LEDTRONICS, INC.®

23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505 Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: http://www.ledtronics.com

# SML10R6T-TR

## Ultra Red
## Surface Mount LED
## 3.5 ×2.7 ×1.85 mm Chip LED
## 120° viewing angle

| |
|---|
| DWG BY:<br>SL / GP<br>11-02-07 |
| CHK BY:<br>PL<br>01-02-08 |
| QA:<br>__<br>__-__-__ |
| MFG:<br>__<br>__-__-__ |
| REVISION LTR: -<br><br>12-17-07 |

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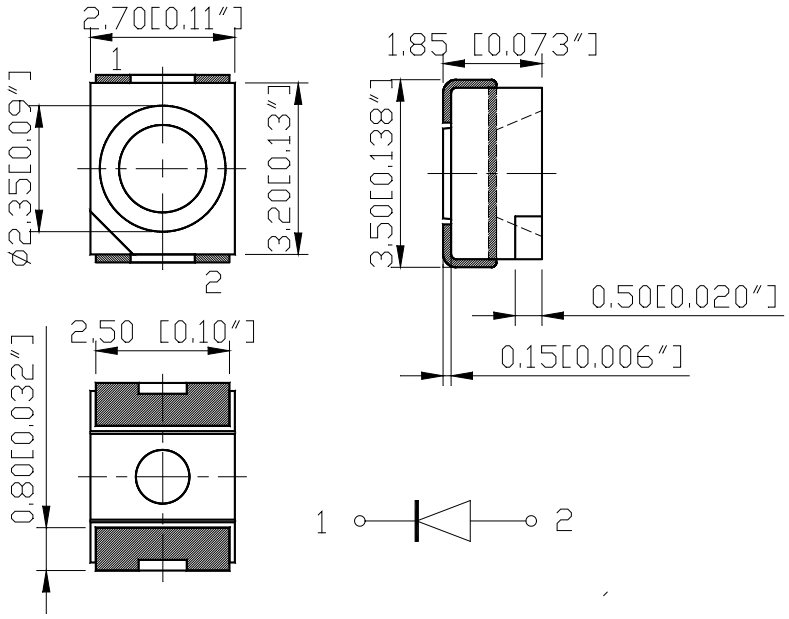
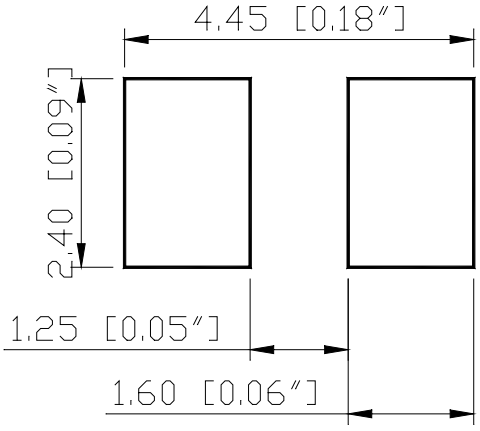
# Package outlines




RECOMMEND PAD LAYOUT




| ITEM | MATERIALS |
|---|---|
| Resin (mold) | Epoxy |
| Bonding Wire | Ø25µm Au |
| Lens color | Water Transparent |
| Dice | GaAlAs |
| Emitted color | Red |

NOTES:
1. All dimensions are in millimeters (inches);
2. Tolerance are ±0.2mm (0.008inch) unless otherwise noted.

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## Absolute maximum ratings ($T_A$=25℃ )

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Power dissipation | Pd | 69 | mW |
| Forward current | If | 30 | mA |
| Reverse voltage | Vr | 5 | V |
| Operating temperature range | Top | -20 ~+80 | ℃ |
| Storage temperature range | Tstg | -20~+80 | ℃ |
| Peak pulsing current (1/8 duty f=1kHz) | Ifp | 125 | mA |

## Electro-optical characteristics ($T_A$=25℃)

| Parameter | Test Condition | Symbol | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | |
| Wavelength at peak emission | If=20mA | λ peak | -- | 655 | -- | nm |
| Spectral half bandwidth | If=20mA | △λ | -- | 22 | -- | nm |
| Dominant wavelength | If=20mA | λ dom | -- | 640 | -- | nm |
| Forward voltage | If=20mA | Vf | -- | 1.8 | 2.3 | V |
| Chip Luminous intensity ＊1 | If=20mA | Iv | 15 | 55 | -- | mcd |
| Viewing angle at 50% Iv | If=10mA | 2θ 1/2 | -- | 120 | -- | Deg |
| Reverse current | Vr=5V | Ir | -- | -- | 10 | μA |
| Chromaticity Coordinates | If=20mA | X | -- | 0.72 | -- | |
| | | Y | | 0.28 | | |

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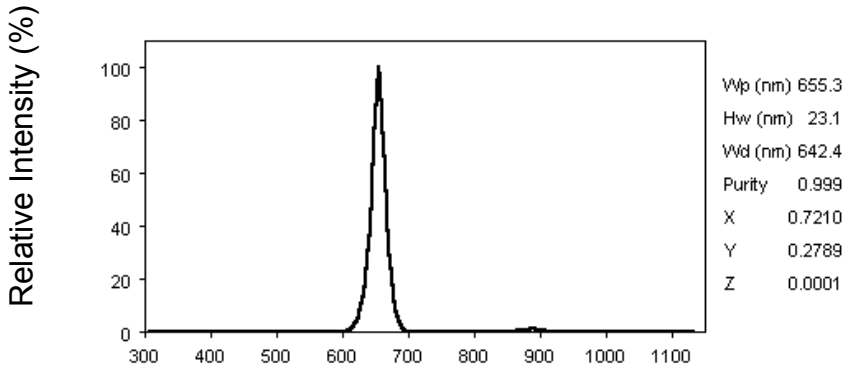
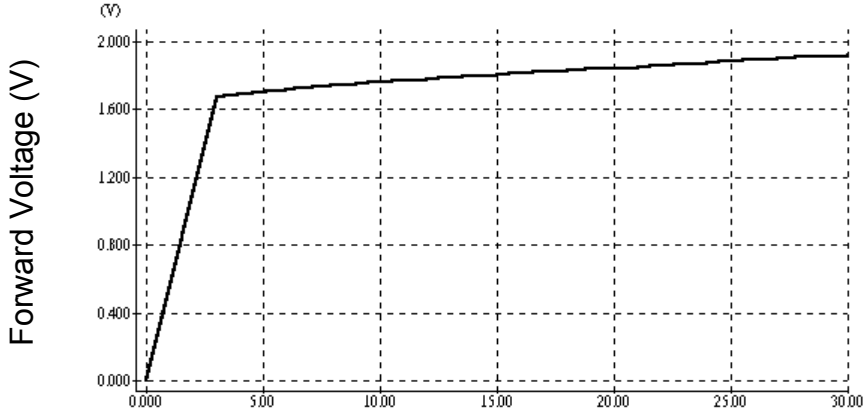
# OPTICAL CHARACTERISTIC CURVES

Relative Intensity vs. Wavelenght



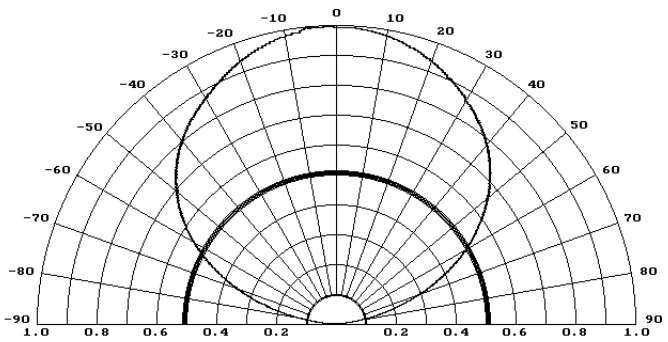

Wavelenght (nm)

Forward Current vs. Forward Voltage




Forward Current (mA)

Directive Characteristics



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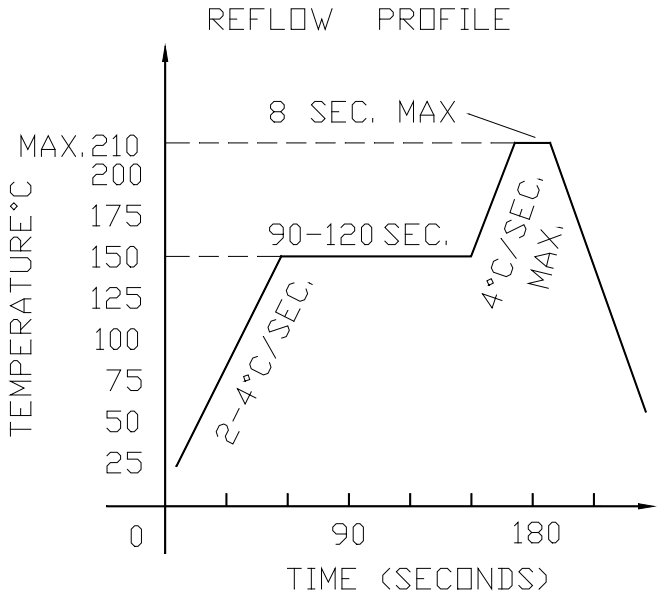
# Reflow Profile

■ Reflow Temp/Time




■Soldering iron

Basic spec is ≤ 5sec when 260℃. If temperature is higher, time should be shorter (+10℃→ -1sec ).Power dissipation of iron should be smaller than 15W, and temperatures should be controllable .Surface temperature of the device should be under 230℃ .

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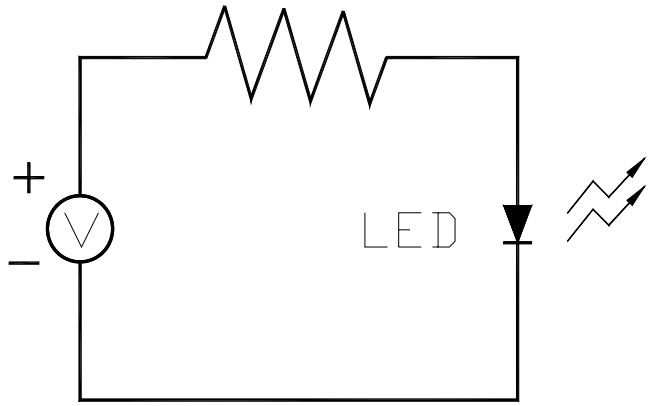
# TEST CIRCUIT




■Precautions For use

Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

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## Test items and results of reliability

| Type | Test Item | REF. Standard | Test Conditions | Note | Number of Damaged |
|---|---|---|---|---|---|
| Environmental Sequence | Temperature Cycle | JIS C 7021 (1977)A-4 | -20℃ 30min<br>↑ ↓ 5min<br>80℃ 30min | 100 cycle | 0/100 |
| | Thermal Shock | MIL-STD-107D | -20℃ 15min<br>↑ ↓<br>80℃ 15min | 100 cycle | 0/100 |
| | High Humidity Heat Cycle | JIS C 7021 (1977)A-5 | 30℃⇔65℃<br>90%RH 24hrs/1cycle | 10 cycle | 0/100 |
| | High Temperature Storage | JIS C 7021 (1977)B-10 | $T_a$=80℃ | 1000 hrs | 0/100 |
| | Humidity Heat Storage | JIS C 7021 (1977)B-11 | $T_a$=60℃<br>RH=90% | 1000 hrs | 0/100 |
| | Low Temperature Storage | JIS C 7021 (1977)B-12 | $T_a$=-30℃ | 1000 hrs | 0/100 |
| Operation Sequence | Life Test | JIS C 7035 (1985) | $T_a$=25℃<br>$I_F$=20mA | 1000 hrs | 0/100 |
| | High Humidity Heat Life Test | * | 60℃ RH=90%<br>$I_F$=20mA | 500 hrs | 0/100 |
| | Low Temperature Life Test | * | $T_a$=-20℃<br>$I_F$=20mA | 1000 hrs | 0/100 |

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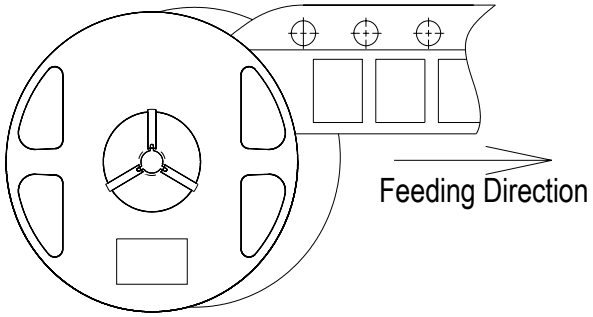
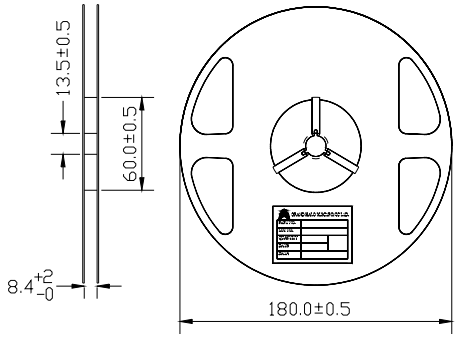
# Single-Color High Performance SMD Top LEDs Packaging Specifications

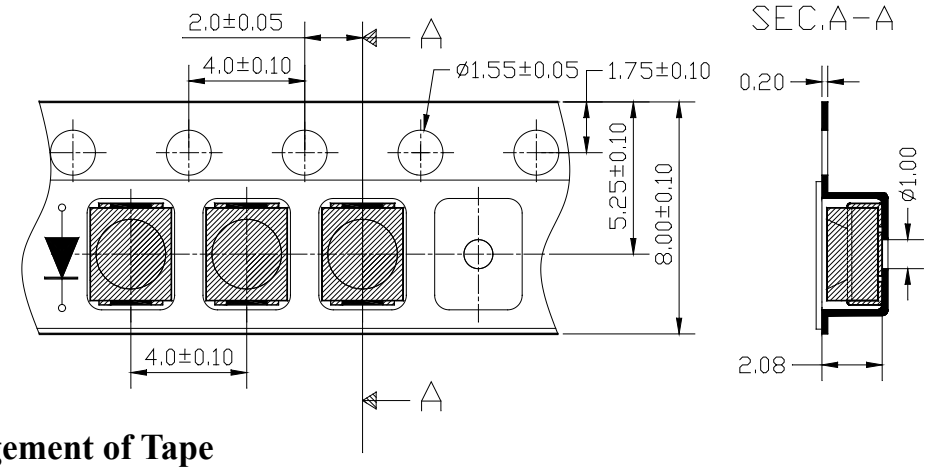
- **Feeding Direction**



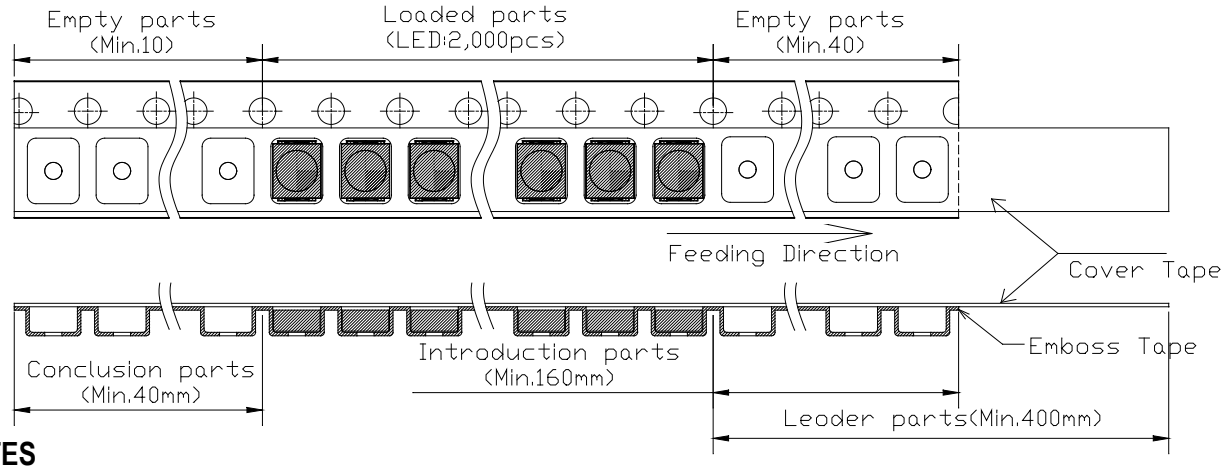

- **Dimensions of Reel (Unit: mm)**




- **Dimensions of Tape (Unit: mm)**




- **Arrangement of Tape**




**NOTES**

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications;
4. 2,000pcs/Reel