



SMC890



TECHNICAL DATA

Invisible LED, SMD

AlGaAs

SMC890 are AlGaAs LEDs 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 8 mW at a peak wavelength of 890 nm.

Specifications

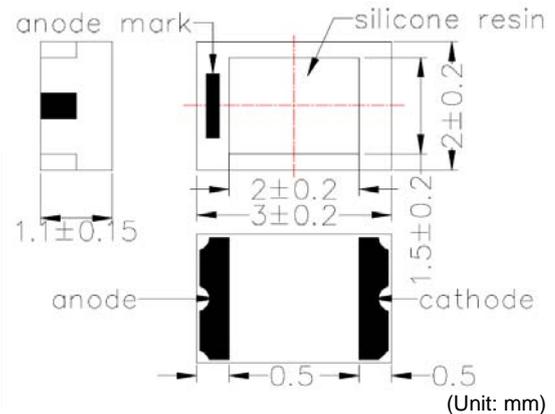
- Structure: AlGaAs
- Peak Wavelength: typ. 890 nm
- Optical Output Power: typ. 8 mW
- Package: Ceramic SMD, silicon or epoxy resin

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

Item	Symbol	Value	Unit
Power Dissipation	P_D	160	mW
Forward Current	I_F	100	mA
Pulse Forward Current *1	I_{FP}	500	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-30 ... +80	$^\circ\text{C}$
Storage Temperature	T_{stg}	-30 ... +80	$^\circ\text{C}$
Soldering Temperature *2	T_{sol}	255	$^\circ\text{C}$

*1 duty = 1%, pulse width = 10 μs

*2 must be completed within 5 seconds



Electro-Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 50 \text{ mA}$	-	1.45	1.7	V
Reverse Current	I_R	$V_R = 5 \text{ V}$	-	-	10	μA
Total Radiated Power	P_O	$I_F = 50 \text{ mA}$	4	8	-	mW
Radiation Intensity	I_E	$I_F = 50 \text{ mA}$	2	4	-	mW/sr
Peak Wavelength	λ_P	$I_F = 50 \text{ mA}$	-	890	-	nm
Half Width	$\Delta\lambda$	$I_F = 50 \text{ mA}$	-	75	-	nm
Viewing Half Angle	$\Theta_{1/2}$	$I_F = 50 \text{ mA}$	-	± 55	-	deg.
Rise Time	t_r	$I_F = 50 \text{ mA}$	-	800	-	ns
Fall Time	t_f	$I_F = 50 \text{ mA}$	-	400	-	ns

Radiation Intensity is measured by Tektronix J-6512

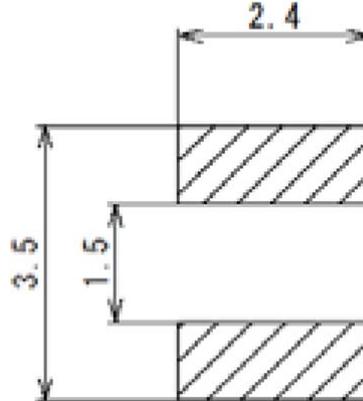
Total Radiated Power is measured by Photodyne #500

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.



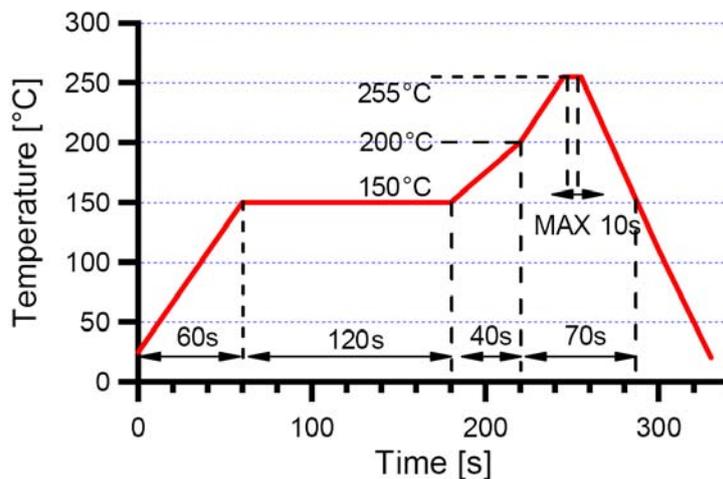
Recommended Land Layout (Unit: mm)



1. 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.

Soldering Conditions



2. Static Electricity

- The LEDs are very sensitive to Static Electricity and surge voltage. So it is recommended that a wrist band or an anti-electrostatic glove be used 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.

