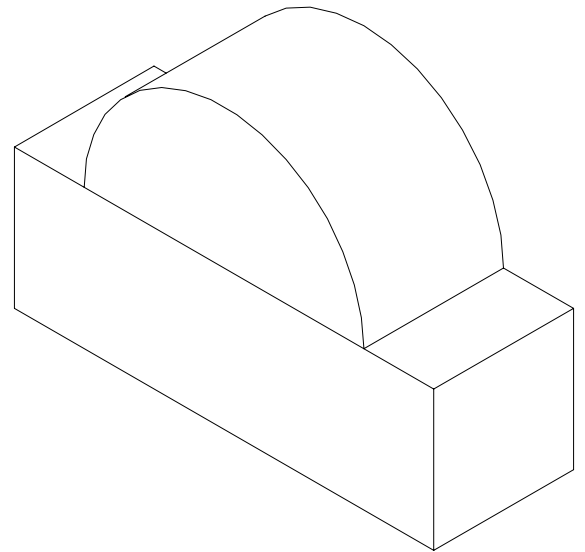
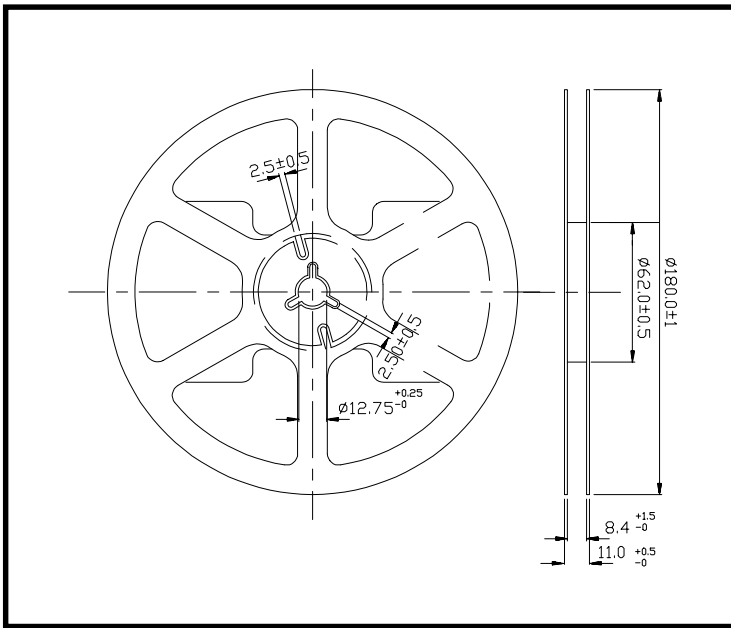
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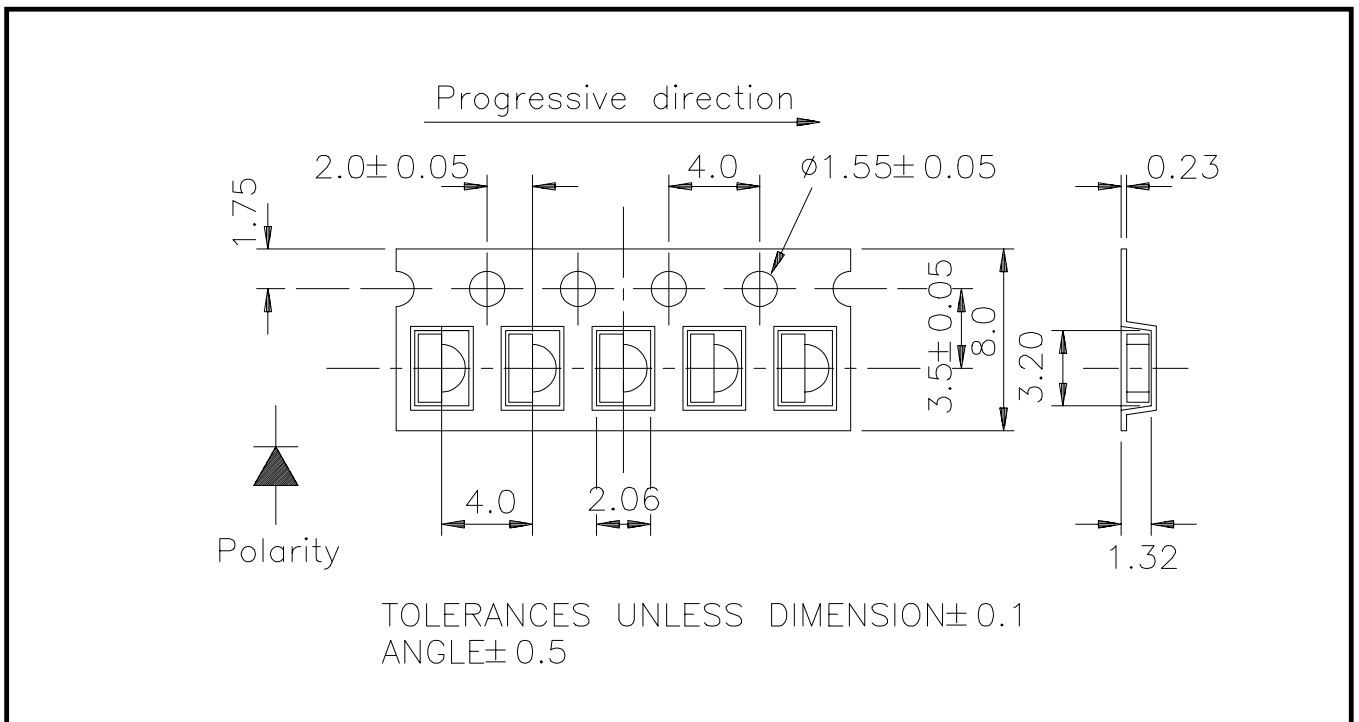
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■ Package Dimension :



■ Loaded quantity per reel 2000 pcs/reel :





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### ■ Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>r</sub>	5	V
Forward Current	I <sub>f</sub>	50	mA
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +90	°C
Soldering Temperature	T <sub>sol</sub>	260 (for 5 second)	°C
Power Dissipation	P <sub>d</sub>	120	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I <sub>f</sub> (Peak)	200	mA

### ■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	I <sub>v</sub>	40	70	-----	mcd	I <sub>f</sub> =20mA
Viewing Angle	2 θ 1/2	-----	120	-----	deg	I <sub>f</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	-----	591	-----	nm	I <sub>f</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	-----	589	-----	nm	I <sub>f</sub> =20mA
Spectrum Radiation Bandwidth	△ λ	-----	15	-----	nm	I <sub>f</sub> =20mA
Forward Voltage	V <sub>f</sub>	-----	2.0	2.4	V	I <sub>f</sub> =20mA
Reverse Current	I <sub>r</sub>	-----	-----	10	μ A	V <sub>r</sub> =5V



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## Specifications For Bin Grading

Bin Grading	Min.	Typ.	Max.	Unit
P	40.0	-----	80.0	mcd
Q	63.0	-----	125.0	mcd
0	588	-----	591	nm
1	591	-----	594	nm
2	594	-----	597	nm

## Reliability Test Item And Condition

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 SEC	76 Pcs	0/1
2	Temperature Cycle	H : +85°C 30min ∫ 5 min L : -55°C 30min	50 CYCLE	76 Pcs	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10 sec L : -10°C 5min	50 CYCLE	76 Pcs	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 Pcs	0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 Pcs	0/1
6	DC Operating Life	If = 20 mA	1000 HRS	76 Pcs	0/1
7	High Temperature / High Humidity	85°C/85% RH	1000 HRS	76 Pcs	0/1



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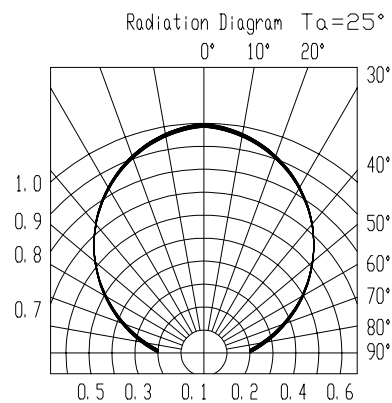
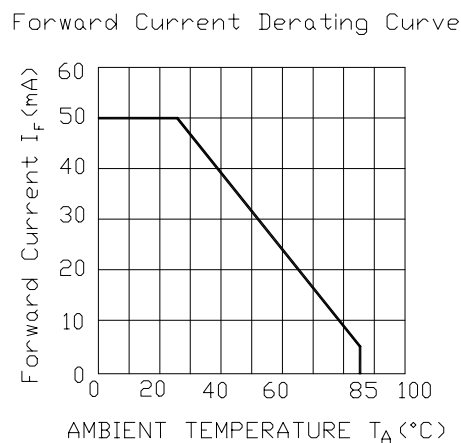
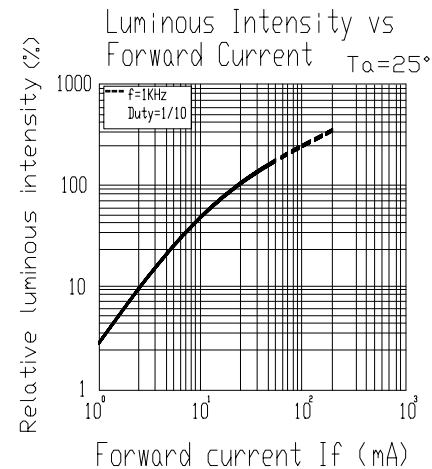
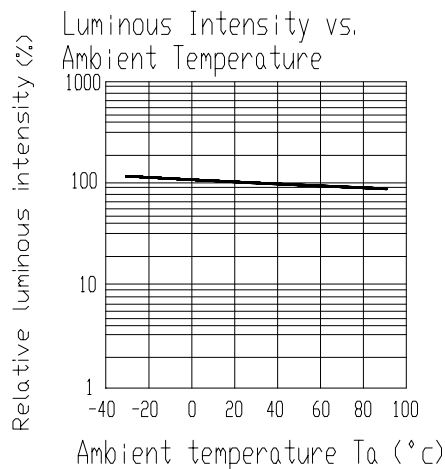
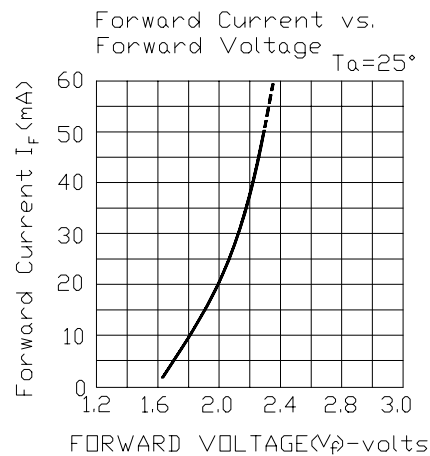
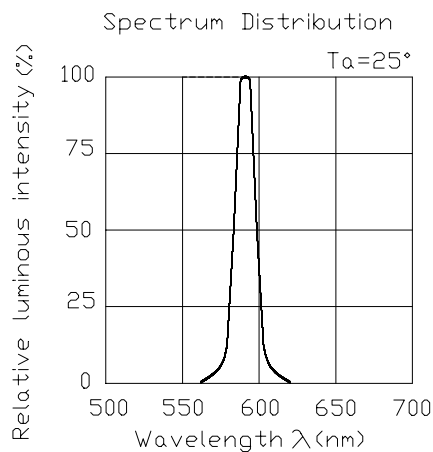
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## Typical Electro-Optical Characteristic Curves





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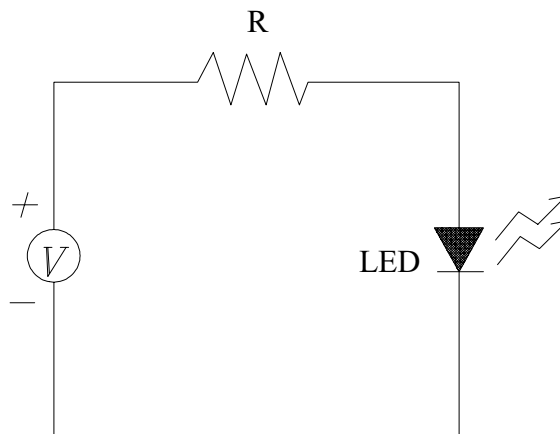
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## ■ Test Circuit



## ■ 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 R.H. are :  $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$  , R.H.60%.

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

Otherwise , they should be keep in a dampproof box with desiccants.

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  $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$  , R.H.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.



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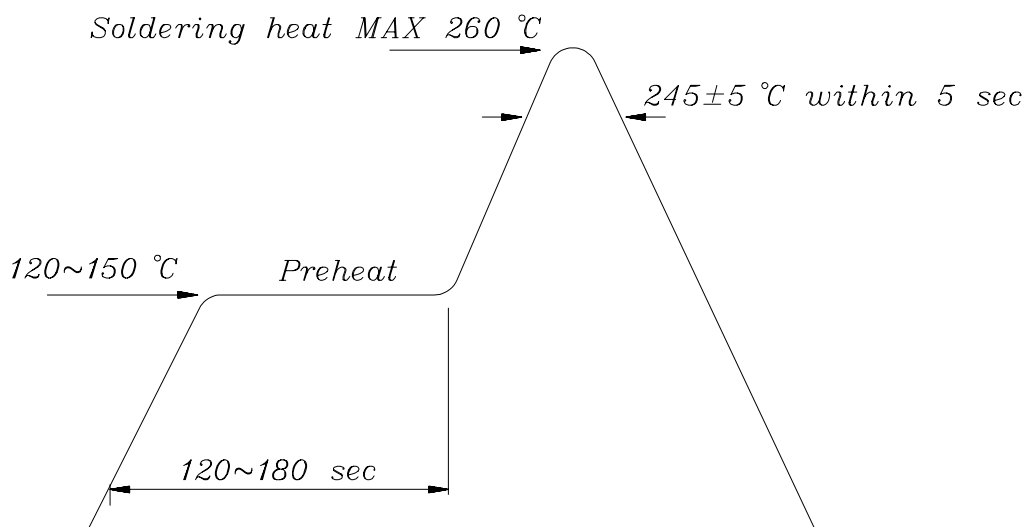
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### ■ Soldering heat reliability ( DIP )

Please refer to the following figure :

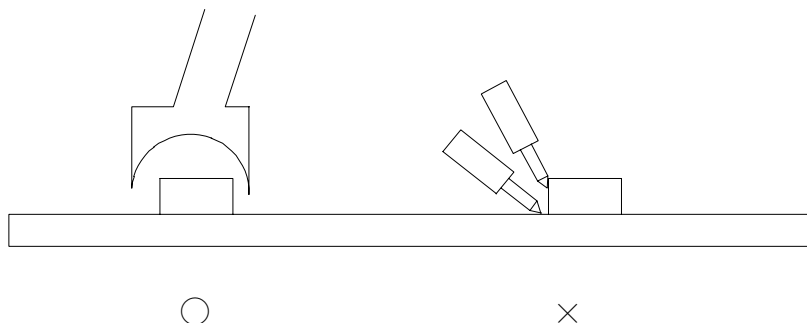


### ■ Soldering Iron

Basic spec is  $\leq 5$  sec when 260°C .If temperature is higher, time should be shorter (+10°C → -1sec). 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 260°C .
2. Copper foil can not be touched by the head of iron.
3. Twin-head type is preferred.





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■ Reflow Temp / Time :

