

# SMT850D-50-27

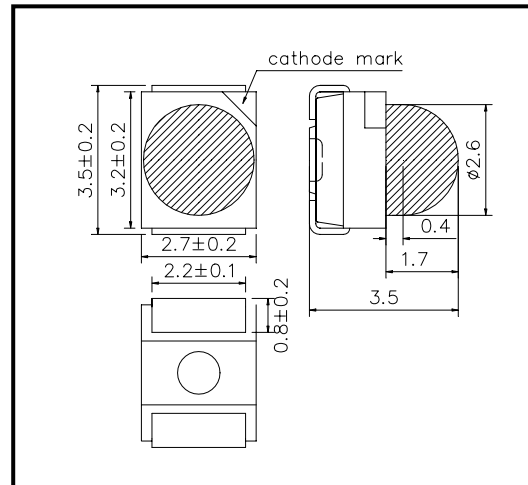
High Performance Infrared TOP LED with Lens

SMT850D-50-27 consists of a large AlGaAs LED mounted on the lead frame as TOP LED package with plastic ball lens and is 24mW typical of output power and 25mW/sr of radiant Intensity. This is adequate for strobe flash light and able to emit 1W/sr light operating at pulsed current 2A under 3.2V typ. It emits a spectral band of radiation at 850nm.

### ◆ Specifications

1) Product Name	TOP IR LED
2) Type No.	SMT850D-50-27
3) Chip	
(1) Chip Material	AlGaAs
(2) Chip Dimension	500um*500nm
(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)



### ◆ Absolute Maximum Rating

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P <sub>D</sub>	160	mW	T <sub>a</sub> =25°C
Forward Current	I <sub>F</sub>	100	mA	T <sub>a</sub> =25°C
Pulse Forward Current	I <sub>FP</sub>	2000	mA	T <sub>a</sub> =25°C
Reverse Voltage	V <sub>R</sub>	5	V	T <sub>a</sub> =25°C
Operating Temperature	T <sub>OPR</sub>	-20 ~ +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

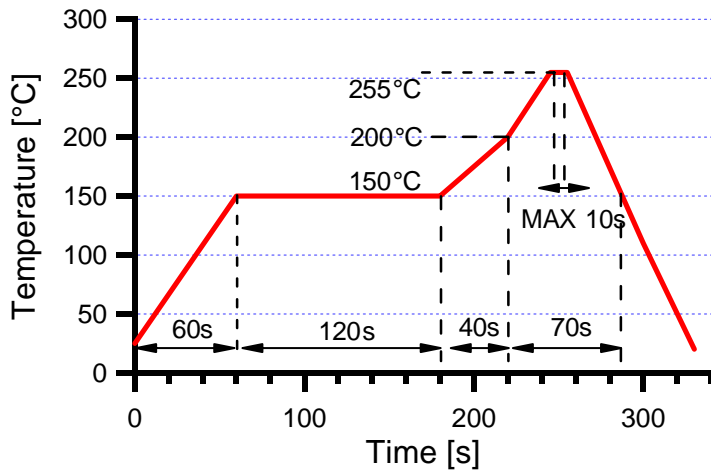
### ◆ Electro-Optical Characteristics [T<sub>a</sub>=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =50mA DC		1.45	1.60	V
		I <sub>FP</sub> =2A		3.3	4.0	
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
Radiant Intensity	I <sub>E</sub>	I <sub>F</sub> =50mA DC		25		mW/sr
		I <sub>FP</sub> =2A		1000		
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		±28		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

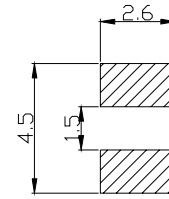
‡Total Radiated Power is measured by Photodyne #500

‡Radiant Intensity is measured by Tektronix J-6512.

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

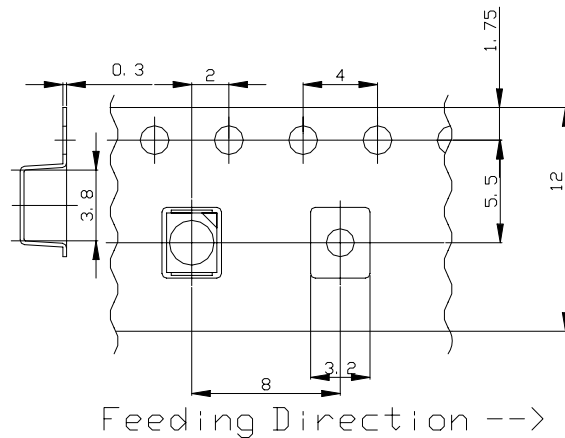
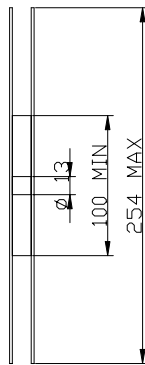
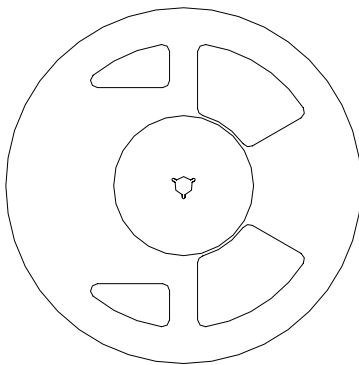


Recommended Land Layout (Unit: mm)



Don't put stress on SMD and a circuit board after soldering.

◆ SMD Packing  
Tape and Reel Dimensions (Unit: mm)



Feeding Direction -->

◆ Wrapping

Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.