



**PART NO.:** 19-21 UGC/S745/TR8

Device Number : DSE-191-093 REV. 1.0

**0.8mm Height Flat Top LED**

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**Features :**

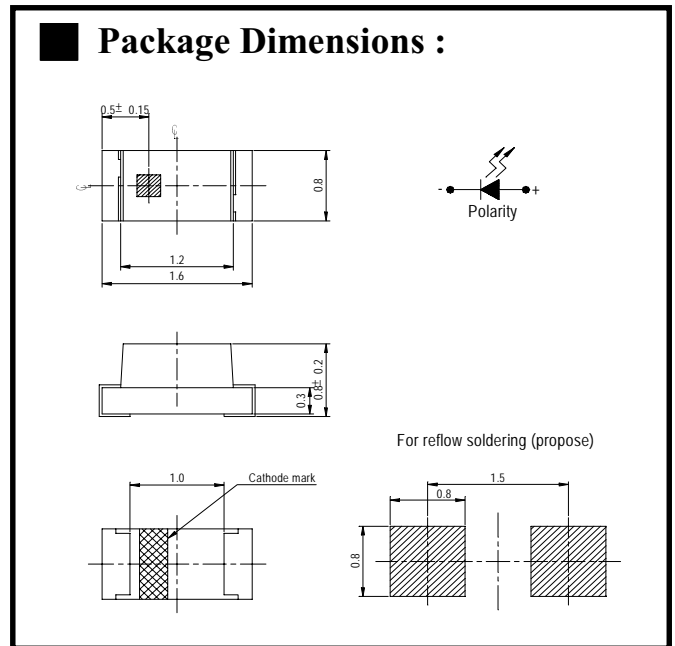
- Package in 8mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Mono-color type.

**Descriptions :**

- The 19-21 SMD is much smaller than lead frame type components, demands smaller board size, enhances packing density, reduces storage space and finally smaller equipment is required.
- Besides, light weight 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.



**Notes :**

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

PART NO.	Chip		Lens Color
	Material	Emitted Color	
19-21 UGC/S745/TR8	AlGaInP	Super Green	Water Clear

OFFICE: NO. 25, Lane 76, Sec. 3, Chung Yang Rd., Tucheng 236, Taipei, Taiwan, R.O.C.

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<http://www.everlight.com>



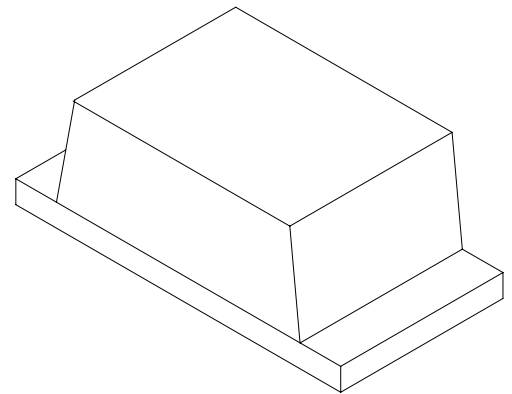
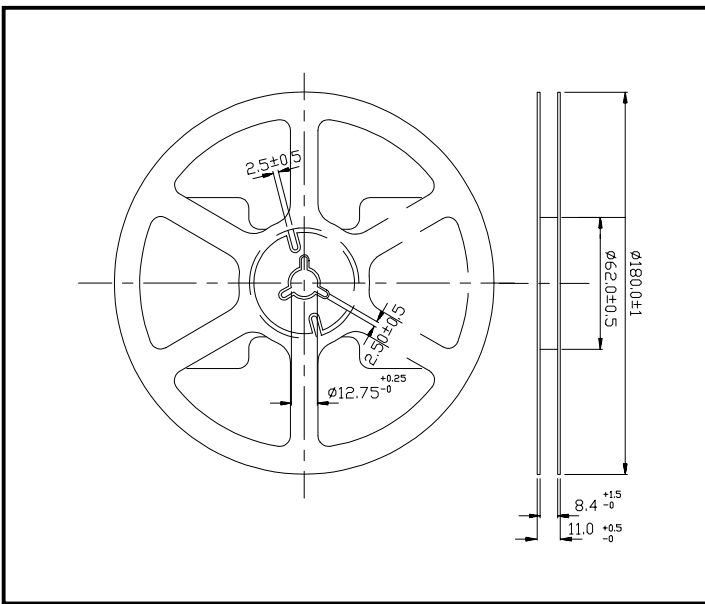
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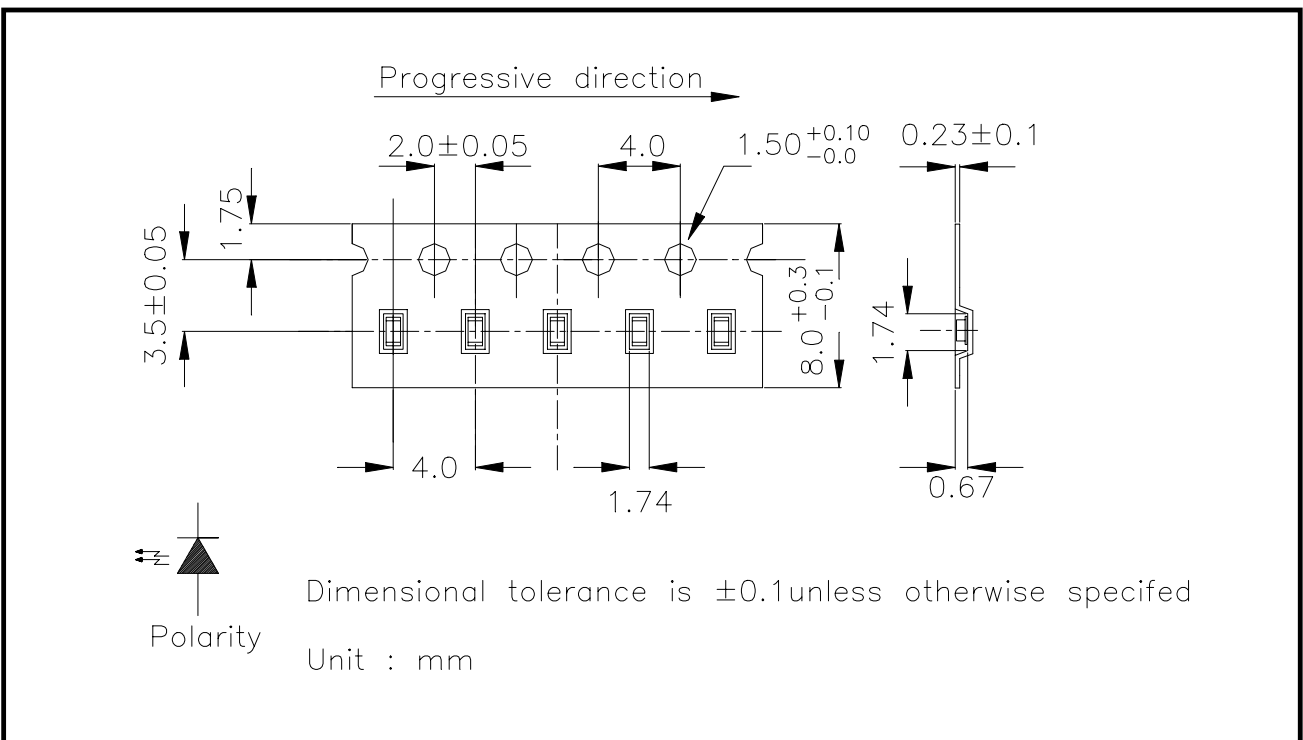
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■ Package Dimensions :



■ Loaded quantity per reel 3000 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>	40	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>	100	mW
Peak Forward Current(Duty 1/10 @ 1KHz)	I <sub>F</sub> (Peak)	180	mA

**■ Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	25	50	-----	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ 1/2	-----	100	-----	deg	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	-----	573	-----	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	-----	571	-----	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	Δλ	-----	20	-----	nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	1.6	2.3	2.6	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	-----	-----	50	μA	V <sub>R</sub> =5V



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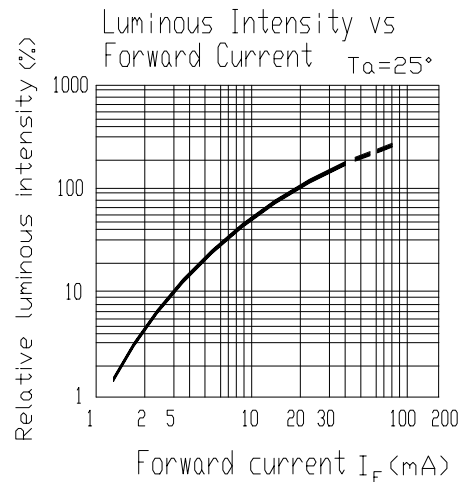
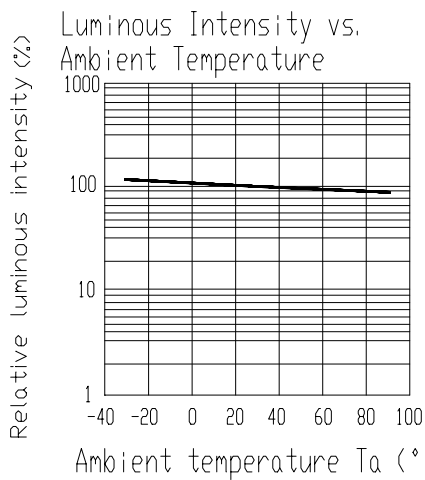
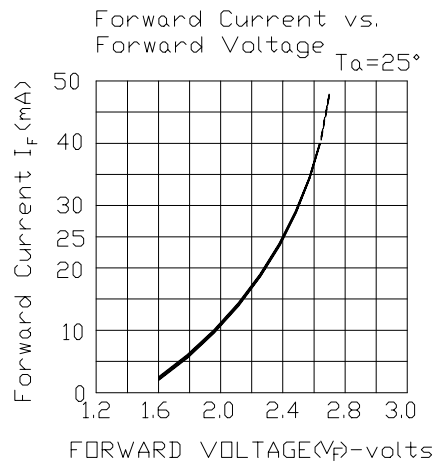
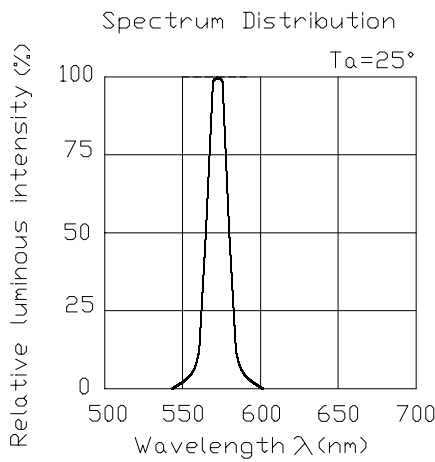
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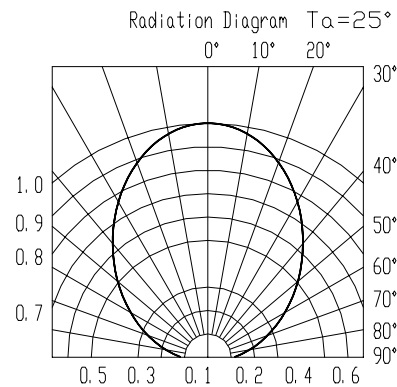
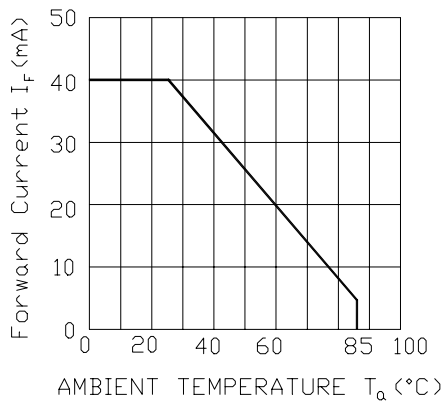
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■ Typical Electro-Optical Characteristic Curves :



Forward Current Derating Curve





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**Reliability Test**

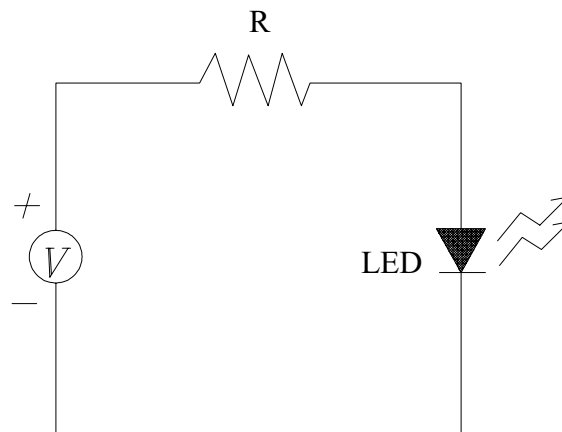
NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP. : 260°C ± 5 °C	5 SEC.	76 PCS	0/1
2	Temperature Cycle	H : +85°C 30min. ∫ 5 min. L : -55°C 30min.	50 CYCLES	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min. ∫ 10 sec. L : -10°C 5min.	50 CYCLES	76 PCS	0/1
4	High Temperature Storage	TEMP. : 100°C	1000 HR.	76 PCS	0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 HR.	76 PCS	0/1
6	DC Operating Life	I <sub>F</sub> = 20 mA	1000 HR.	76 PCS	0/1
7	High Temperature / High Humidity	85°C/RH85%	1000 HR.	76 PCS	0/1

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**Test Circuit :****Precautions For Use :**

## 1. Over-current-proof

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

## 2. Storage time

2.1 The operation 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 desiccant. 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  $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$  , RH60%, 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 turns into pink (normal = blue) , you should treat them in the same conditions as 2.3.

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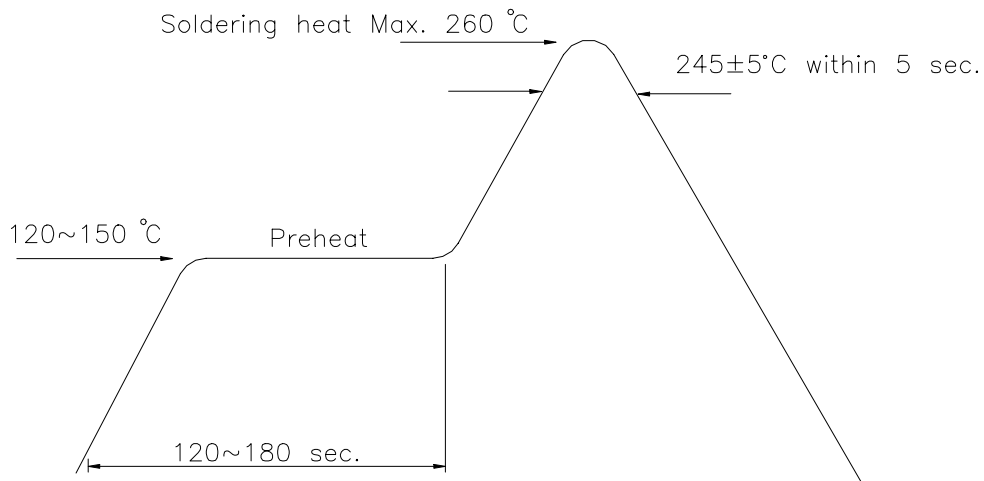
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## ■ Soldering heat reliability ( DIP ) :

Please refer to the following figure :

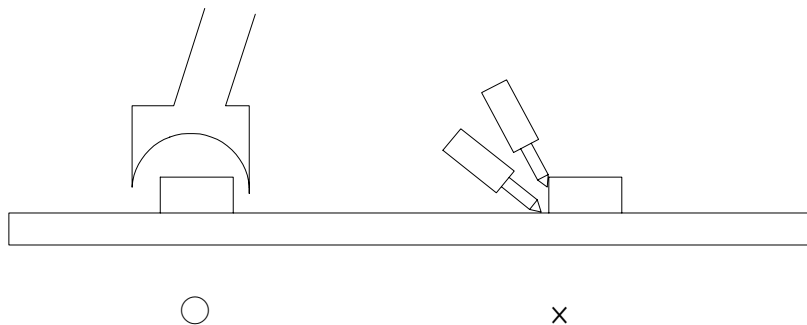


## ■ Soldering Iron :

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. The head of iron can not touch copper foil.
3. Twin-head type is preferred.



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**Reflow T**

