

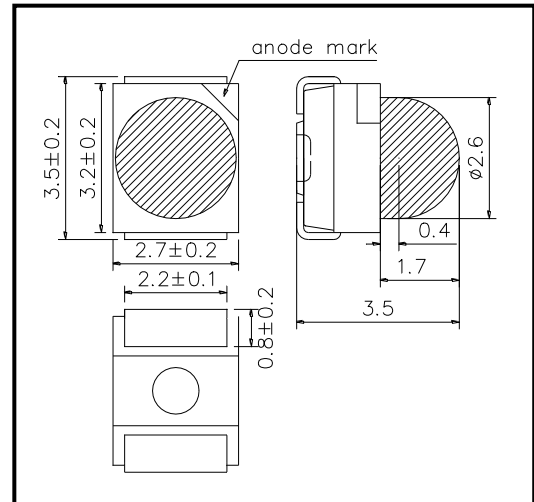
# SMT780-23 TOP IR LED with lens

SMT780-23 consists of an AlGaAs LED mounted on the lead frame as TOP LED package with epoxy resin lens and is 35W/sr typical. It emits a spectral band of radiation at 780nm.

◆ Outer dimension (Unit:mm)

◆ Specifications

- 1) Product Name TOP IR LED with lens
- 2) Type No. SMT780-23
- 3) Chip
  - (1) Chip Material AlGaAs
  - (2) Peak Wavelength 780nm typ.
- 4) Package
  - (1) Lead Frame Die Silver Plated
  - (2) Package Resin PPA Resin
  - (3) Lens Epoxy Resin
  - (4) Diameter  $\Phi 2.6$ mm



◆ Absolute Maximum Rating

| Item                  | Symbol           | Maximum Rated Value | Unit | Ambient Temperature  |
|-----------------------|------------------|---------------------|------|----------------------|
| Power Dissipation     | P <sub>D</sub>   | 190                 | mW   | T <sub>a</sub> =25°C |
| Forward Current       | I <sub>F</sub>   | 100                 | mA   | T <sub>a</sub> =25°C |
| Pulse Forward Current | I <sub>FP</sub>  | 500                 | mA   | T <sub>a</sub> =25°C |
| Reverse Voltage       | V <sub>R</sub>   | 5                   | V    | T <sub>a</sub> =25°C |
| Operating Temperature | T <sub>OPR</sub> | -20 ~ +80           | °C   |                      |
| Storage Temperature   | T <sub>STG</sub> | -30 ~ +80           | °C   |                      |
| Soldering Temperature | T <sub>SOL</sub> | 255                 | °C   |                      |

‡Pulse Forward Current condition: Duty=1% and Pulse Width=10us.

‡Soldering condition: Soldering condition must be completed within 10 seconds at 255°C

◆ Electro-Optical Characteristics [T<sub>a</sub>=25°C]

| Item                 | Symbol           | Condition            | Minimum | Typical | Maximum | Unit  |
|----------------------|------------------|----------------------|---------|---------|---------|-------|
| Forward Voltage      | V <sub>F</sub>   | I <sub>F</sub> =50mA |         | 1.75    | 1.95    | V     |
| Reverse Current      | I <sub>R</sub>   | V <sub>R</sub> =5V   |         |         | 10      | uA    |
| Total Radiated Power | P <sub>O</sub>   | I <sub>F</sub> =50mA | 16.0    | 20.0    |         | mW    |
| Radiant Intensity    | I <sub>E</sub>   | I <sub>F</sub> =50mA | 20.0    | 35.0    |         | mW/sr |
| Peak Wavelength      | λ <sub>P</sub>   | I <sub>F</sub> =50mA | 770     | 780     | 790     | nm    |
| Half Width           | Δλ               | I <sub>F</sub> =50mA |         | 3       |         | nm    |
| Viewing Half Angle   | θ <sub>1/2</sub> | I <sub>F</sub> =50mA |         | ±15     |         | deg.  |
| Rise Time            | t <sub>r</sub>   | I <sub>F</sub> =50mA |         | 80      |         | ns    |
| Fall Time            | t <sub>f</sub>   | I <sub>F</sub> =50mA |         | 80      |         | ns    |

‡Total Radiated Power is measured by Photodyne #500

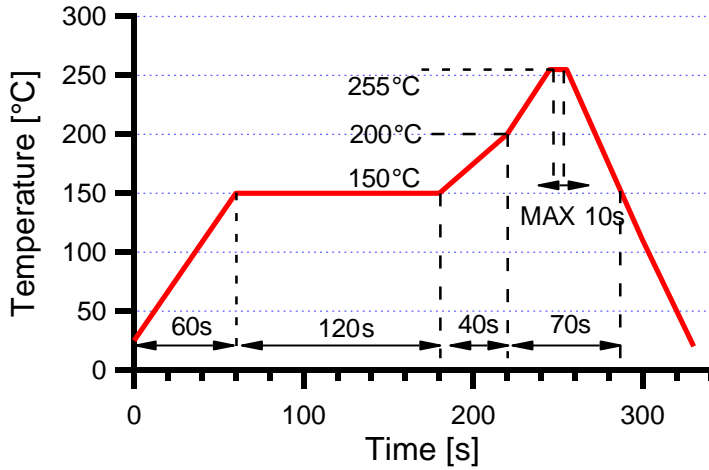
‡Radiant Intensity is measured by Tektronix J-6512.

**Marubeni America Corporation**

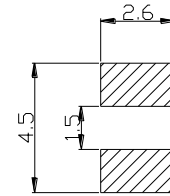
3945 Freedom Circle, Suite 1000, Santa Clara, CA 95054  
408-330-0650 (Ext. 330), 408-330-0655 (FAX), sales@tech-led.com

◆ SMD Application

Recommended reflow soldering profile



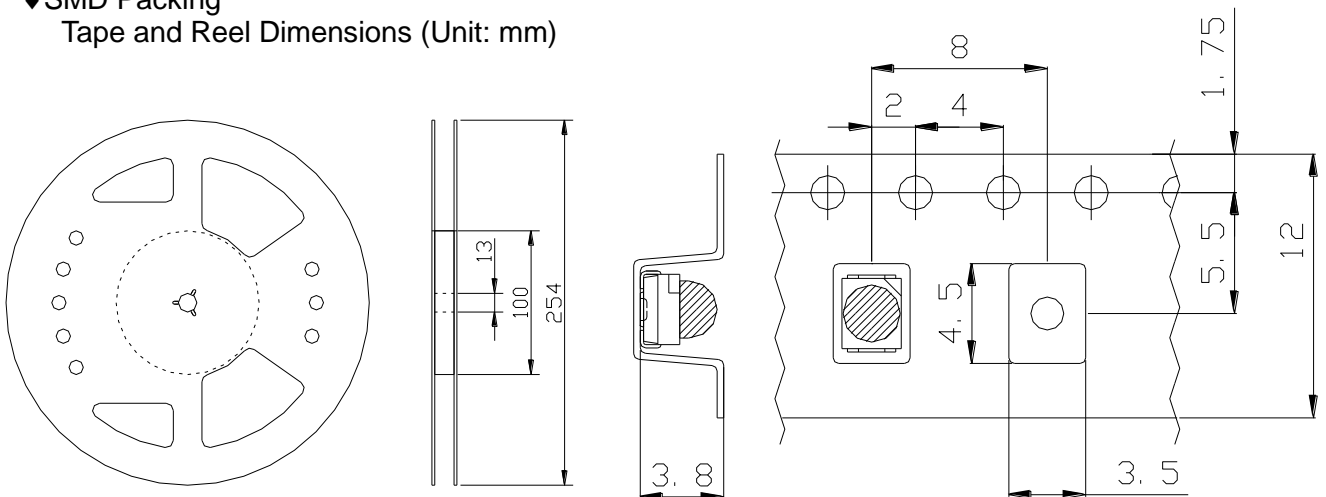
Recommended Land Layout (Unit: mm)



Don't put stress on SMD and a circuit board after soldering.

◆ SMD Packing

Tape and Reel Dimensions (Unit: mm)



◆ Wrapping

Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.

## SMD LED STORAGE AND HANDLING PRECAUTIONS

### < Storage Conditions before Opening a Moisture-Barrier Aluminum Bag >

- Before opening a moisture-barrier aluminum bag, please store it at <30°C, <60%RH. Please note that the maximum shelf life is 12 months under these conditions.

### < Storage Conditions after Opening a Moisture-Barrier Aluminum Bag >

- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 48 hours in a room with 5 - 30°C, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.

### < Notes about Re-sealing a Moisture-Barrier Aluminum Bag >

- When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use the unused LEDs, the aluminum bag, or the silica gel.

### < Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag >

- When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.

※The 48-hour- long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag.  
However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag.