

SMTQ850-27

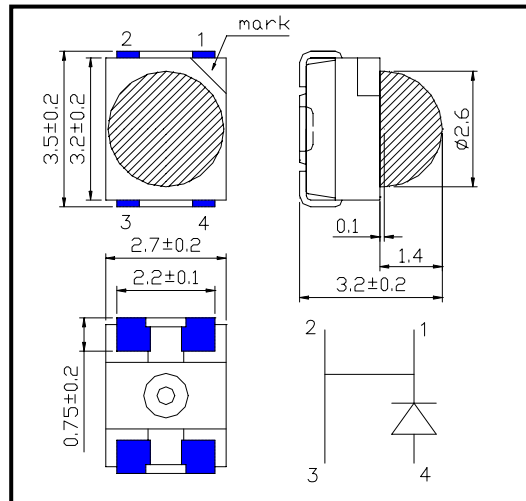
High Performance Infrared TOP LED with Lens

SMTQ850-27 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 40mW/sr of radiant Intensity. It emits a spectral band of radiation at 850nm.

◆ Specifications

- | | |
|---------------------|---------------|
| 1) Product Name | TOP IR LED |
| 2) Type No. | SMTQ850-27 |
| 3) Chip | |
| (1) Chip Material | AlGaAs |
| (2) Chip Dimension | 400um*400nm |
| (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_D	160	mW	$T_a=25^\circ\text{C}$
Forward Current	I_F	100	mA	$T_a=25^\circ\text{C}$
Pulse Forward Current	I_{FP}	500	mA	$T_a=25^\circ\text{C}$
Reverse Voltage	V_R	5	V	$T_a=25^\circ\text{C}$
Operating Temperature	T_{OPR}	-20 ~ +80	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-30 ~ +80	$^\circ\text{C}$	
Soldering Temperature	T_{SOL}	240	$^\circ\text{C}$	

‡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 [$T_a=25^\circ\text{C}$]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V_F	$I_F=50\text{mA DC}$		1.45	1.60	V
		$I_F=100\text{mA}, t_p=20\text{ms}$		1.50	1.8	
Reverse Current	I_R	$V_R=5\text{V}$			10	μA
Total Radiated Power	P_O	$I_F=50\text{mA DC}$	16.0	22.0		mW
		$I_F=100\text{mA}, t_p=20\text{ms}$		44.0		
Radiant Intensity	I_E	$I_F=50\text{mA DC}$		20		mW/sr
		$I_F=100\text{mA}, t_p=20\text{ms}$		40		
Peak Wavelength	λ_P	$I_F=50\text{mA DC}$	835	850	865	nm
Half Width	$\Delta\lambda$	$I_F=50\text{mA DC}$		40		nm
Viewing Half Angle	$\theta_{1/2}$	$I_F=50\text{mA DC}$		± 28		deg.
Rise Time	t_r	$I_F=50\text{mA DC}$		15		ns
Fall Time	t_f	$I_F=50\text{mA DC}$		10		ns

‡Total Radiated Power is measured by Photodyne #500

‡Radiant Intensity is measured by Tektronix J-6512.

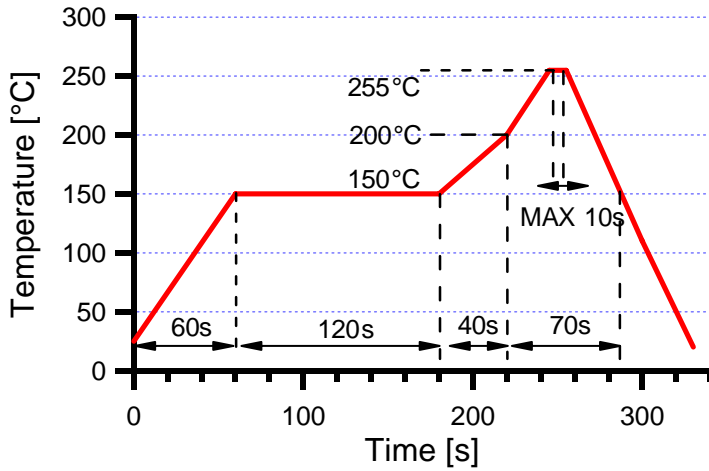
USHIO EUROPE B.V. (www.ushio.eu)

Sky Park, Breguetlaan 16-18, 1438 BC, Oude Meer, The Netherlands

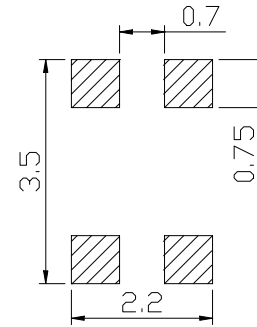
Tel: +31-20-4469-333 Fax: +31-20-4469-360 E-mail: led@ushio-europe.nl

◆ SMD Application

Recommended reflow soldering profile



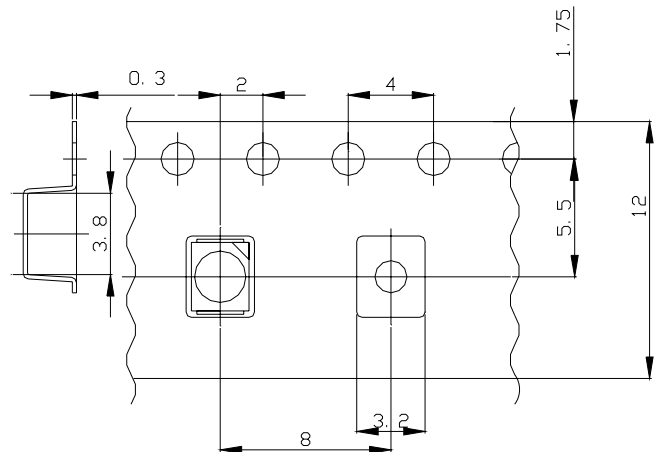
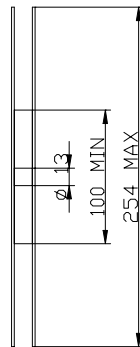
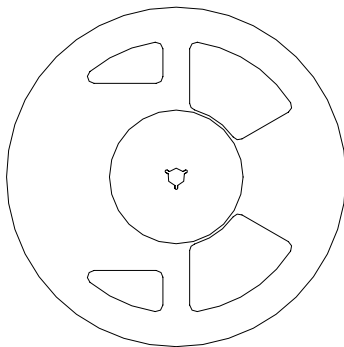
Recommended Land Layout (Unit: mm)



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.