



MODEL NO: 19-21SURC/S530-A4/TR8

Device Number : DSE-191-039 REV. 1.1

**0.8mm Height Flat Top LEDs**

ECN : Page: 1/8

**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.

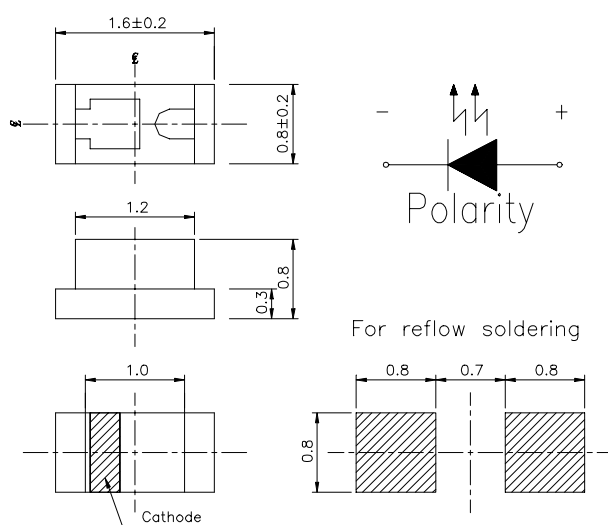
**Descriptions :**

- 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.

**Package Dimensions :**



**Notes :**

Dimensional tolerances is  $\pm 0.1\text{mm}$  unless otherwise specified.

Unit = mm

PART NO	Chip		Lens Color
	Material	Emitted Color	
19-21SURC/S530-A4/TR8	AlGaInP	Hyper Red	Water Clear

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<http://www.everlight.com>



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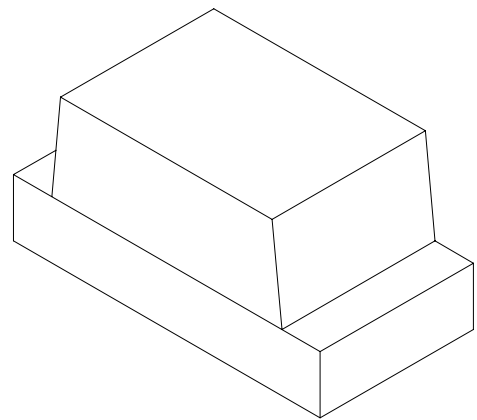
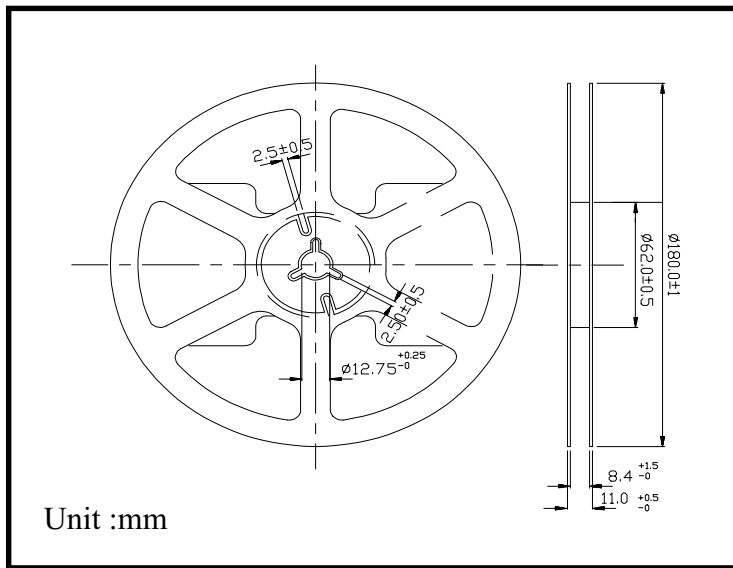
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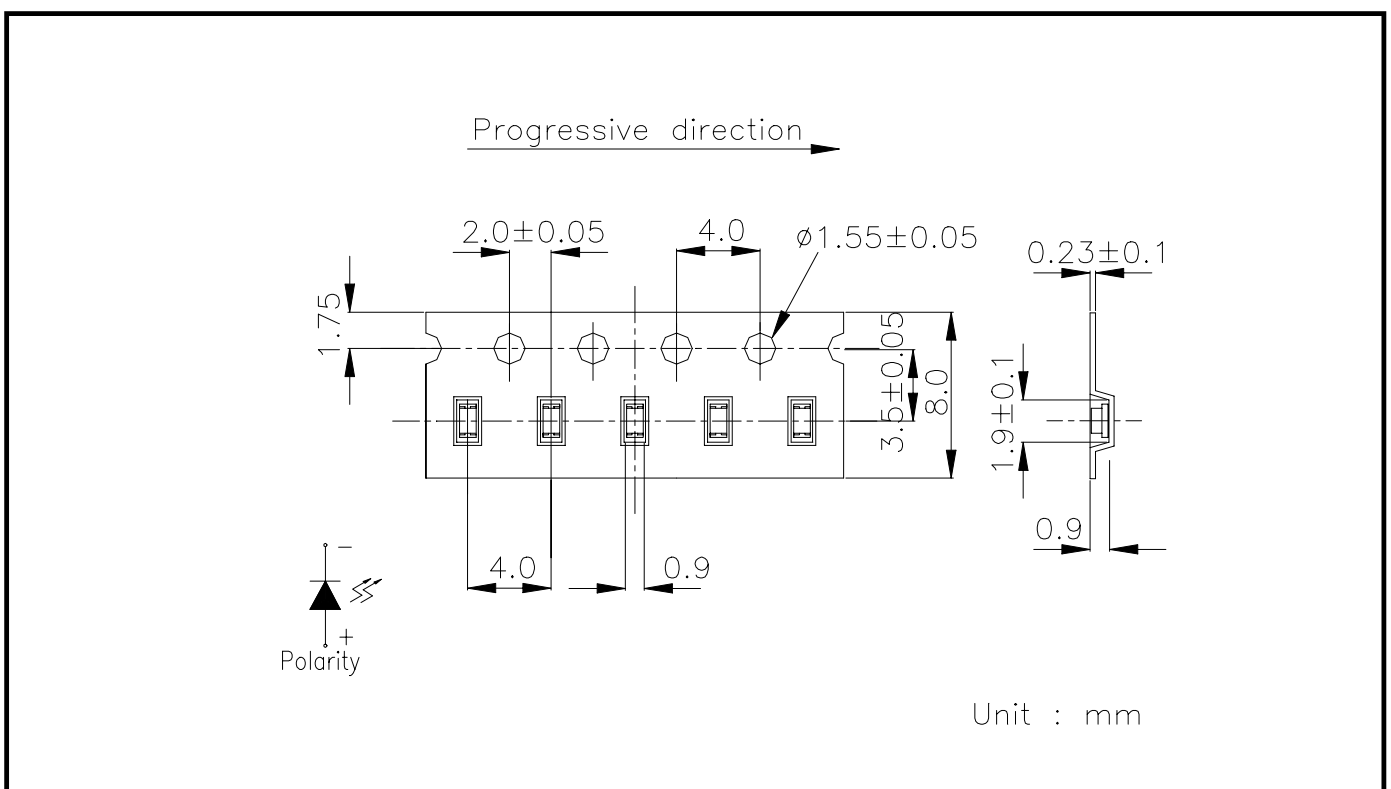
**0.8mm Height Flat Top LEDs**

ECN : Page: 2/8

### Package Dimensions :



### Loaded quantity per reel 3000 PCS/reel :





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MODEL NO: 19-21SURC/S530-A4/TR8

Device Number : DSE-191-039 REV. 1.1

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ECN : Page: 3/8

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

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>F</sub>	5	V
Forward Current	I <sub>F</sub>	25	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
Electrostatic Discharge	ESD	2000	V
Power Dissipation	P <sub>d</sub>	60	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I <sub>F</sub> (Peak)	160	mA

■ **Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	-----	5	-----	mcd	I <sub>F</sub> =2mA
		51	76	-----	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ 1/2	-----	100	-----	deg	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	-----	632	-----	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	-----	624	-----	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	△λ	-----	20	-----	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	μA	V <sub>R</sub> =5V



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MODEL NO: 19-21SURC/S530-A4/TR8

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ECN : Page: 4/8

## ■ Reliability Test Items And Conditions

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	I <sub>F</sub> = 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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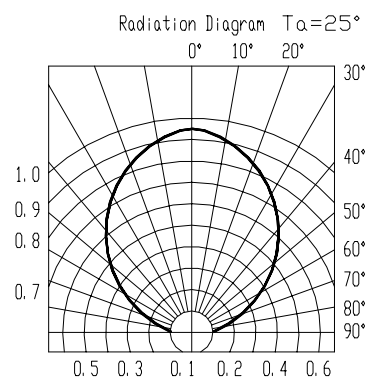
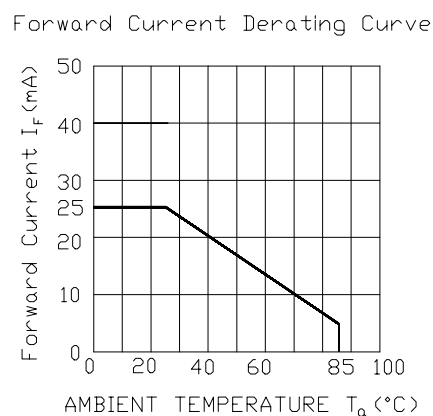
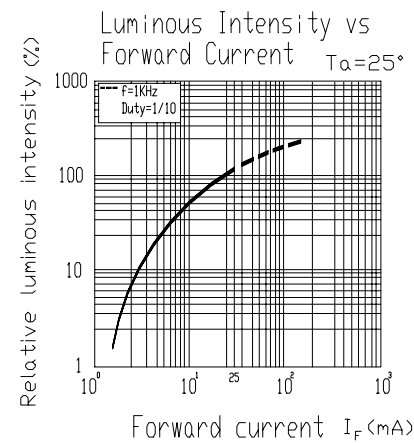
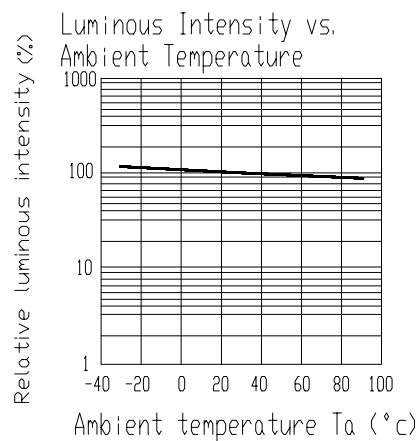
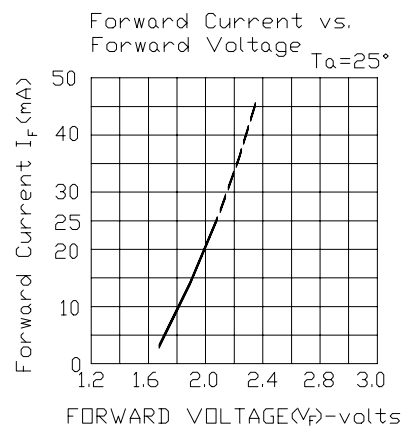
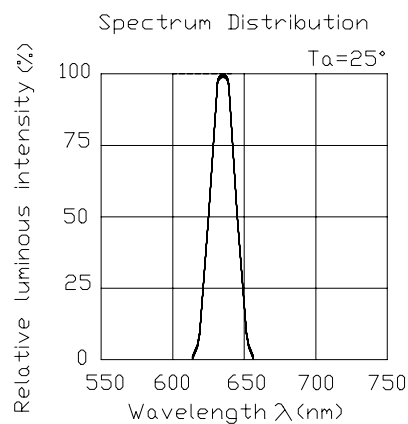
MODEL NO: 19-21SURC/S530-A4/TR8

Device Number : DSE-191-039 REV. 1.1

0.8mm Height Flat Top LEDs

ECN : Page: 5/8

## Typical Electro-Optical Characteristic Curves





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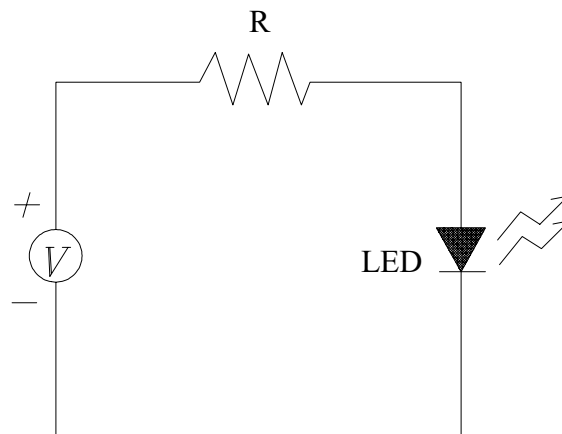
MODEL NO: 19-21SURC/S530-A4/TR8

Device Number : DSE-191-039 REV. 1.1

**0.8mm Height Flat Top LEDs**

ECN : Page: 6/8

## ■ 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 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 kept 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 turns into pink. (normal=blue) , you should treat them in the same conditions as 2.3.



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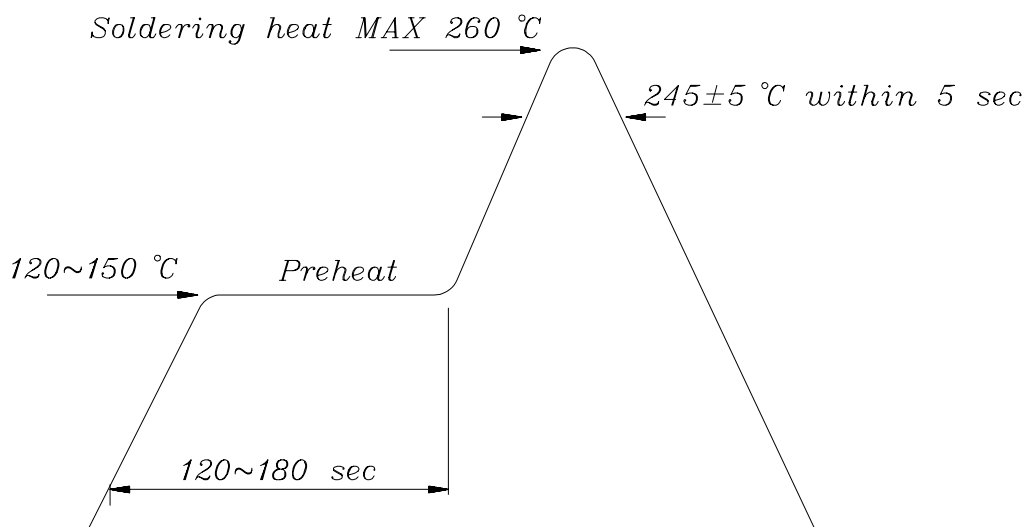
Device Number : DSE-191-039 REV. 1.1

**0.8mm Height Flat Top LEDs**

ECN : Page: 7/8

### ■ Soldering heat reliability ( DIP )

Please refer to the following figure :

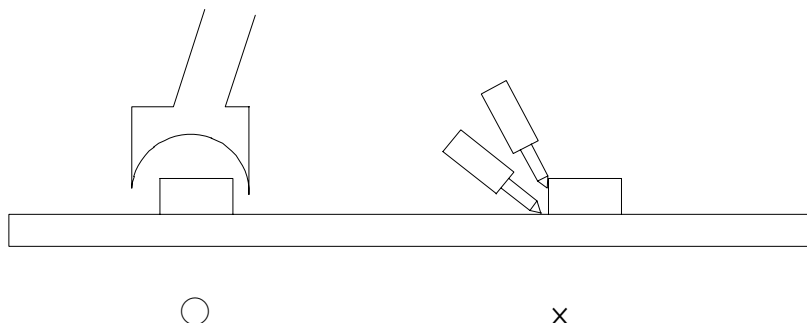


### ■ Soldering Iron

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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*0.8mm Height Flat Top LEDs*

ECN : Page: 8/8

■ Reflow Temp / Time :

