

# SMT850D-23

High Performance Infrared TOP IR LED

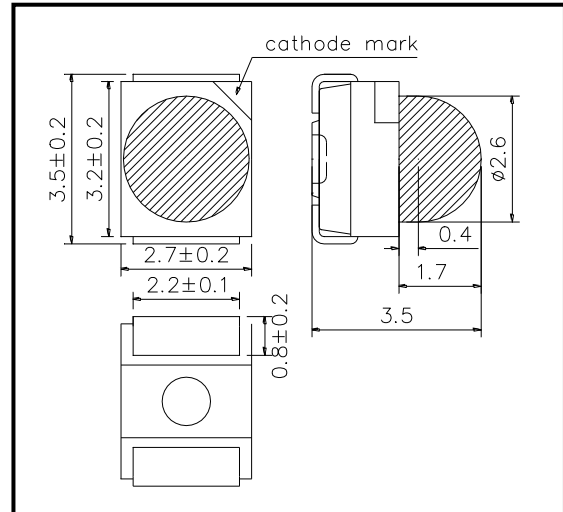
SMT850D-23 consists of an AlGaAs LED mounted on the lead frame as TOP LED package and is 24mW typical of output power.

It emits a spectral band of radiation at 850nm.

◆ Specifications

- |                     |               |
|---------------------|---------------|
| 1) Product Name     | TOP IR LED    |
| 2) Type No.         | SMT850D-23    |
| 3) Chip             |               |
| (1) Chip Material   | AlGaAs        |
| (2) Chip Dimension  | 0.35mm*0.35mm |
| (3) Peak Wavelength | 850nm typ.    |
| 4) Package          |               |
| (1) Lead Frame Die  | Silver Plated |
| (2) Package Resin   | PPA Resin     |
| (3) Lens            | Epoxy Resin   |
| (4) Diameter        | Φ2.6mm        |

◆ Outer dimension (Unit: mm)



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

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P <sub>D</sub>	160	mW	Ta=25°C
Forward Current	I <sub>F</sub>	100	mA	Ta=25°C
Pulse Forward Current	I <sub>FP</sub>	1,000	mA	Ta=25°C
Reverse Voltage	V <sub>R</sub>	5	V	Ta=25°C
Operating Temperature	T <sub>OPR</sub>	-30 ~ +80	°C	
Storage Temperature	T <sub>STG</sub>	-30 ~ +80	°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		1.55	1.70	V
		I <sub>F</sub> =100mA, tp=20ms		1.60	1.80	
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	17.0	24.0		mW
		I <sub>F</sub> =100mA, tp=20ms		48.0		
Radiant Intensity	I <sub>E</sub>	I <sub>F</sub> =50mA DC		50		mW/sr
		I <sub>F</sub> =100mA, tp=20ms		100		
Peak Wavelength	λ <sub>P</sub>	I <sub>F</sub> =50mA DC	835	850	865	nm
Half Width	Δλ	I <sub>F</sub> =50mA DC		28		nm
Viewing Half Angle	θ <sub>1/2</sub>	I <sub>F</sub> =50mA DC		±15		deg.
Rise Time	t <sub>r</sub>	I <sub>F</sub> =50mA DC		15		ns
Fall Time	t <sub>f</sub>	I <sub>F</sub> =50mA DC		10		ns

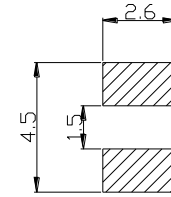
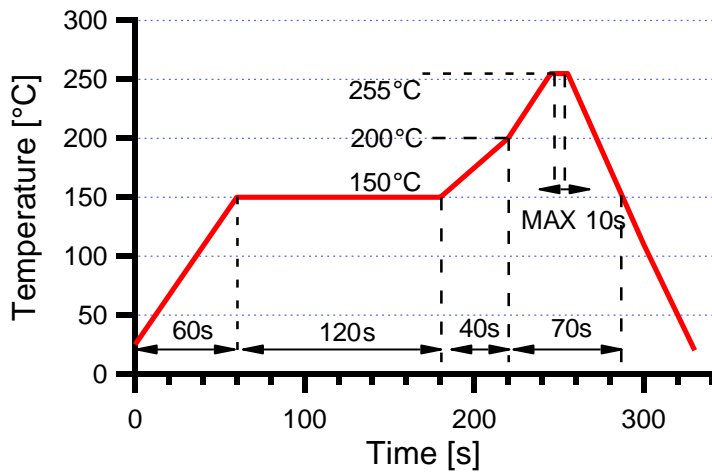
‡Total Radiated Power is measured by Photodyne #500

‡Radiant Intensity is measured by Tektronix J-6512.

◆ SMD Application

IR-Reflow Soldering Profile for lead free soldering

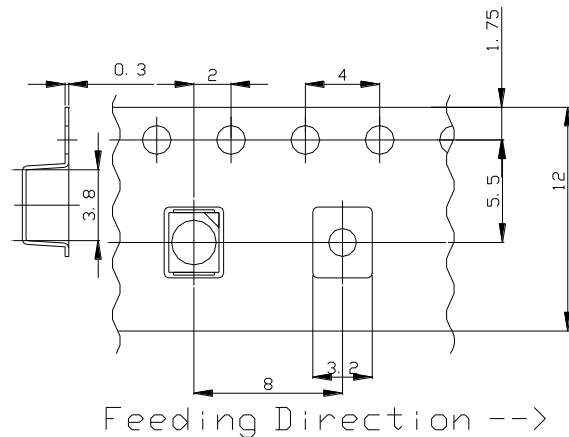
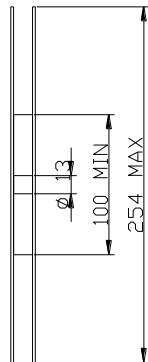
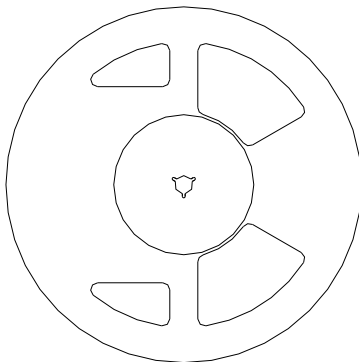
Recommended Land Layout (Unit: mm)



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.