



EVERLIGHT ELECTRONICS CO., LTD.

MODEL NO: 93-21SURC/S530-A4/TR8

Device Number : DSE-931-031 REV. 1.0

High Performance SMD LED with Reflector

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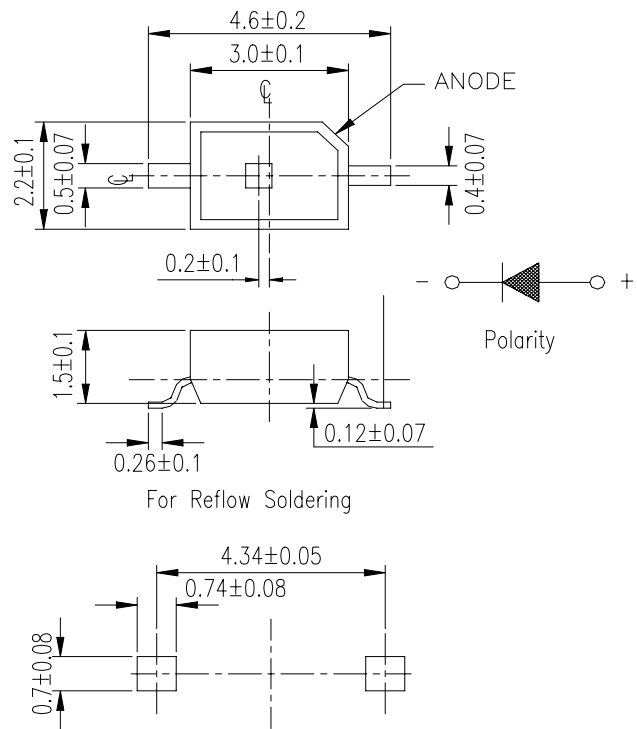
Features :

- Package in 12mm tape on 7" diameter reels.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Eia std package.
- IC compatible.

Applications :

- Automotive: backlighting in dashboard and switch,
- Telecommunication: indicator and backlighting in telephone and fax.
- Indicator and backlight for audio and video equipment.
- Indicator and backlight for battery driven equipment.
- Small indicator for outdoor applications.
- Indicator and backlight in office equipment.
- Flat backlight for LED, switches and symbol.
- General use.

Package Dimension :



Notes :

Tolerances Unless Dimension $\pm 0.1\text{mm}$

Angle $\pm 0.5^\circ$

Unit = mm

PART NO	CHIP		Lens Color
	Material	Emitted Color	
93-21SURC/S530-A4/TR8	AlGaInP	Hyper Red	Water Clear

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<http://www.everlight.com>



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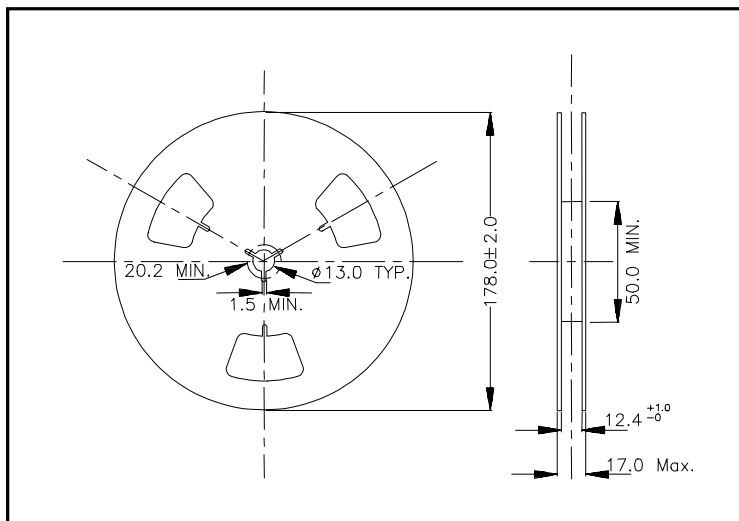
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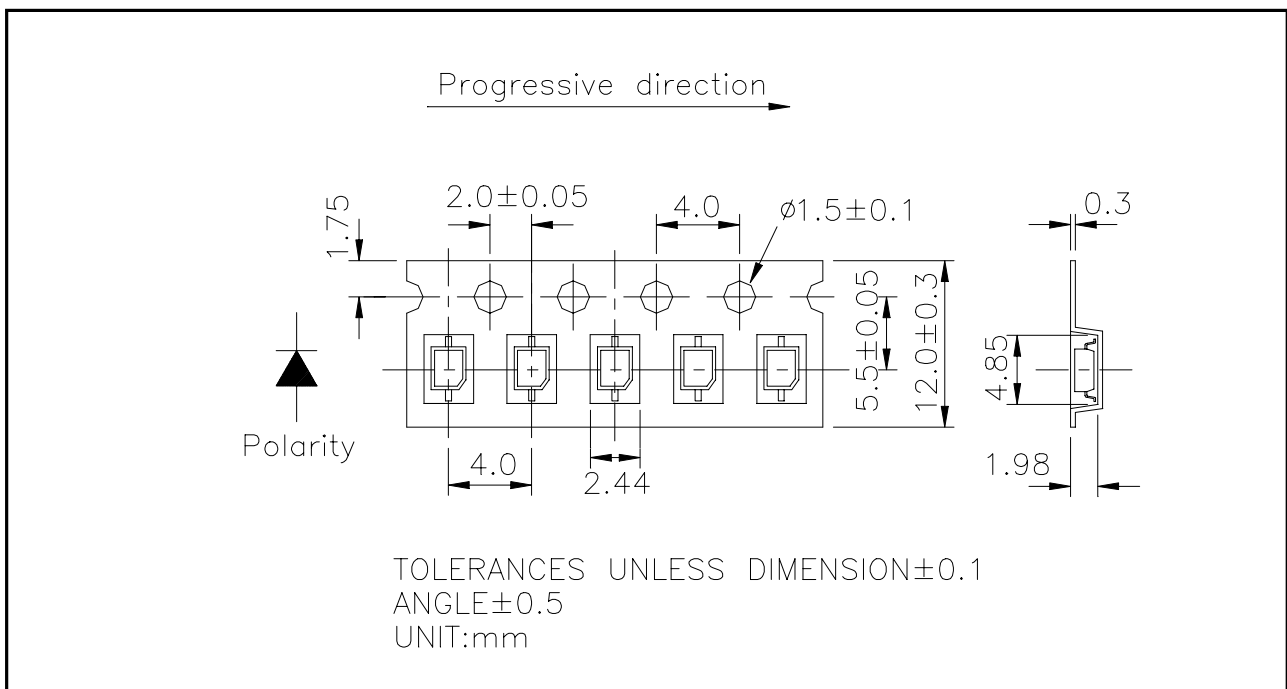
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■ Package Dimension :



■ 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 _r	5	V
Forward Current	I _f	25	mA
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Soldering Temperature	T _{sol}	260(for 5second)	°C
Power Dissipation	P _d	60	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _f (Rec.)	160	mA

■ **Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	I _v	55	82	-----	mcd	I _f =20mA
Viewing Angle	2 θ 1/2	-----	130	-----	deg	I _f =20mA
Peak Wavelength	λ _p	-----	632	-----	nm	I _f =20mA
Dominant Wavelength	λ _d	-----	624	-----	nm	I _f =20mA
Spectrum Radiation Bandwidth	△ λ	-----	20	-----	nm	I _f =20mA
Forward Voltage	V _f	-----	2.0	2.4	V	I _f =20mA
Reverse Current	I _r	-----	-----	10	μ A	V _r =5V



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■ 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
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 Pcs	0/1
5	High 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

Products evaluated according to the above standard reliability criteria.



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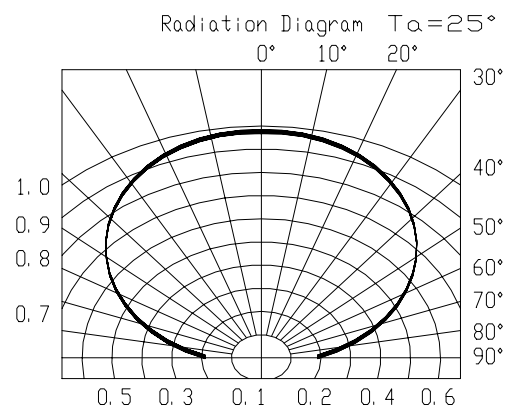
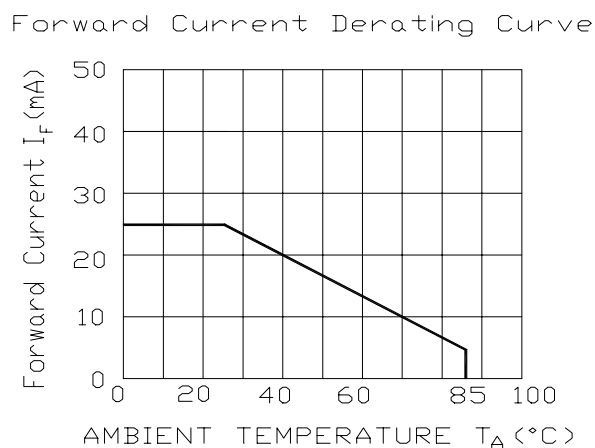
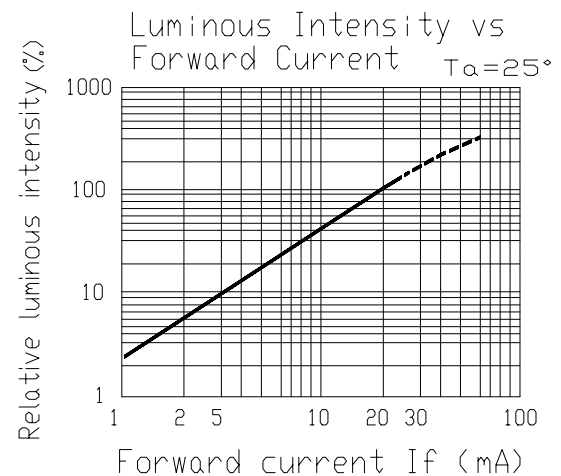
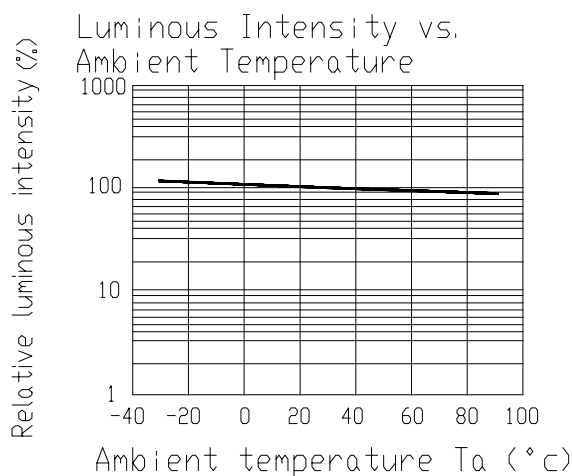
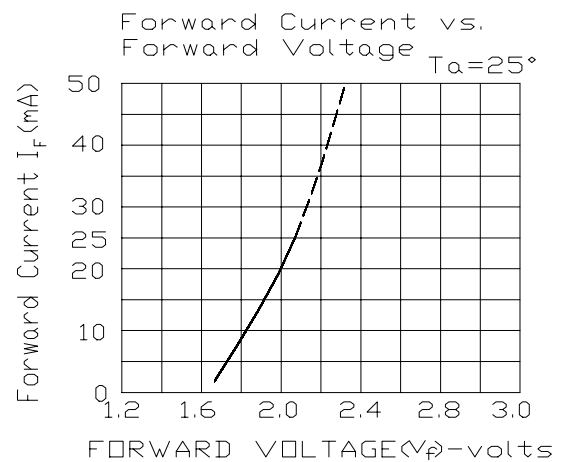
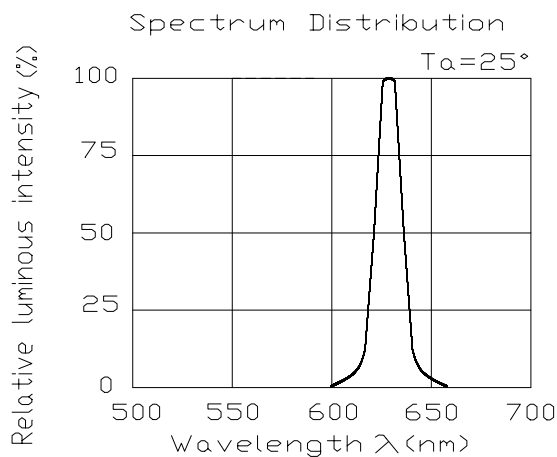
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Typical Electro-Optical Characteristic Curves





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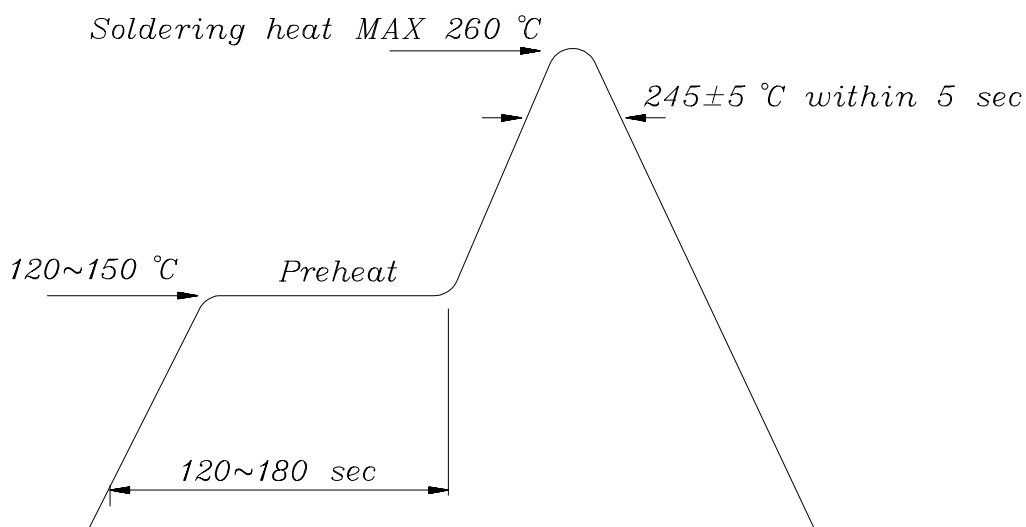
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■ Soldering heat reliability (DIP)

Please refer to the following figure :

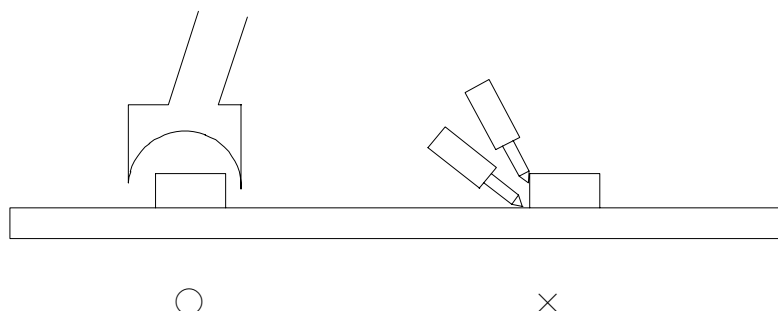


■ Soldering Iron

Basic spec is ≤ 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 Temp / Time :

