



## 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

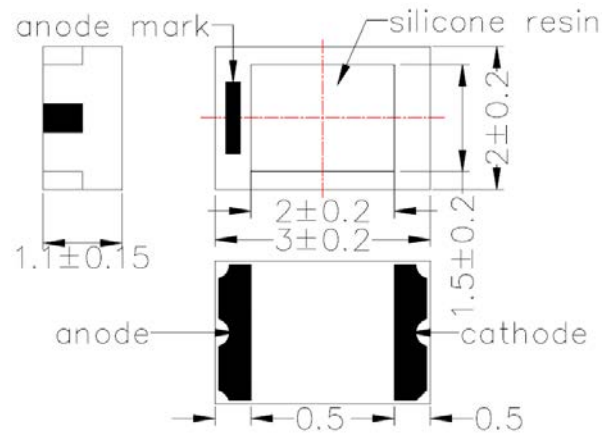
- Structure: AlGaAs
- Peak Wavelength: typ. 780 nm
- Optical Output Power: typ. 10 mW
- Package: Ceramic SMD, silicone / epoxy resin

#### 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 $\mu\text{s}$



(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	$\mu\text{A}$
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	$\lambda_P$	$I_F = 50 \text{ mA}$	765	780	795	nm
Half Width	$\Delta\lambda$	$I_F = 50 \text{ mA}$	-	35	-	nm
Viewing Half Angle	$\Theta_{1/2}$	$I_F = 50 \text{ mA}$	-	$\pm 55$	-	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.

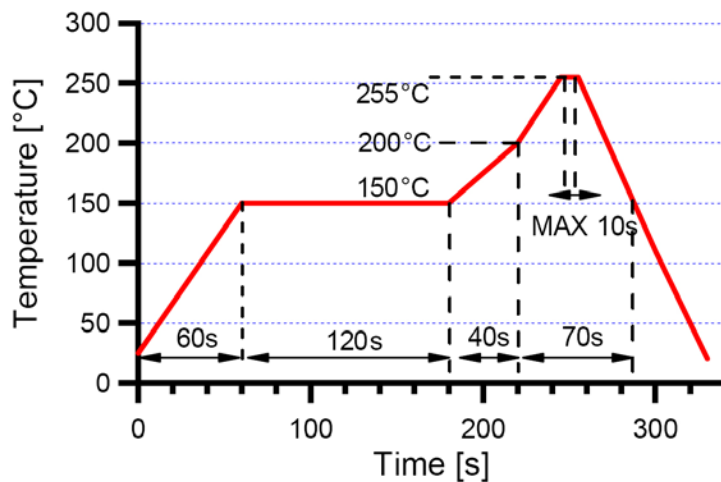




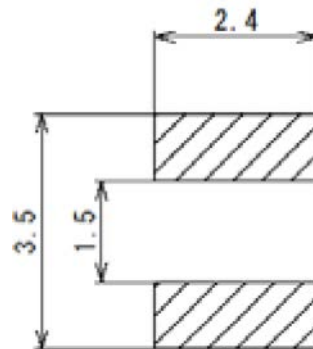
## Soldering Conditions

- 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.