EVERLIGHT ELECTRONICS CO., LTD.

PART NO.: 19-21SUBC/S400-XX/TR8 Device Number： DSE-191-125 REV. 1.0

0.8mm Height Flat Top LEDs

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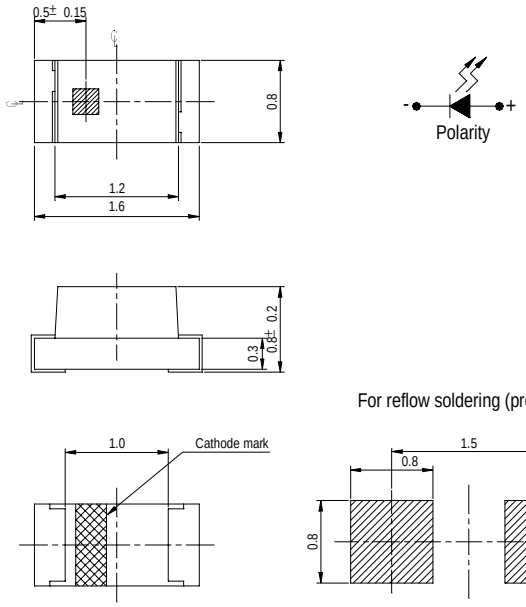
Features：

- 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 Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature applications, etc.

Package Dimensions：



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 ± 0.1mm

Angle± 0.5°

Unit = mm

PART NO.	Chip		Lens Color
	Material	Emitted Color	
19-21SUBC/S400-XX/TR8	InGaN	Super Blue	Water Clear

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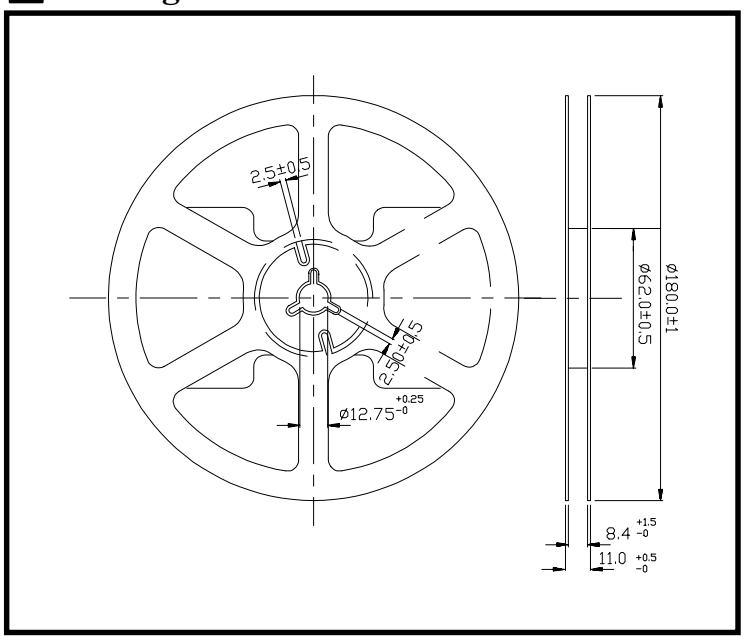
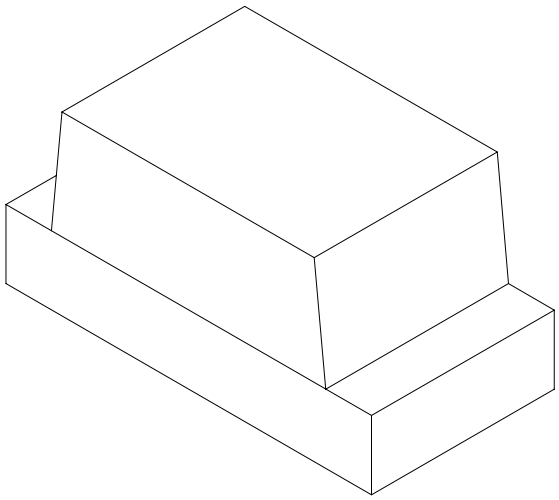
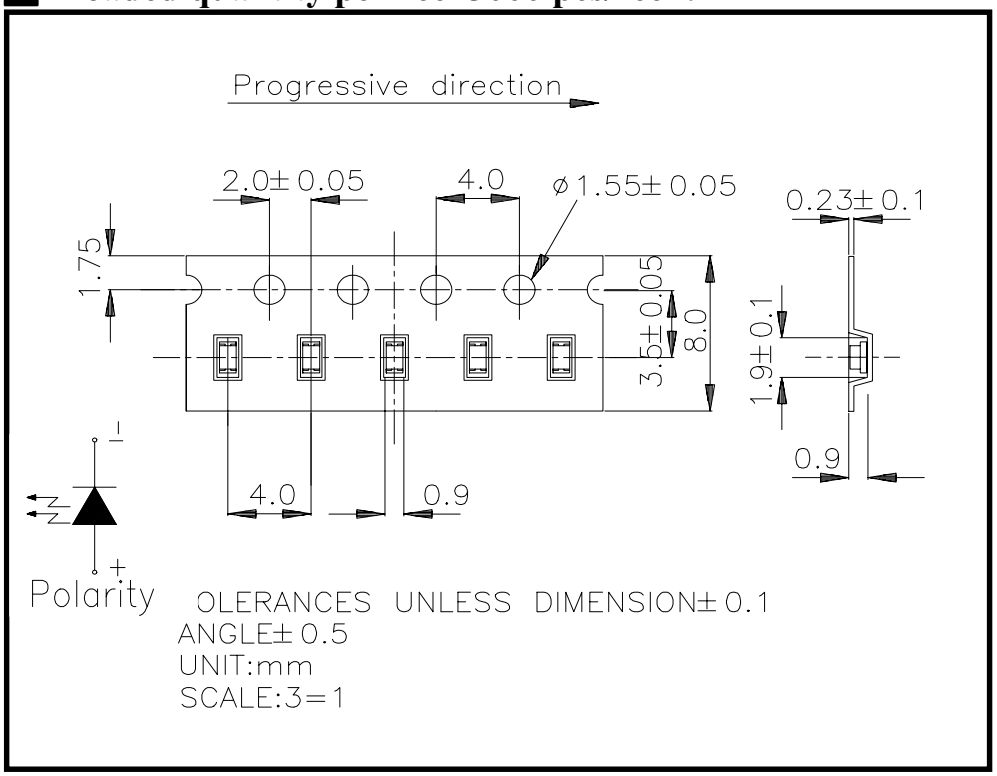
■ Package Dimensions :





■ Loaded quantity per reel 3000 pcs/reel :



■ Absolute Maximum Ratings at Ta = 25℃

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	25	mA
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Soldering Temperature	Tsol	260 (for 5 second)	℃
Electrostatic Discharge	ESD	150	V
Power Dissipation	Pd	120	mW
Peak Forward Current(Duty 1/10 @ 1KHz)	I_F(Peak)	100	mA

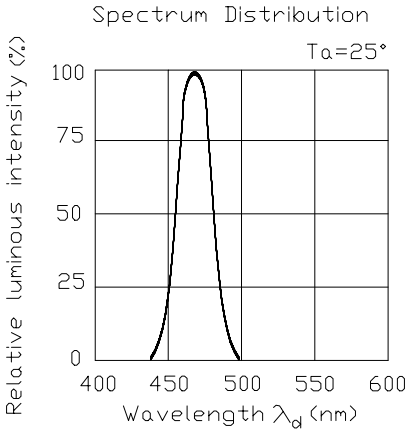
■ Electronic Optical Characteristics :

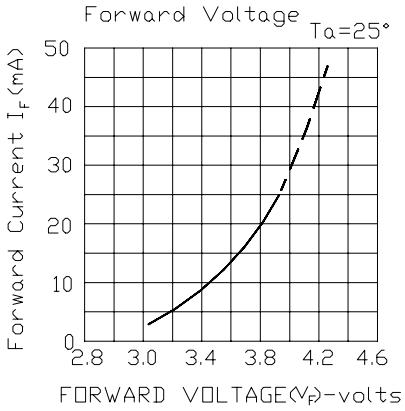
Parameter	Symbol	*Chip Rank	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	A2	-----	1	-----	mcd	IF=2mA
		A2	12	18	-----		IF=20mA
		A3	-----	2	-----		IF=2mA
		A3	16	25	-----		IF=20mA
		A4	-----	3	-----		IF=2mA
		A4	22	32	-----		IF=20mA
Viewing Angle	2θ 1/2	-----	-----	100	-----	deg	IF=20mA
Peak Wavelength	λ p	-----	-----	-----	-----	nm	IF=20mA
Dominant Wavelength	λ d	-----	-----	470	-----	nm	IF=20mA
Spectrum Radiation Bandwidth	△λ	-----	-----	35	-----	nm	IF=20mA
Forward Voltage	VF	-----	3.2	3.8	4.3	V	IF=20mA
Reverse Current	IR	-----	-----	-----	50	μA	VR=5V

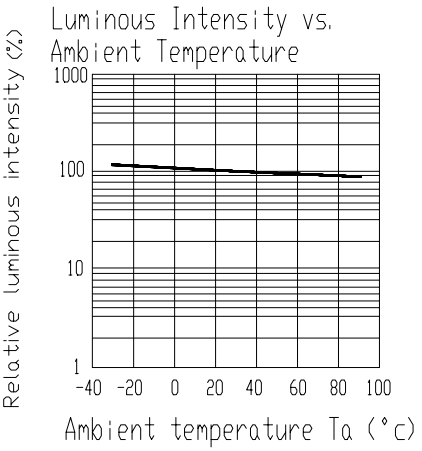
*19-21SUBC/S400-XX/TR8

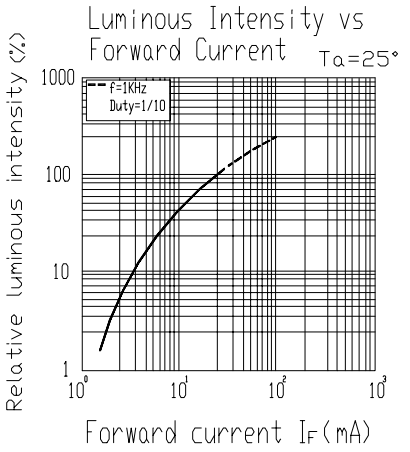
Chip Rank

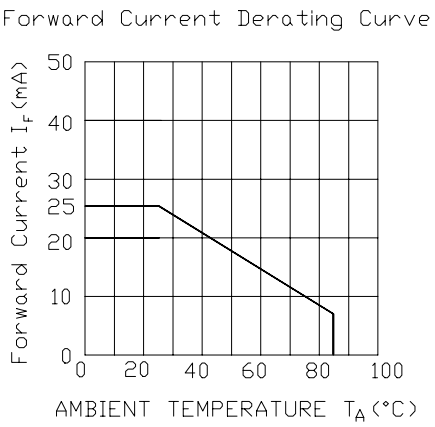
Typical Electro-Optical Characteristic Curves

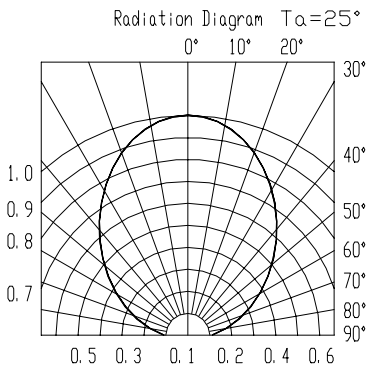








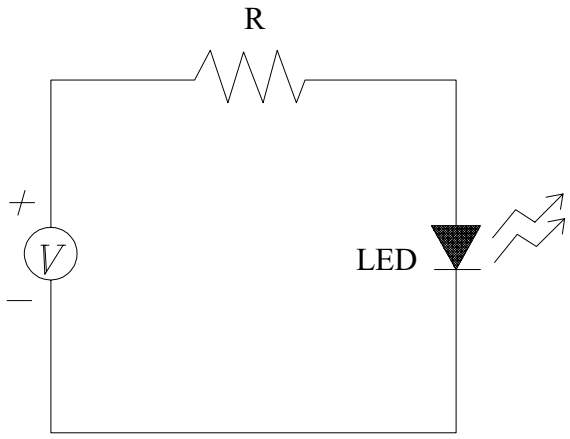




■ Reliability Test Items And Conditions:

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

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 RH are : 5℃~35℃, RH60%.

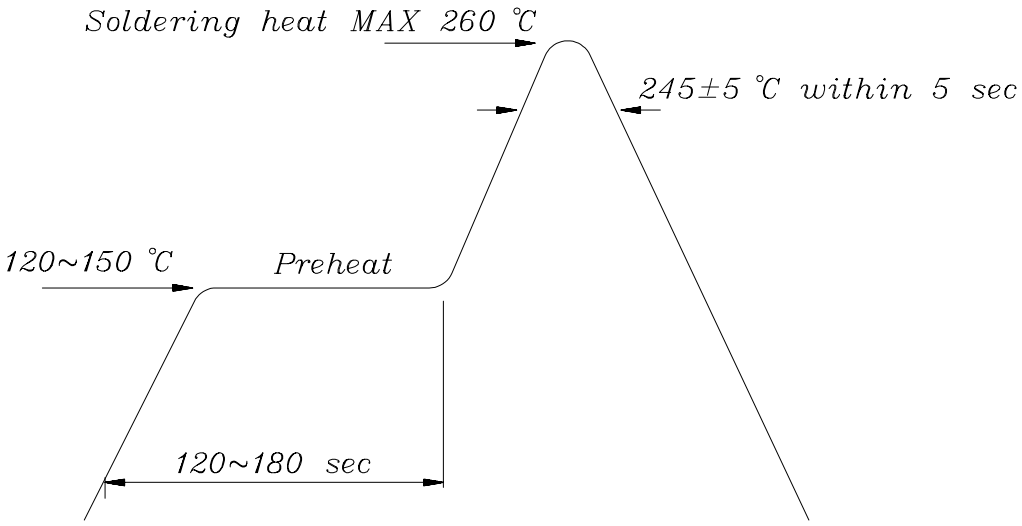
2.2 Once the package is opened, the products should be used within a week. Otherwise, they should be keep in a damp proof box with desiccanting agent. Considering the tape life , we suggest our customers to use our products within a year(from production date).

2.3 If opened more than one week in an atmosphere 5℃~35℃, RH60%, they should be treated at 60℃± 5℃ 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.

■ Soldering heat reliability (DIP)

Please refer to the following figure :

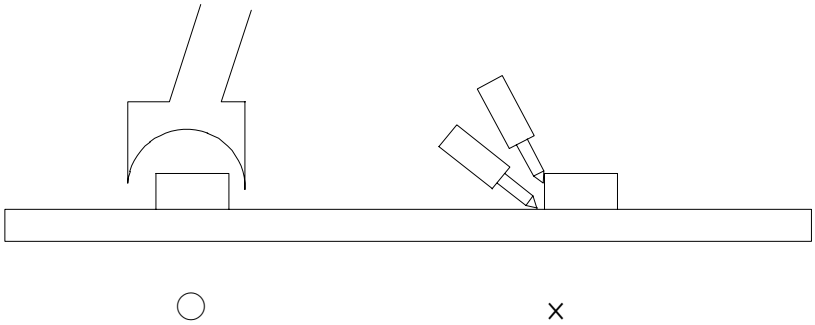


■ Soldering Iron

Basic spec is ≦5 sec when 260℃.If temperature is higher, time should be shorter (+10℃ →-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 ℃.

■ Rework

1. Customer must finish rework within 5 sec under 260℃.
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 :