



EVERLIGHT ELECTRONICS CO., LTD.

MODEL NO: 15-23B SURSYGUBC/S530-A2/TR8 Device Number : DSE-153-004 REV. 1.0

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.

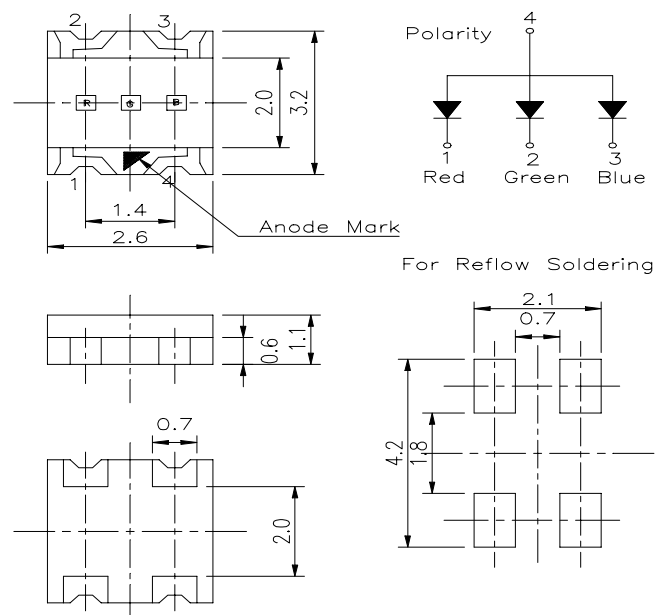
■ Description :

- The 15-23B 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.

■ Applications :

- Automotive: backlight in dashboards and switches
- Telecommunication: indicator and backlight in telephone and fax
- Flat backlight for LCD's, switches and symbols.
- General use.

■ Package Dimensions :



■ Notes:

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

Angle $\pm 0.5^\circ$

Unit = mm

PART NO	CHIP		Lens Color
	Material	Emitted Color	
15-23B SURSYGUBC/S530-A2/TR8	AlGaInP	Hyper Red	Water Clear
	AlGaInP	Super Yellow Green	
	GaN/SiC Substrate	Blue	

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<http://www.everlight.com>



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■ **Absolute Maximum Ratings at Ta = 25°C (SUR)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	Vr	5	V
Forward Current	If	25	mA
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +90	°C
Soldering Temperature	Tsol	260 (for 5 second)	°C
Electrostatic Discharge	ESD	2000	V
Power Dissipation	Pd	60	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	If(Peak)	160	mA

■ **Electronic Optical Characteristics : (SUR)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	Iv	-----	2	-----	mcd	If=2mA
		17	40	-----	mcd	If=20mA
Viewing Angle	2 θ 1/2	-----	120	-----	deg	If=20mA
Peak Wavelength	λ p	-----	632	-----	nm	If=20mA
Dominant Wavelength	λ d	-----	624	-----	nm	If=20mA
Spectrum Radiation Bandwidth	△ λ	-----	20	-----	nm	If=20mA
Forward Voltage	Vf	-----	2.0	2.4	V	If=20mA
Reverse Current	Ir	-----	-----	10	μ A	Vr=5V



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■ **Absolute Maximum Ratings at Ta = 25°C (SYG)**

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 5 second)	°C
Electrostatic Discharge	ESD	2000	V
Power Dissipation	P _d	60	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _f (Peak)	160	mA

■ **Electronic Optical Characteristics (SYG)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	I _v	-----	1	-----	mcd	I _f =2mA
		11	17	-----	mcd	I _f =20mA
Viewing Angle	2 θ 1/2	-----	120	-----	deg	I _f =20mA
Peak Wavelength	λ _p	-----	575	-----	nm	I _f =20mA
Dominant Wavelength	λ _d	-----	573	-----	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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■ **Absolute Maximum Ratings at Ta = 25°C (UB)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _r	5	V
Forward Current	I _f	30	mA
Operating Temperature	T _{opr}	-20 ~ +80	°C
Storage Temperature	T _{stg}	-30 ~ +90	°C
Soldering Temperature	T _{sol}	260 (for 5 second)	°C
Electrostatic Discharge	ESD	1000	V
Power Dissipation	P _d	140	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _f (Peak)	70	mA

■ **Electronic Optical Characteristics (UB)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	I _v	-----	1	-----	mcd	I _f =2mA
		9	15	-----	mcd	I _f =20mA
Viewing Angle	2 θ 1/2	-----	120	-----	deg	I _f =20mA
Peak Wavelength	λ _p	-----	428	-----	nm	I _f =20mA
Dominant Wavelength	λ _d	-----	466	-----	nm	I _f =20mA
Spectrum Radiation Bandwidth	△ λ	-----	65	-----	nm	I _f =20mA
Forward Voltage	V _f	-----	3.8	4.5	V	I _f =20mA
Reverse Current	I _r	-----	-----	50	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
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

Products are evaluated according to the above standard reliability criteria.



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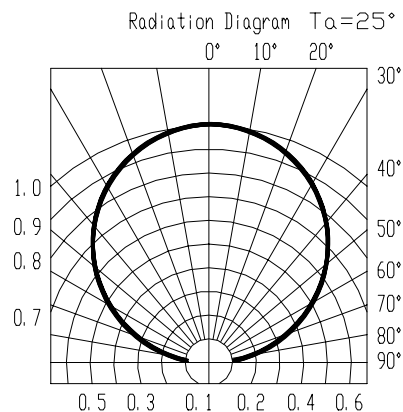
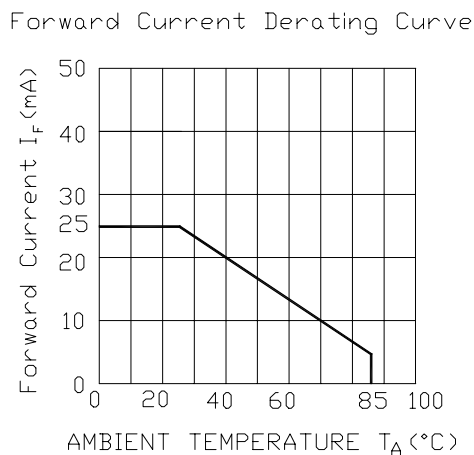
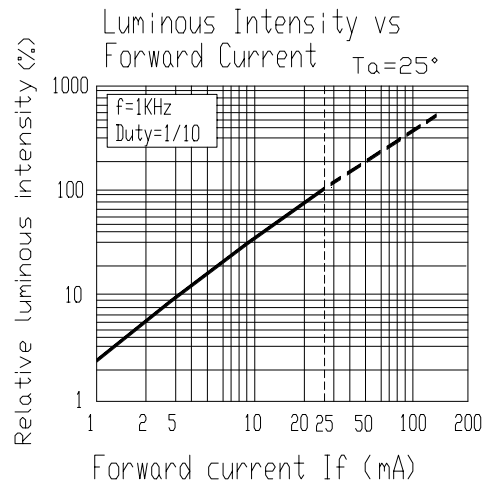
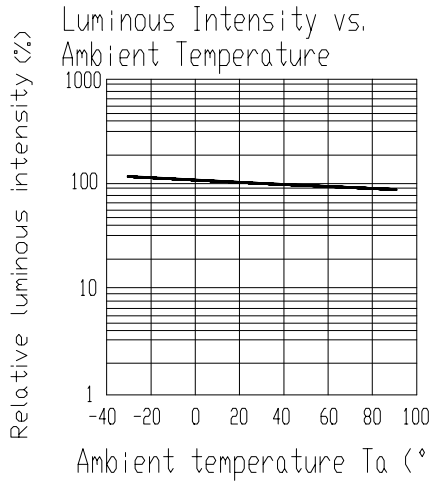
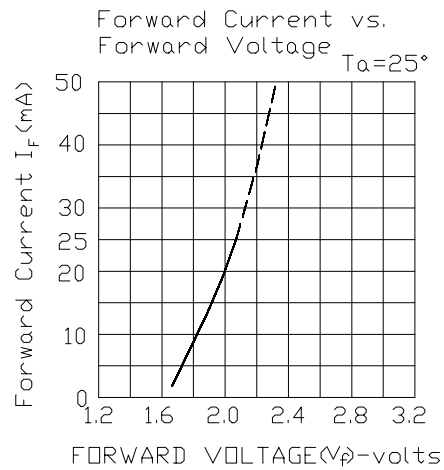
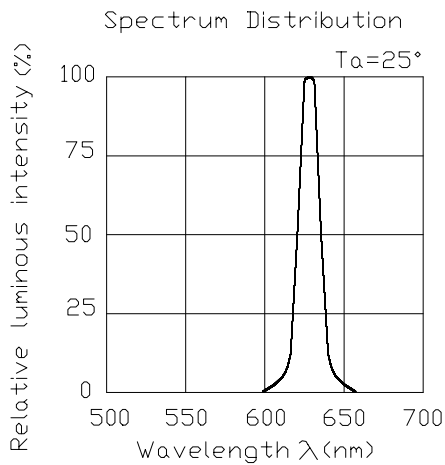
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Typical Electro-Optical Characteristic Curves(SUR)



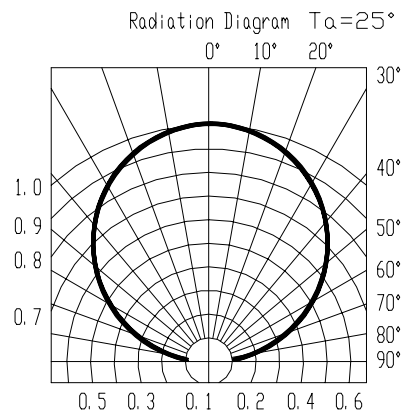
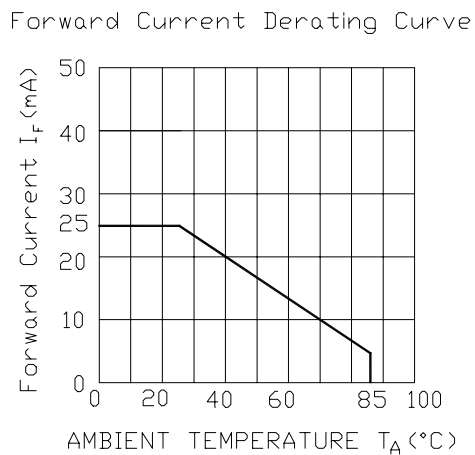
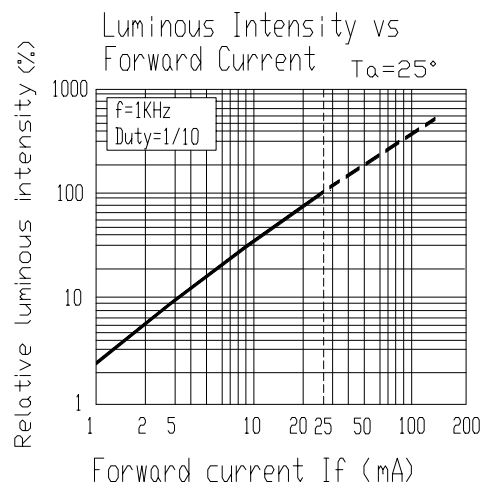
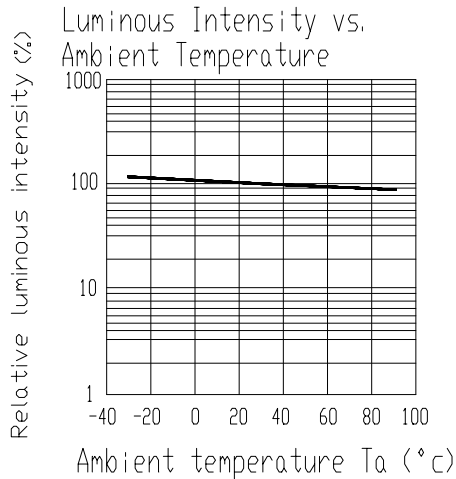
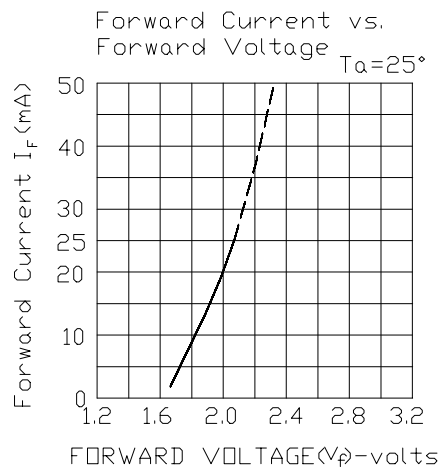
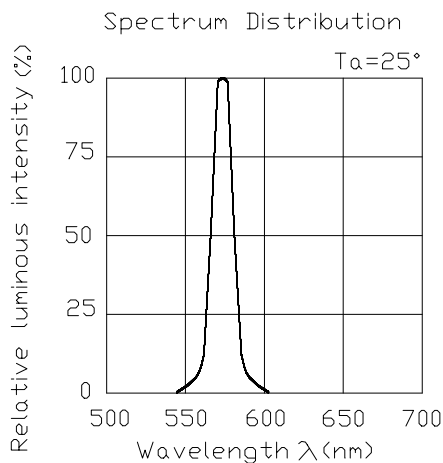


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Typical Electro-Optical Characteristic Curves(SYG)



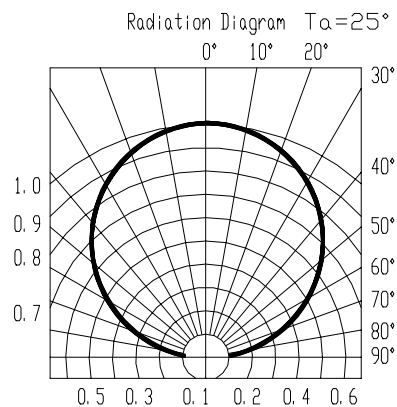
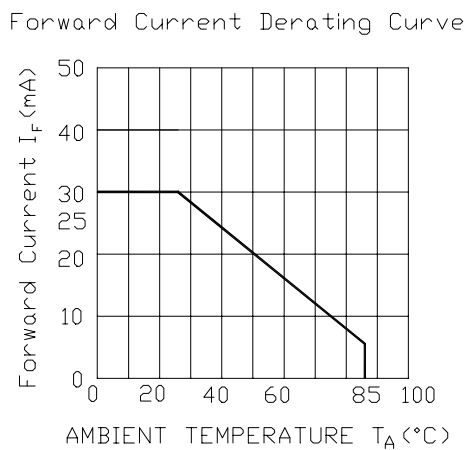
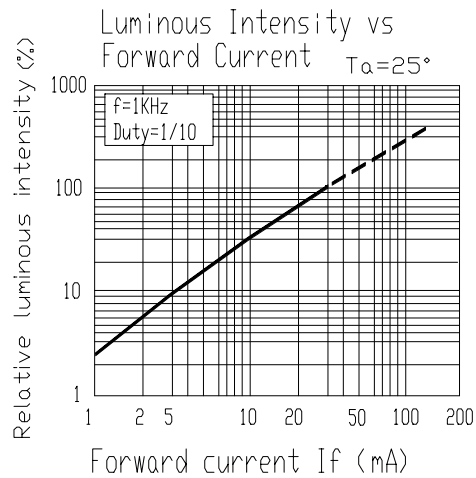
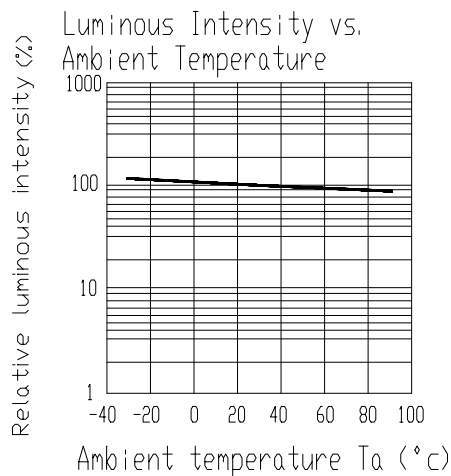
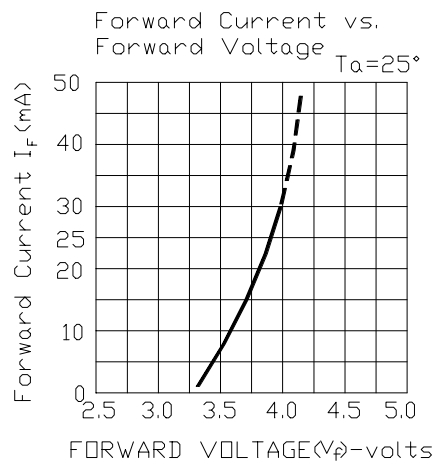
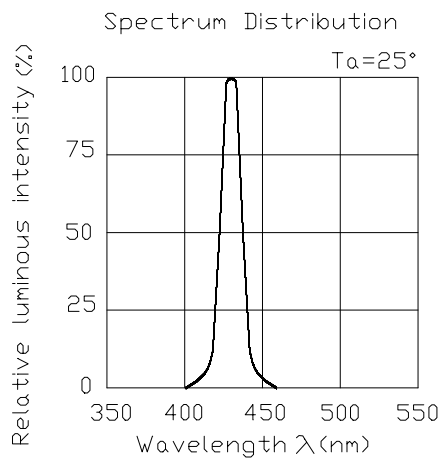


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Typical Electro-Optical Characteristic Curves(UB)



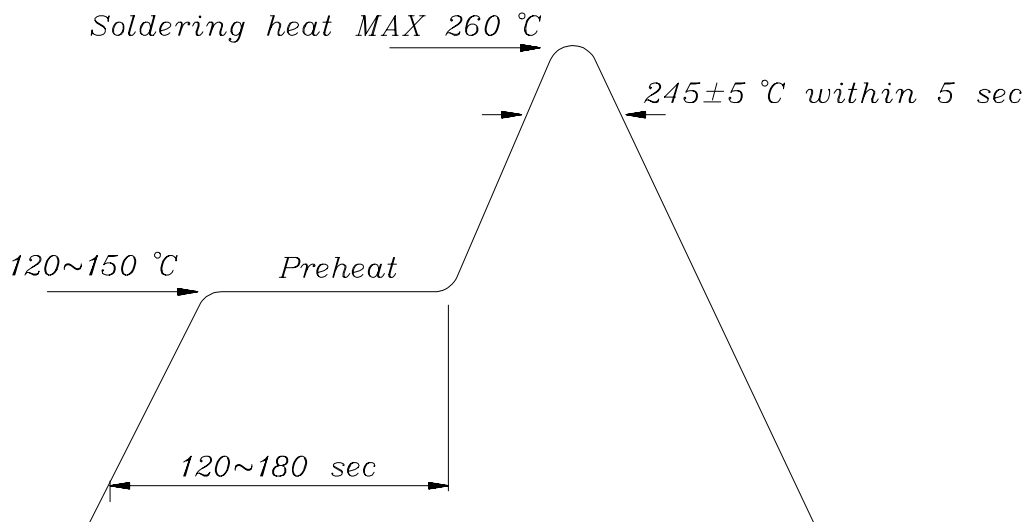


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■ Soldering heat reliability (DIP)

Please refer to the following figure :

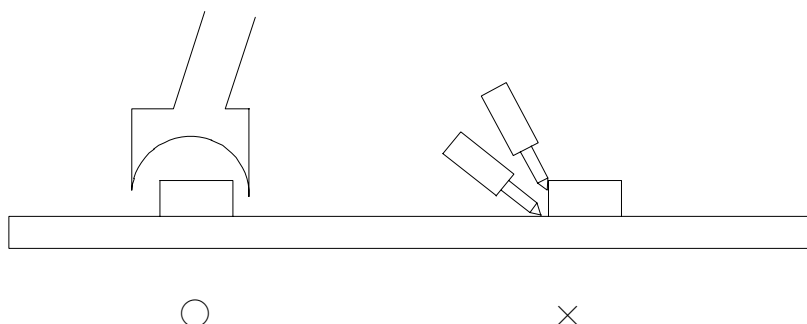


■ Soldering Iron

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 :

