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SMC870

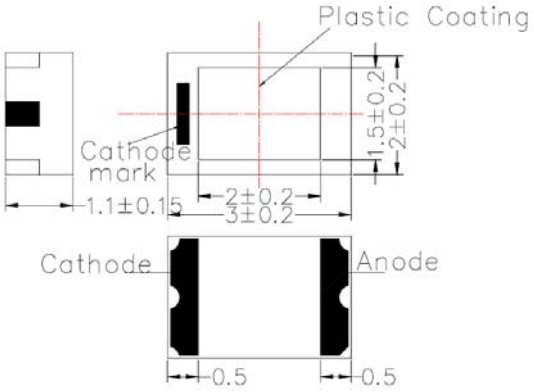
TECHNICAL DATA

Invisible LED, SMD AlGaAs

SMC870 are AlGaAs LEDs mounted on a ceramic SMD package and sealed with silicone resin for damp proof. On forward bias, it emits a radiation of typical 19 mW at a peak wavelength of 870 nm.

Specifications

- Structure: AlGaAs
- Peak Wavelength: typ. 870 nm
- Optical Output Power: typ. 19 mW
- Package: Ceramic SMD, silicon or epoxy resin



(Unit: mm)

Absolute Maximum Ratings (T_a=25°C)

Item	Symbol	Value	Unit
Power Dissipation	P_D	160	mW
Forward Current	I_F	100	mA
Pulse Forward Current *1	I_{FP}	1000	mA
Reverse Voltage	V_R	5	V
Juntion Temperatur	T_J	100	°C
Thermal Resistance	R_{th}	190	K/W
Operating Temperature	T_{opr}	-30 … +80	°C
Storage Temperature	T_{stg}	-30 … +80	°C
Soldering Temperature *2	T_{sol}	255	°C

*1 duty = 1%, pulse width = 10 µs
*2 must be completed within 5 seconds

Electro-Optical Characteristics

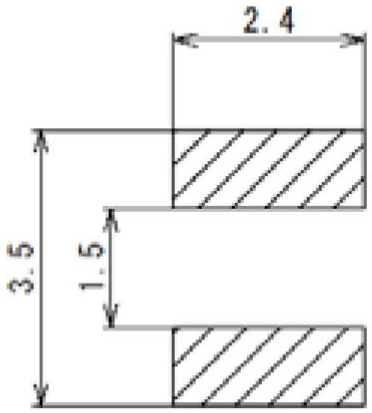
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 50 mA	-	1.45	1.6	V
		I_F=100mA, tp=20ms	-	1.5	1.8	
Reverse Current	I_R	V_R = 5 V	-	-	10	µA
Total Radiated Power	P_O	I_F = 50 mA	15	19	-	mW
		I_F=100mA, tp=20ms	-	38	-	
Radiation Intensity	I_E	I_F = 50 mA	-	10	-	mW/sr
		I_F=100mA, tp=20ms	-	20	-	
Peak Wavelength	λ_P	I_F = 50 mA	860	870	880	nm
Half Width	$\Delta\lambda$	I_F = 50 mA	-	40	-	nm
Viewing Half Angle	$\Theta_{1/2}$	I_F = 50 mA	-	±55	-	deg.
Rise Time	t_r	I_F = 50 mA	-	15	-	ns
Fall Time	t_f	I_F = 50 mA	-	10	-	ns

Brightness is measured by Tektronix J-16
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.

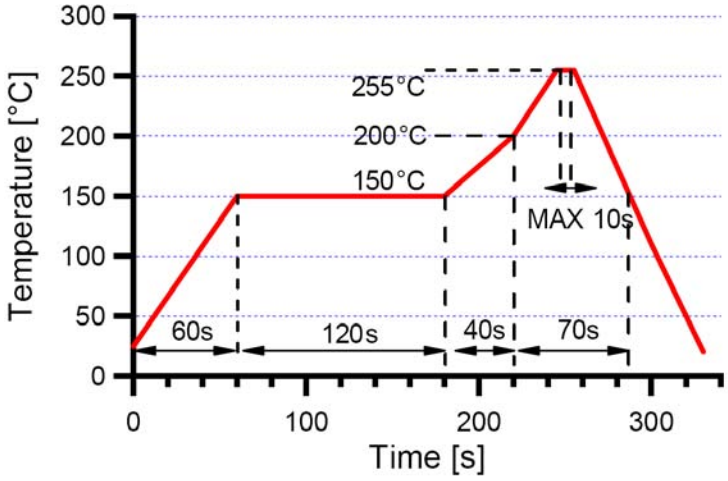
Recommended Land Layout (Unit: mm)



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.