

SMTQ850-23

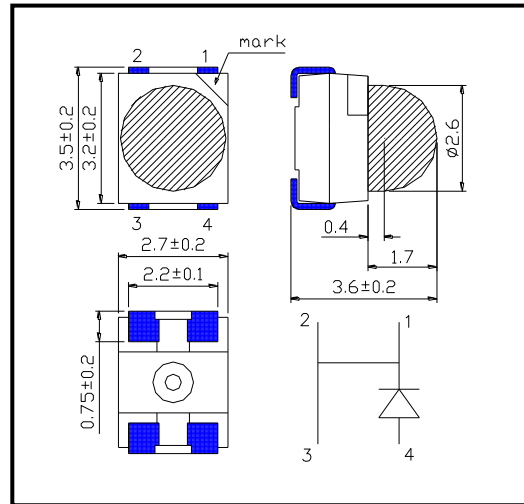
High Performance Infrared TOP LED with Lens

SMTQ850-23 consists of an AlGaAs LED mounted on the lead frame as TOP LED package with plastic ball lens and is 44mW typical of output power and 80mW/sr of radiant intensity. It emits a spectral band of radiation at 850nm.

◆ Specifications

- 1) Product Name TOP IR LED
- 2) Type No. SMTQ850-23
- 3) Chip
 - (1) Chip Material AlGaAs
 - (2) Chip Dimension 400um*400um
 - (3) Peak Wavelength 850nm typ.
- 4) Package
 - (1) Lead Frame Die Silver Plated
 - (2) Package Resin PPA Resin
 - (3) Lens Epoxy Resin
 - (4) Diameter $\Phi 2.6$ mm

◆ Outer dimension (Unit:mm)



◆ Absolute Maximum Rating

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P _D	160	mW	T _a =25°C
Forward Current	I _F	100	mA	T _a =25°C
Pulse Forward Current	I _{FP}	500	mA	T _a =25°C
Reverse Voltage	V _R	5	V	T _a =25°C
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

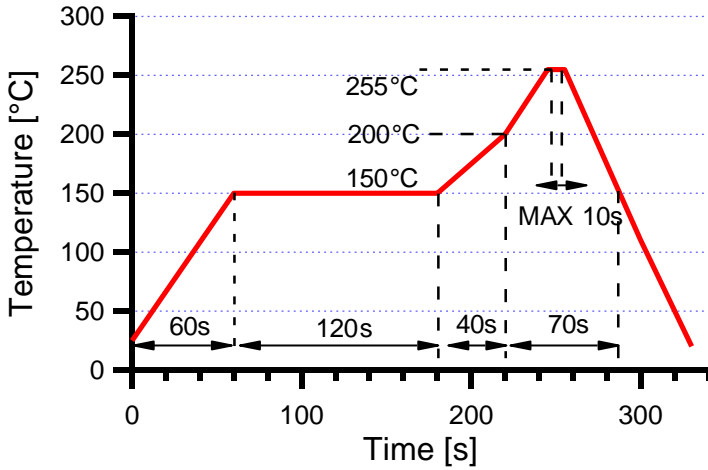
◆ Electro-Optical Characteristics [T_a=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =50mA DC		1.45	1.60	V
		I _F =100mA, t _p =20ms		1.50	1.8	
Reverse Current	I _R	V _R =5V			10	uA
Total Radiated Power	P _O	I _F =50mA DC	16.0	22.0		mW
		I _F =100mA, t _p =20ms		44.0		
Radiant Intensity	I _E	I _F =50mA DC		40		mW/sr
		I _F =100mA, t _p =20ms		80		
Peak Wavelength	λ _P	I _F =50mA DC	835	850	865	nm
Half Width	Δλ	I _F =50mA DC		40		nm
Viewing Half Angle	θ _{1/2}	I _F =50mA DC		±15		deg.
Rise Time	t _r	I _F =50mA DC		15		ns
Fall Time	t _f	I _F =50mA DC		10		ns

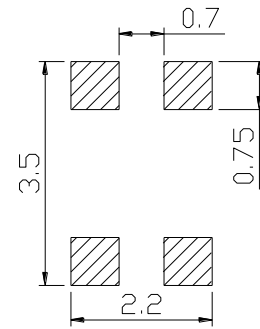
‡Total Radiated Power is measured by Photodyne #500

‡Radiant Intensity is measured by Tektronix J-6512.

◆ SMD Application
Recommended reflow soldering profile

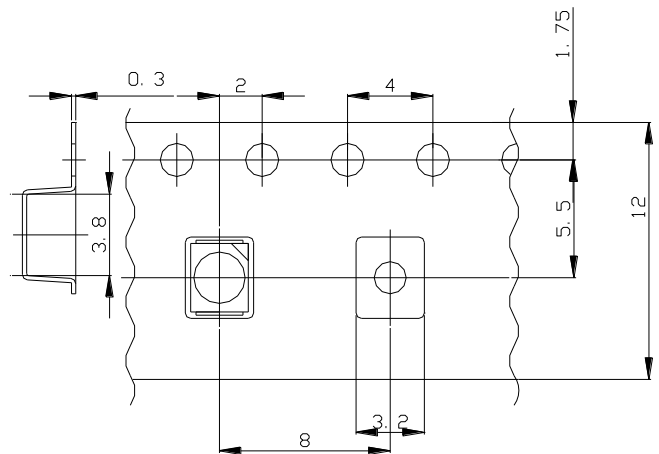
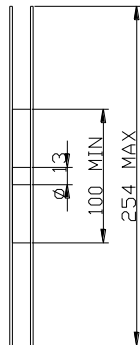
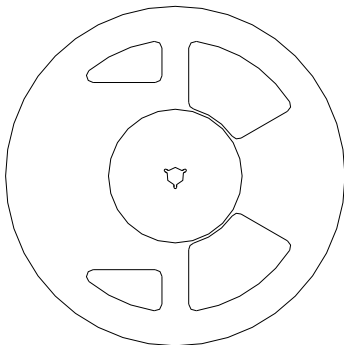


Recommended Land Layout (Unit: mm)



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.