



PORT NO.: 19-21SOC/TR8

Device Number : DSE-191-081 REV. 1.0

0.8mm Height Flat Top LEDs

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Features :

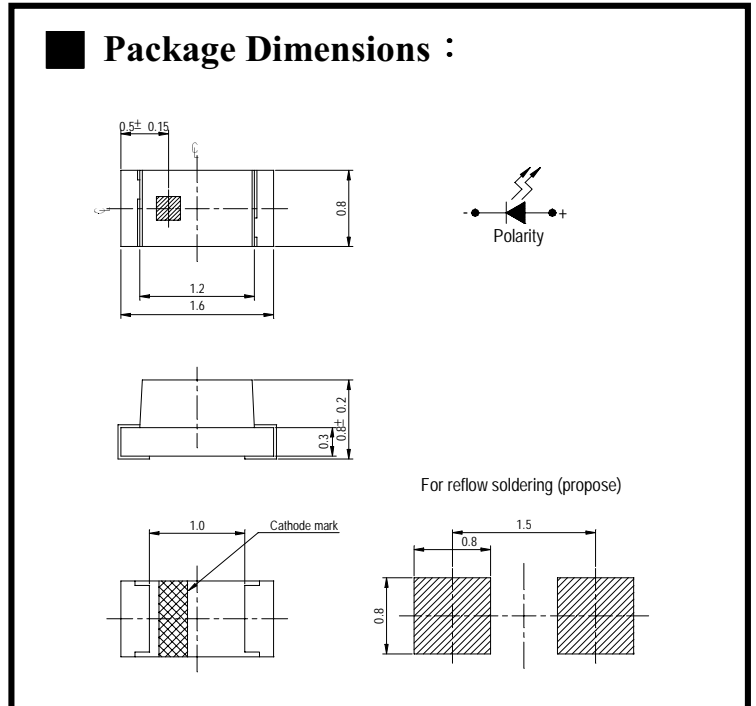
- Package in 8mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Mono-color type.

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, 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 | |
| 19-21SOC/TR8 | GaAsP/GaP | Sunset Orange | Water Clear |

8905124.B89051242

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TEL: 886-2-2267-2000, 2267-9936

FAX: 886-2-2267-6244, 2267-6189, 2267-6306

http://www.everlight.com



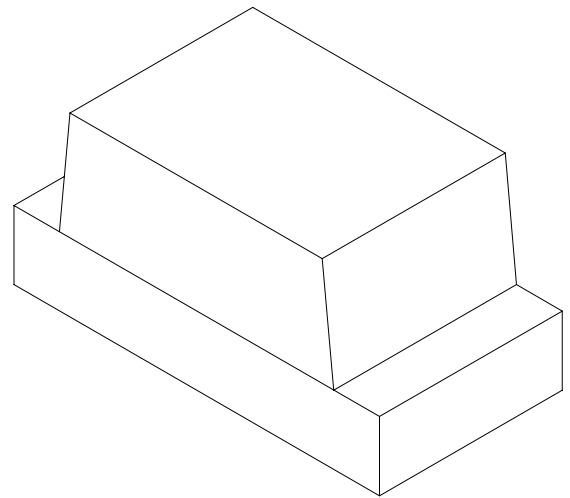
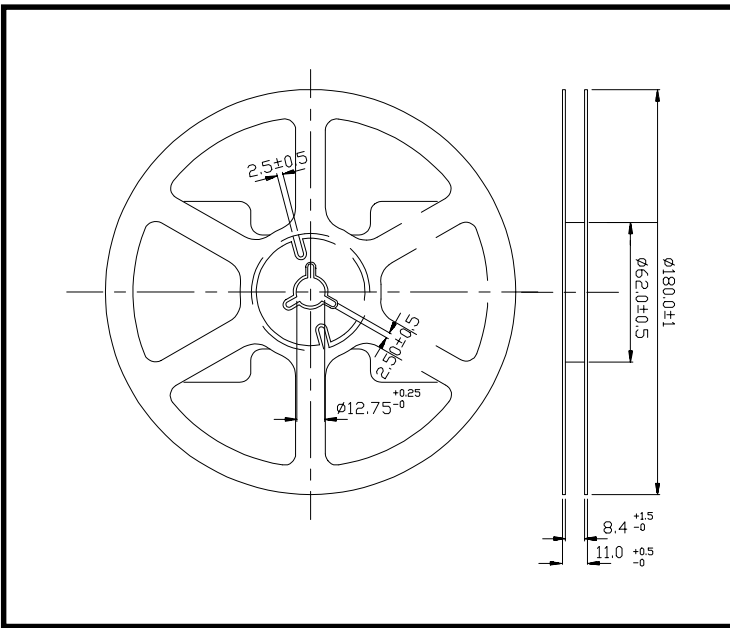
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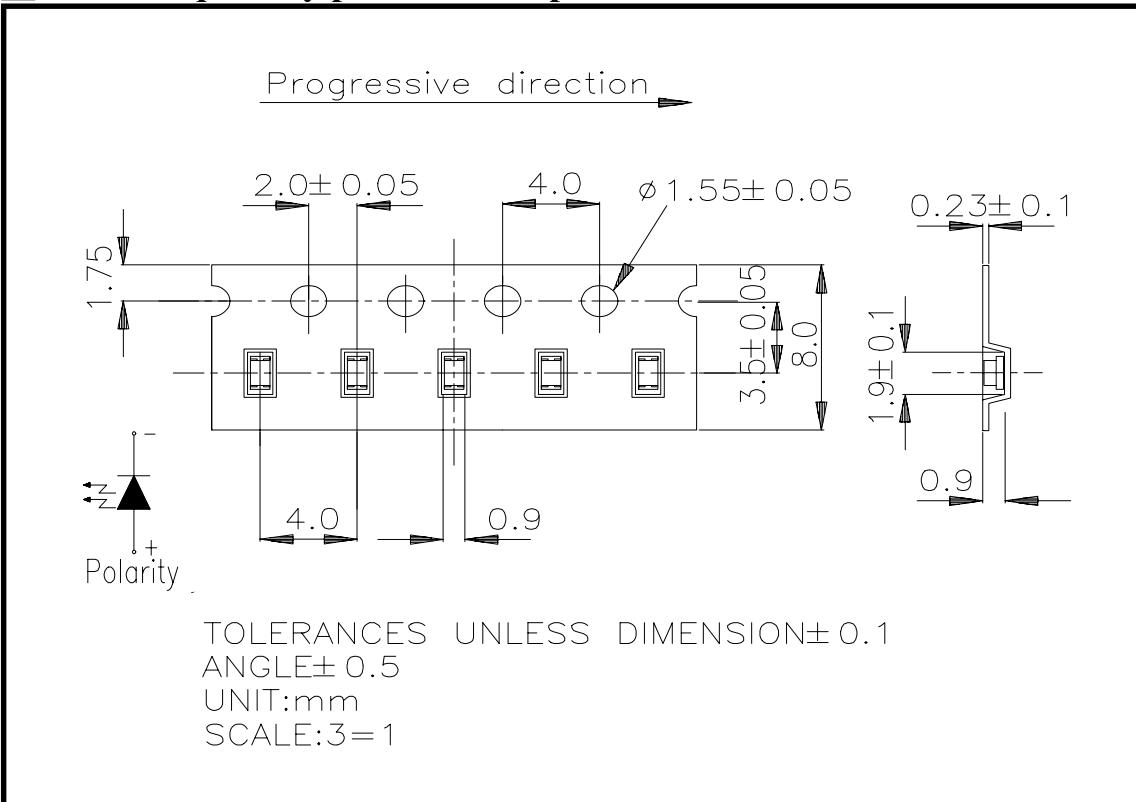
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Package Dimensions :



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 _R | 5 | V |
| Forward Current | I _F | 40 | mA |
| Operating Temperature | T _{opr} | -40 ~ +85 | °C |
| Storage Temperature | T _{stg} | -40 ~ +90 | °C |
| Soldering Temperature | T _{sol} | 260 (for 5 second) | °C |
| Power Dissipation | P _d | 110 | mW |
| Peak Forward Current(Duty 1/10 @ 1KHz) | I _{F(Peak)} | 160 | mA |

■ Electronic Optical Characteristics :

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|----------------|-------|-------|-------|------|----------------------|
| Luminous Intensity | I _v | 3.5 | 5.5 | ----- | mcd | I _F =20mA |
| Viewing Angle | 2θ 1/2 | ----- | 100 | ----- | deg | I _F =20mA |
| Peak Wavelength | λ _p | ----- | 610 | ----- | nm | I _F =20mA |
| Dominant Wavelength | λ _d | ----- | 605 | ----- | nm | I _F =20mA |
| Spectrum Radiation Bandwidth | Δλ | ----- | 40 | ----- | nm | I _F =20mA |
| Forward Voltage | V _F | 1.7 | 2.0 | 2.4 | V | I _F =20mA |
| Reverse Current | I _R | ----- | ----- | 10 | μA | V _R =5V |



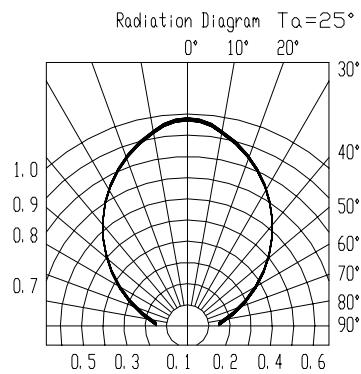
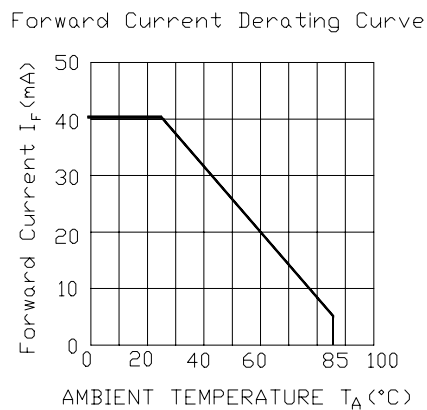
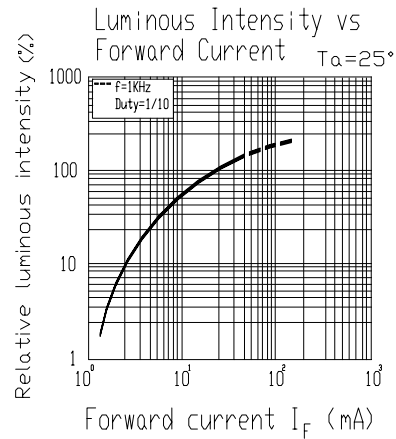
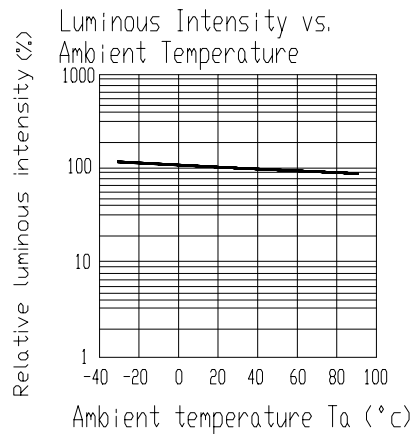
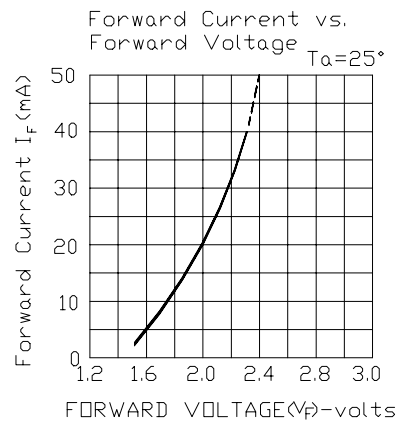
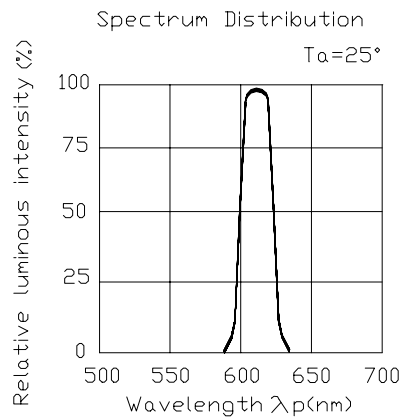
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Typical Electro-Optical Characteristic Curves





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■ **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 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 HRS | 76 PCS | 0/1 |
| 5 | Low Temperature Storage | TEMP : -55°C | 1000 HRS | 76 PCS | 0/1 |
| 6 | DC Operating Life | I _F = 20 mA | 1000 HRS | 76 PCS | 0/1 |
| 7 | High Temperature / High Humidity | 85°C/RH85% | 1000 HRS | 76 PCS | 0/1 |



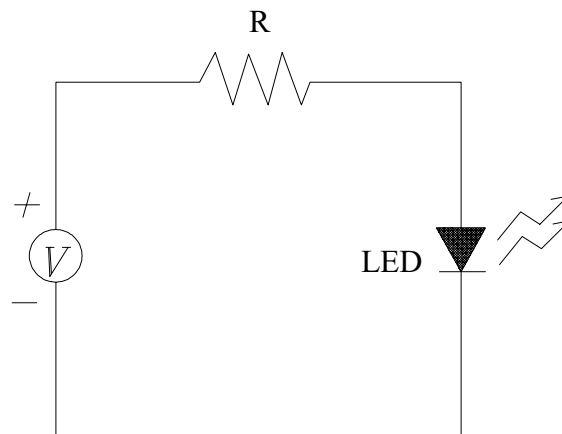
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■ Test Circuit



■ 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 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 damp proof box with desiccating agent.

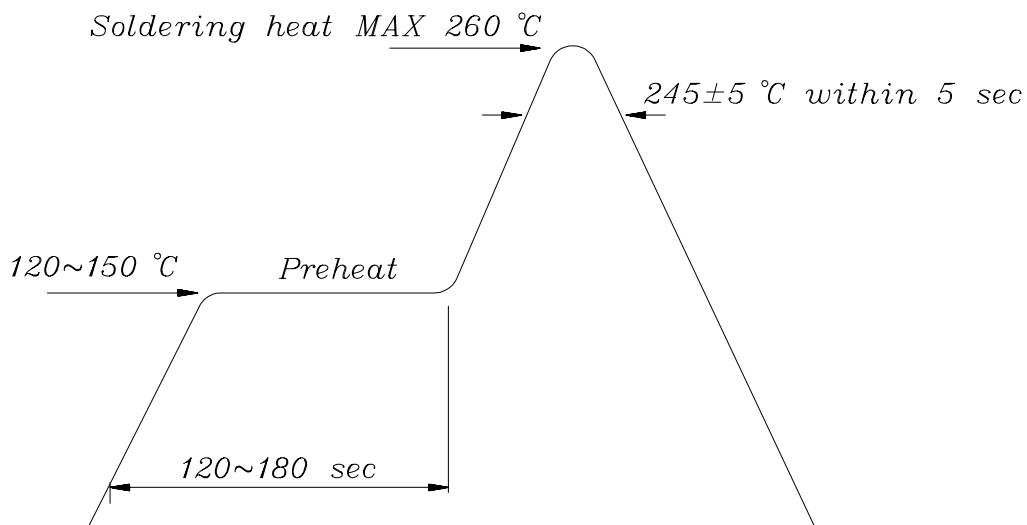
Considering the tape life , we suggest our customers to use our products within a year(from production date).

2.3 If opened more than one week in an atmosphere $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$, 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 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 :

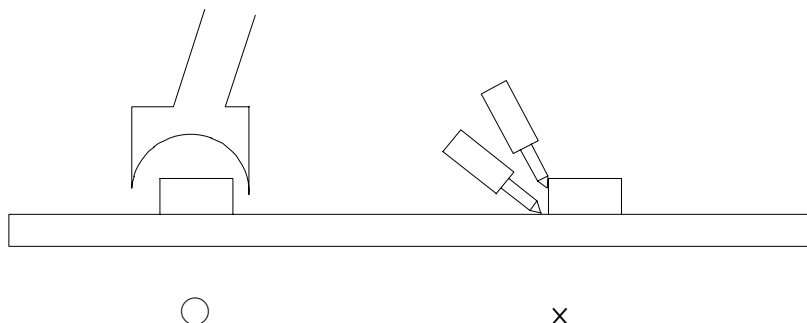


■ **Soldering Iron**

Basic spec is ≤ 5 sec when 260°C .If temperature is higher, time should be shorter (+10°C \rightarrow -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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■ Reflow Temp / Time :

