



SMC780



TECHNICAL DATA

Visible LED, SMD

AlGaAs

SMC780 is a AlGaAs LED mounted on a ceramic SMD package and sealed with silicone or epoxy resin for damp proof. On forward bias, it emits a radiation of typical 10 mW at a peak wavelength of 780 nm.

Specifications

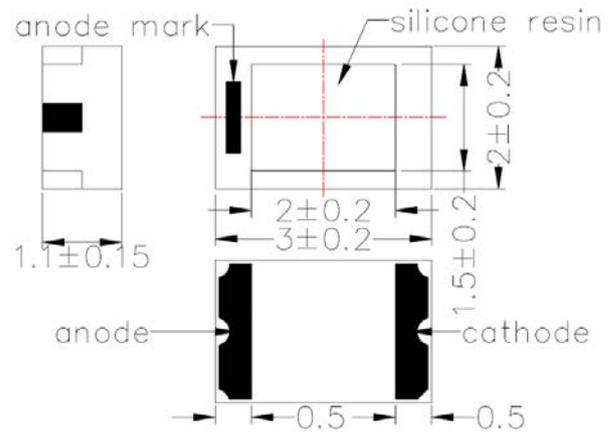
- Structure: AlGaAs
- Peak Wavelength: typ. 780 nm
- Optical Output Power: typ. 10 mW
- Package: Ceramic SMD, silicone / epoxy resin

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

| Item | Symbol | Value | Unit |
|-------------------------|-----------|-------------|------------------|
| Power Dissipation | P_D | 190 | mW |
| Forward Current | I_F | 100 | mA |
| Pulse Forward Current** | I_{FP} | 500 | mA |
| Reverse Voltage | V_R | 5 | V |
| Operating Temperature | T_{opr} | -30 ... +80 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -40 ... +80 | $^\circ\text{C}$ |
| Soldering Temperature * | T_{sol} | 240 | $^\circ\text{C}$ |

* must be completed within 5 seconds

** max duty cycle 1%, max puls width 10 μs



(Unit: mm)

Electro-Optical Characteristics

| Item | Symbol | Condition | Min. | Typ. | Max. | Unit |
|-----------------------|-----------------|-----------------------|------|------|------|---------------|
| Forward Voltage | V_F | $I_F = 50 \text{ mA}$ | - | 1.75 | 1.95 | V |
| Reverse Current | I_R | $V_R = 5 \text{ V}$ | - | - | 10 | μA |
| Total Radiated Power* | P_O | $I_F = 50 \text{ mA}$ | 5.0 | 10.0 | - | mW |
| Radiation Intensity | I_E | $I_F = 50 \text{ mA}$ | 2.0 | 5.0 | - | mW/sr |
| Peak Wavelength | λ_P | $I_F = 50 \text{ mA}$ | 765 | 780 | 795 | nm |
| Half Width | $\Delta\lambda$ | $I_F = 50 \text{ mA}$ | - | 35 | - | nm |
| Viewing Half Angle | $\Theta_{1/2}$ | $I_F = 50 \text{ mA}$ | - | ±55 | - | deg. |
| Rise Time | t_R | $I_F = 50 \text{ mA}$ | - | 80 | - | ns |
| Fall Time | t_F | $I_F = 50 \text{ mA}$ | - | 80 | - | ns |

* Total Radiated Power is measured by Photodyne #500

Notes

- Do not view directly into the emitting area of the LED during operation!
- The above specifications are for reference purpose only and subjected to change without prior notice.

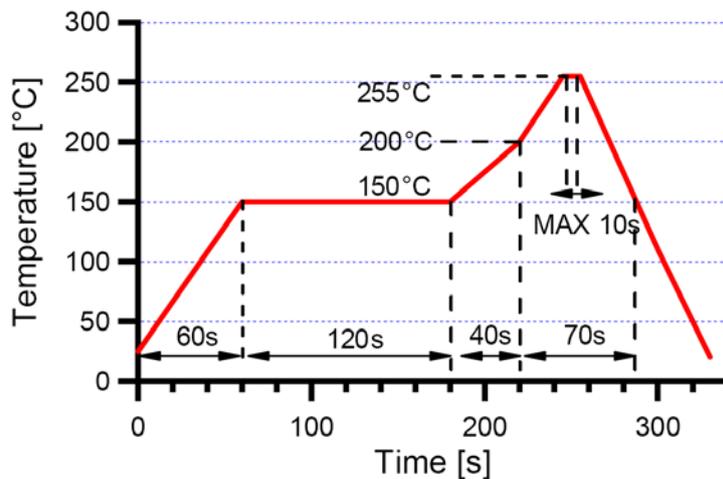




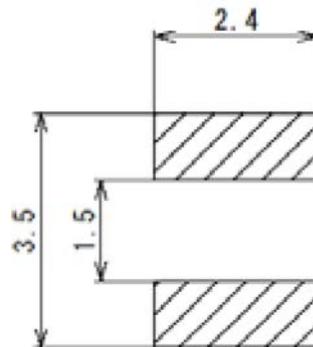
Soldering Conditions

- DO NOT apply any stress to the lead particularly when heat.
- After soldering the LEDs should be protected from mechanical shock or vibration until the LEDs return to room temperature.
- When it is necessary to clamp the LEDs to prevent soldering failure, it is important to minimize the mechanical stress on the LEDs.

Temperature Profile



PCB Footprint Layout



(Unit: mm)

Static Electricity

- LEDs are very sensitive to Static Electricity and surge voltage. It is recommended to always wear a wrist band or an anti-electrostatic glove when handling the LEDs.
- All devices, equipment and machinery must be grounded properly. It is recommended that precautions should be taken against surge voltage to the equipment that mounts the LEDs.