

SMTQ870

High Performance Infrared TOP IR LED

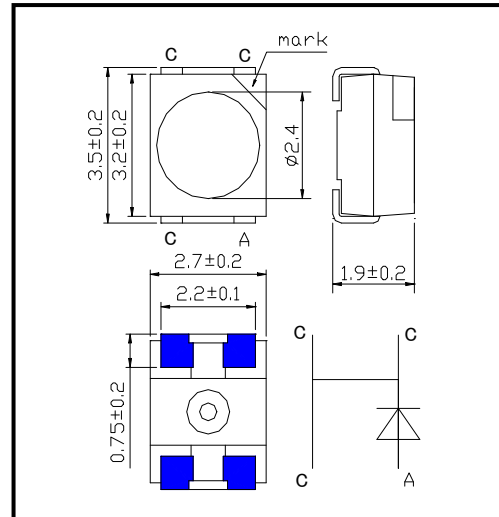
SMTQ870 consists of an AlGaAs LED mounted on the lead frame as TOP LED PLCC4 package and is 40mW typical of output power and 40mW/sr of radiant intensity.

It emits a spectral band of radiation at 870nm.

◆Outer dimension (Unit: mm)

◆Specifications

1) Product Name	TOP IR LED
2) Type No.	SMTQ870
3) Chip	
(1) Chip Material	AlGaAs
(2) Chip Dimension	0.4mm*0.4mm
(3) Peak Wavelength	870nm typ.
4) Package	PLCC4
(1) Lead Frame Die	Silver Plated
(2) Package Resin	PPA Resin
(3) Lens	Epoxy Resin



◆Electro-Optical Characteristics [Ta=25°C]

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P _D	160	mW	Ta=25°C
Forward Current	I _F	100	mA	Ta=25°C
Pulse Forward Current	I _{FP}	1,000	mA	Ta=25°C
Reverse Voltage	V _R	5	V	Ta=25°C
Junction Temperature	T _J	100	°C	
Thermal Resistance	R _{thja}	200	K/W	
Operating Temperature	T _{OPR}	-20 ~ +80	°C	
Storage Temperature	T _{STG}	-30 ~ +80	°C	
Soldering Temperature	T _{SOL}	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 [Ta=25°C]

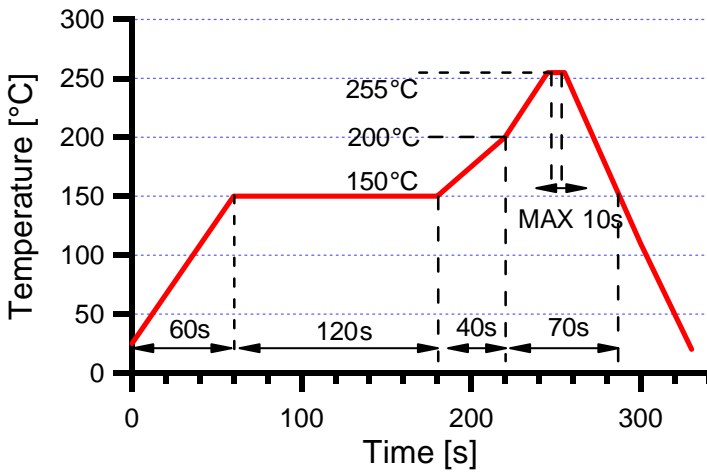
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =50mA DC		1.45	1.60	V
		I _F =100mA, tp=20ms		1.50	1.8	
Reverse Current	I _R	V _R =5V			10	uA
Total Radiated Power	P _O	I _F =50mA DC	15.0	20.0		mW
		I _F =100mA, tp=20ms		40.0		
Radiant Intensity	I _E	I _F =50mA DC		10		mW/sr
		I _F =100mA, tp=20ms		20		
Peak Wavelength	λ _P	I _F =50mA DC	860	870	880	nm
Half Width	Δλ	I _F =50mA DC		40		nm
Viewing Half Angle	θ _{1/2}	I _F =50mA DC		±63		deg.
Rise Time	t _r	I _F =50mA DC		15		ns
Fall Time	t _f	I _F =50mA DC		10		ns

‡Total Radiated Power is measured by Photodyne #500

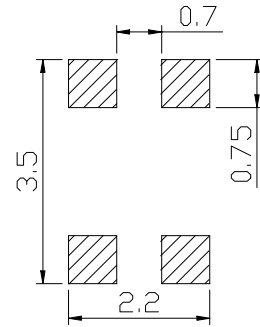
‡Radiant Intensity is measured by Tektronix J-6512.

◆ SMD Application

Recommended reflow soldering profile



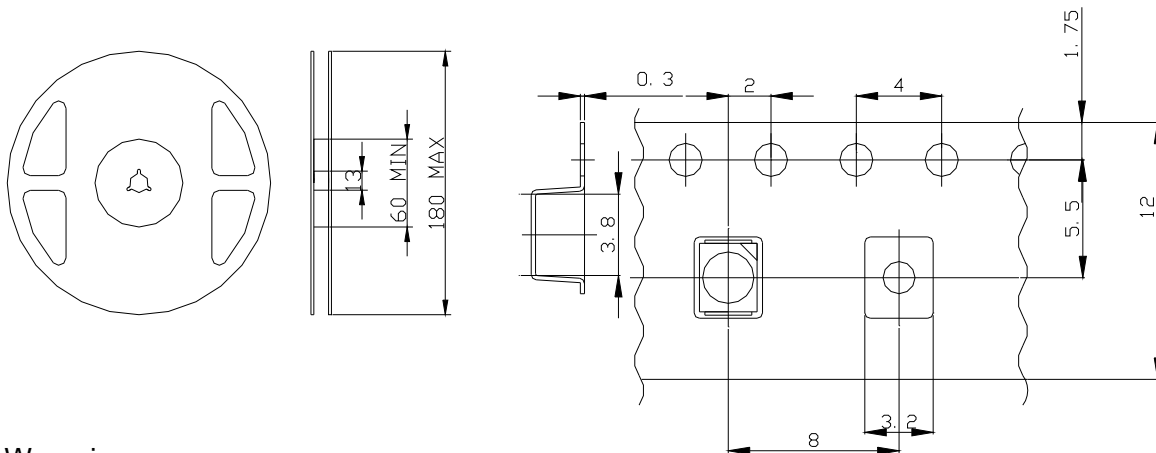
Recommended Land Layout (Unit: mm)



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.