

**SMT970-23****High Performance Infrared TOP IR LED**

SMT970-23 consists of a GaAs LED mounted on the lead frame as TOP LED package and is 12mW typical of output power.

It emits a spectral band of radiation at 970nm.

## &lt;Specifications&gt;

1. Product Name: TOP IR LED

2. Type Number: SMT970-23

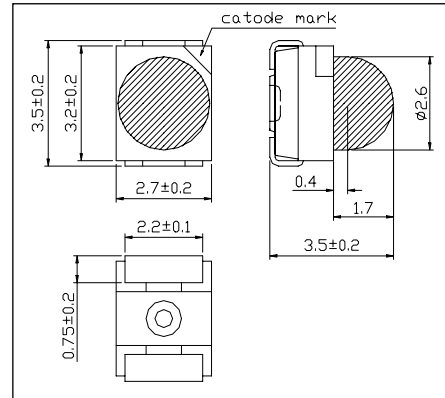
3. Chip:

- Chip Material: GaAs
- Dimension: 0.4mm x 0.4mm
- Peak Wavelength: 970nm

4. Package

- Lead Frame Die: Silver Plated
- Package Resin: PPA Resin
- Lens: Epoxy Resin

Outer Dimension (Unit:mm)



Absolute Maximum Ratings[Ta=25°C]			
Item	Symbol	Maximum Rated Value	Unit
Power Dissipation	PD	150	mW
Forward Current	IF	100	mA
Pulse Forward Current*	IFP	500	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	190	K/W
Junction Temperature	Tj	100	°C
Operating Temperature	TOPR	-30 ~ +80	°C
Storage Temperature	TSTG	-40 ~ +80	°C
Soldering Temperature**	TSOL	255	°C

\* Duty=1% and Pulse Width=10us.

\*\*Soldering condition must be completed within 10 second at 255°C.

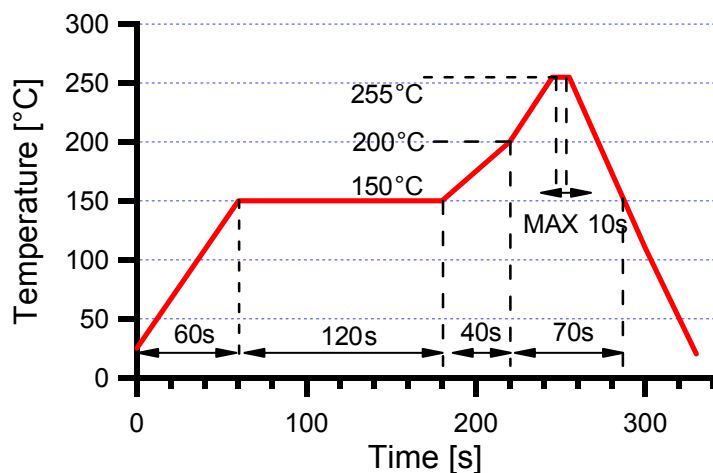
Electro-Optical Characteristics [Ta=25°C]						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	IF=50mA DC		1.30	1.45	V
		IF=100mA, tp=20ms		1.42	1.57	
Reverse Current	IR	VR=5V			10	uA
Total Radiated Power*	PO	IF=50mA DC	3	6		mW
		IF=100mA, tp=20ms		12		
Radiant Intensity**	IE	IF=50mA DC		65		mW/sr
		IF=100mA, tp=20ms		130		
Peak Wavelength	λP	IF=50mA DC	960	970	980	nm
Half Width	Δλ	IF=50mA DC		50		nm
Viewing Half Angle	θ1/2	IF=50mA DC		±12		deg
Rise Time	tr	IF=50mA DC		1000		ns
Fall Time	tf	IF=50mA DC		500		ns

\* Measured by S3584-08

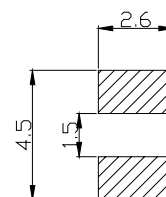
\*\* Measured by Tektronix J-6512



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

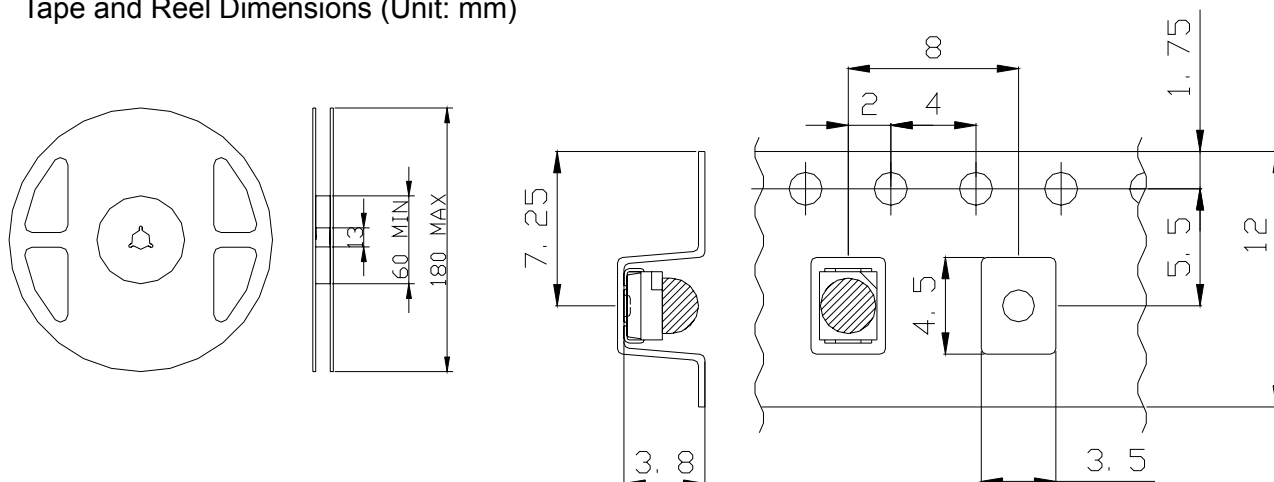


Recommended Land Layout (Unit: mm)



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 72 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 72-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.