

SMTQ810N-27

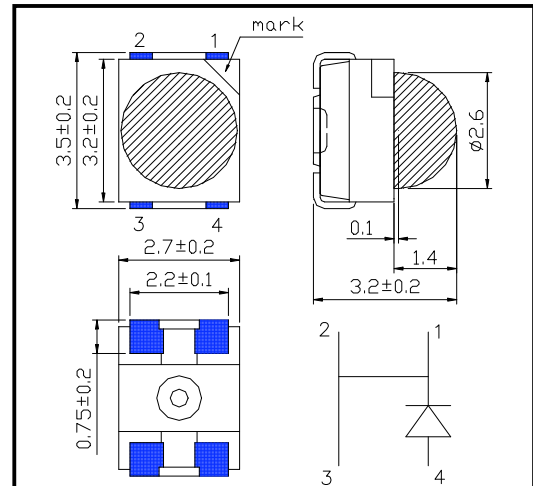
High Performance Infrared TOP LED with Lens

SMTQ810N-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 36mW/sr of radiant intensity. It emits a spectral band of radiation at 810nm.

◆ Specifications

- | | |
|---------------------|---------------|
| 1) Product Name | TOP IR LED |
| 2) Type No. | SMTQ810N-27 |
| 3) Chip | |
| (1) Chip Material | AlGaAs |
| (2) Chip Dimension | 400um*400nm |
| (3) Peak Wavelength | 810nm 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°C
Forward Current	I _F	100	mA	T _a =25°C
Pulse Forward Current	I _{FP}	1000	mA	T _a =25°C
Reverse Voltage	V _R	5	V	T _a =25°C
Junction Temperature	T _J	100	°C	
Thermal Resistance	R _{thjp}	200	K/W	
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]

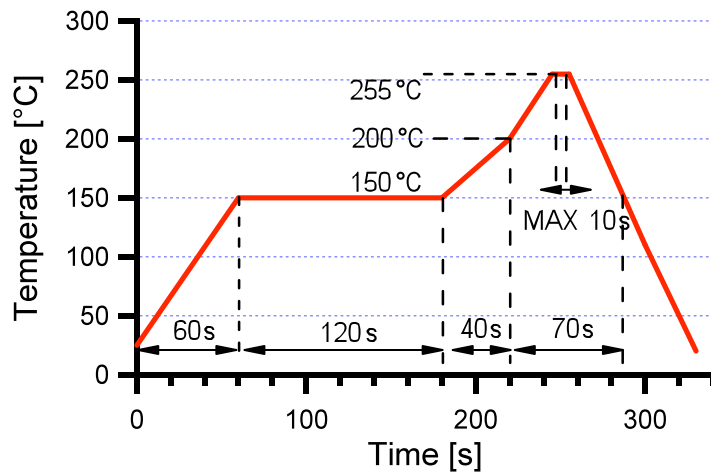
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =50mA DC		1.50	1.70	V
		I _F =100mA, t _p =20ms		1.55	1.90	
Reverse Current	I _R	V _R =5V			10	uA
Total Radiated Power	P _O	I _F =50mA DC	18.0	22.0		mW
		I _F =100mA, t _p =20ms		44.0		
Radiant Intensity	I _E	I _F =50mA		18.0		mW/sr
		I _F =100mA, t _p =20ms		36.0		
Peak Wavelength	λ _P	I _F =50mA	800	810	820	nm
Half Width	Δλ	I _F =50mA		40		nm
Viewing Half Angle	θ _{1/2}	I _F =50mA		±28		deg.
Rise Time	t _r	I _F =50mA		25		ns
Fall Time	t _f	I _F =50mA		20		ns

‡Total Radiated Power is measured by Photodyne #500

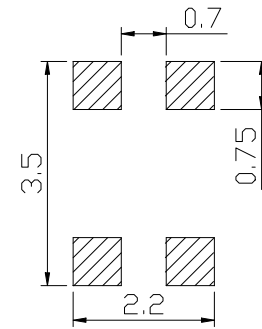
‡Radiant Intensity is measured by Tektronix J-6512.

◆ SMD Application

IR-Reflow Soldering Profile for lead free soldering



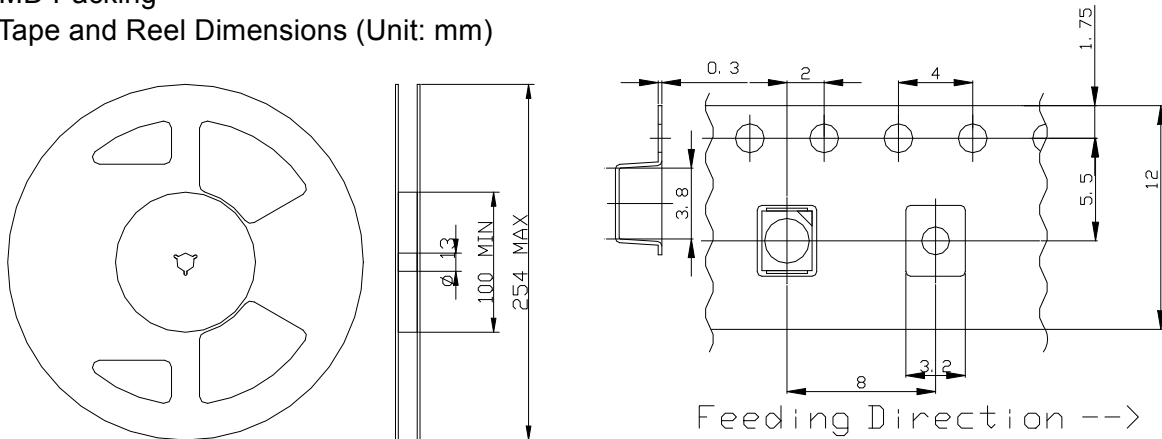
Recommended Land Layout (Unit: mm)



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.

SMD LED STORAGE AND HANDLING PRECAUTIONS

< Storage Conditions before Opening a Moisture-Barrier Aluminum Bag >

- Before opening a moisture-barrier aluminum bag, please store it at <30°C, <60%RH. Please note that the maximum shelf life is 12 months under these conditions.

< Storage Conditions after Opening a Moisture-Barrier Aluminum Bag >

- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 48 hours in a room with 5 - 30°C, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.

< Notes about Re-sealing a Moisture-Barrier Aluminum Bag >

- When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use the unused LEDs, the aluminum bag, or the silica gel.

< Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag >

- When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.

※The 48-hour- long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag.
However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag.