

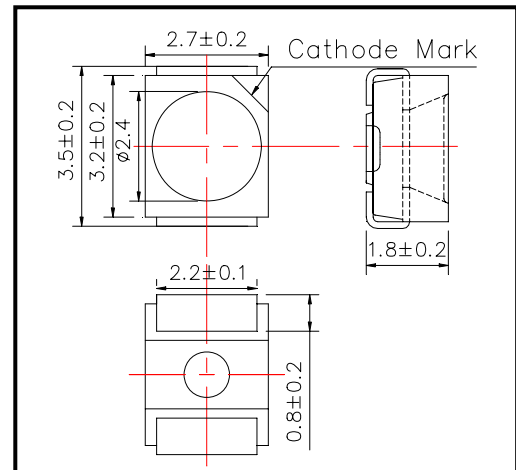
# SMT940

High Performance Infrared TOP IR LED

SMT940 consists of a GaAs LED mounted on the lead frame as TOP LED package and is 30mW typical of output power.

It emits a spectral band of radiation at 940nm.

◆ Outer dimension (Unit: mm)



◆ Specifications

1) Product Name	TOP IR LED
2) Type No.	SMT940
3) Chip	
(1) Chip Material	GaAs
(2) Peak Wavelength	940nm typ.
4) Package	
(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 <sub>D</sub>	140	mW	Ta=25°C
Forward Current	I <sub>F</sub>	100	mA	Ta=25°C
Pulse Forward Current	I <sub>FP</sub>	1000	mA	Ta=25°C
Reverse Voltage	V <sub>R</sub>	5	V	Ta=25°C
Junction Temperature	T <sub>J</sub>	100	°C	
Thermal Resistance	R <sub>thja</sub>	200	K/W	
Operating Temperature	T <sub>OPR</sub>	-20 ~ +80	°C	
Storage Temperature	T <sub>STG</sub>	-30 ~ +800	°C	
Soldering Temperature	T <sub>SOL</sub>	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 <sub>F</sub>	I <sub>F</sub> =50mA DC		1.30	1.45	V
		I <sub>F</sub> =100mA, tp=20ms		1.38	1.70	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V			10	uA
Total Radiated Power	P <sub>O</sub>	I <sub>F</sub> =50mA DC	8.0	15.0		mW
		I <sub>F</sub> =100mA, tp=20ms		30.0		
Radiant Intensity	I <sub>E</sub>	I <sub>F</sub> =50mA DC		6		mW/sr
		I <sub>F</sub> =100mA, tp=20ms		12		
Peak Wavelength	$\lambda_P$	I <sub>F</sub> =50mA DC	930	940	955	nm
Half Width	$\Delta\lambda$	I <sub>F</sub> =50mA DC		50		nm
Viewing Half Angle	$\theta_{1/2}$	I <sub>F</sub> =50mA DC		±55		deg.
Rise Time	t <sub>r</sub>	I <sub>F</sub> =50mA DC		1000		ns
Fall Time	t <sub>f</sub>	I <sub>F</sub> =50mA DC		500		ns

‡Total Radiated Power is measured by Photodyne #500

‡Radiant Intensity is measured by Tektronix J-6512.

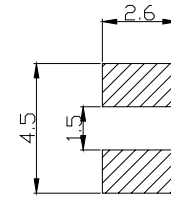
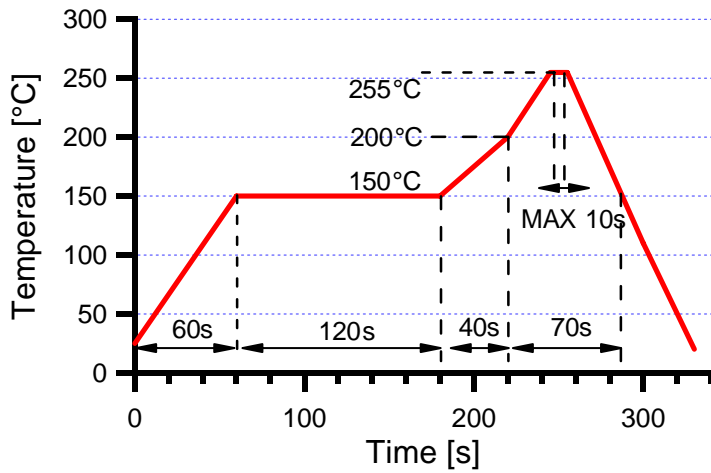
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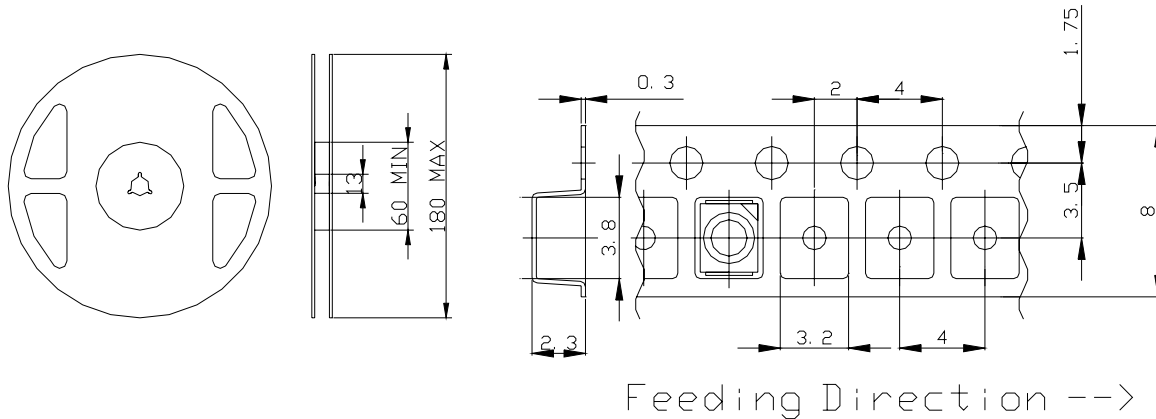
◆ SMD Application  
IR-Reflow Soldering Profile for lead free soldering

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.