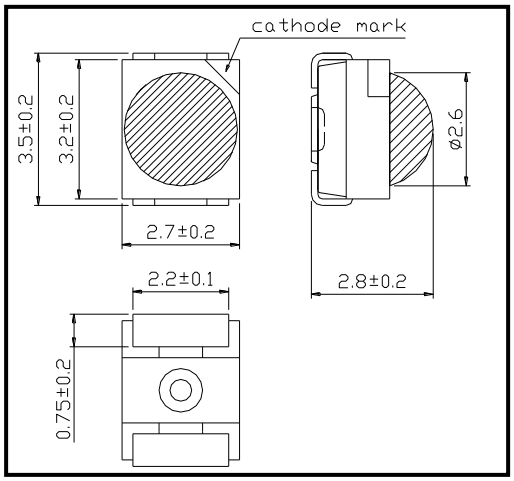
SMT970-29

Lead (Pb) Free Product RoHS Compliant

High Performance Infrared TOP IR LED

SMT970-29 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.

◆Outer dimension (Unit: mm)



◆Specifications

1) Product Name	TOP IR LED
2) Type No.	SMT970-29
3) Chip	
(1) Chip Material	GaAs
(2) Chip Dimension	0.4mm*0.4mm
(3) Peak Wavelength	970nm typ.
4) Package	
(1) Lead Frame Die	Silver Plated
(2) Package Resin	PPA Resin
(3) Lens	Epoxy Resin

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

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P_D	150	mW	Ta=25°C
Forward Current	I_F	100	mA	Ta=25°C
Pulse Forward Current	I_{FP}	500	mA	Ta=25°C
Reverse Voltage	V_R	5	V	Ta=25°C
Junction Temperature	T_J	100	°C	
Thermal Resistance	Rthja	190	K/W	
Operating Temperature	T_{OPR}	-30 ~ +80	°C	
Storage Temperature	T_{STG}	-40 ~ +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

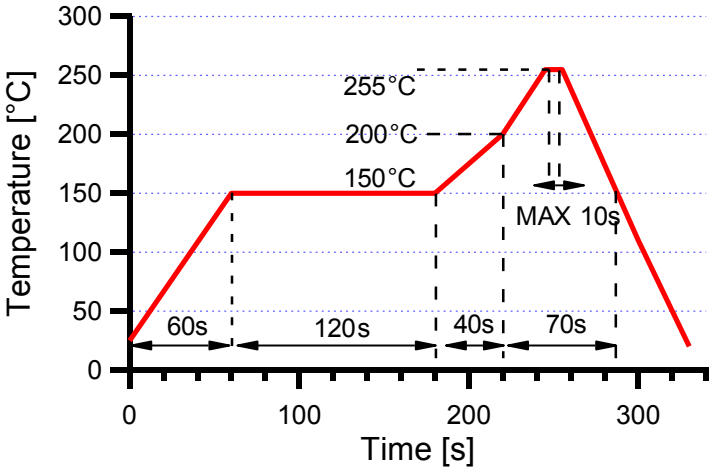
◆Electro-Optical Characteristics [Ta=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V_F	I_F=50mA DC		1.30	1.45	V
		I_F=100mA, tp=20ms		1.42	1.57	
Reverse Current	I_R	V_R=5V			10	uA
Total Radiated Power	P_O	I_F=50mA DC	3.0	6.0		mW
		I_F=100mA, tp=20ms		12.0		
Radiant Intensity	I_E	I_F=50mA DC		2.3		mW/sr
		I_F=100mA, tp=20ms		4.6		
Peak Wavelength	λ_P	I_F=50mA DC	960	970	980	nm
Half Width	$\Delta\lambda$	I_F=50mA DC		50		nm
Viewing Half Angle	$\theta 1/2$	I_F=50mA DC		±49		deg.
Rise Time	tr	I_F=50mA DC		1000		ns
Fall Time	tf	I_F=50mA DC		500		ns

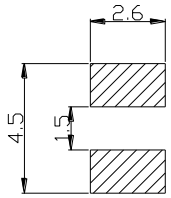
‡Total Radiated Power is measured by S3584-08
‡Radiant Intensity is measured by Tektronix J-6512.

◆ SMD Application

IR-Reflow Soldering Profile for lead free soldering



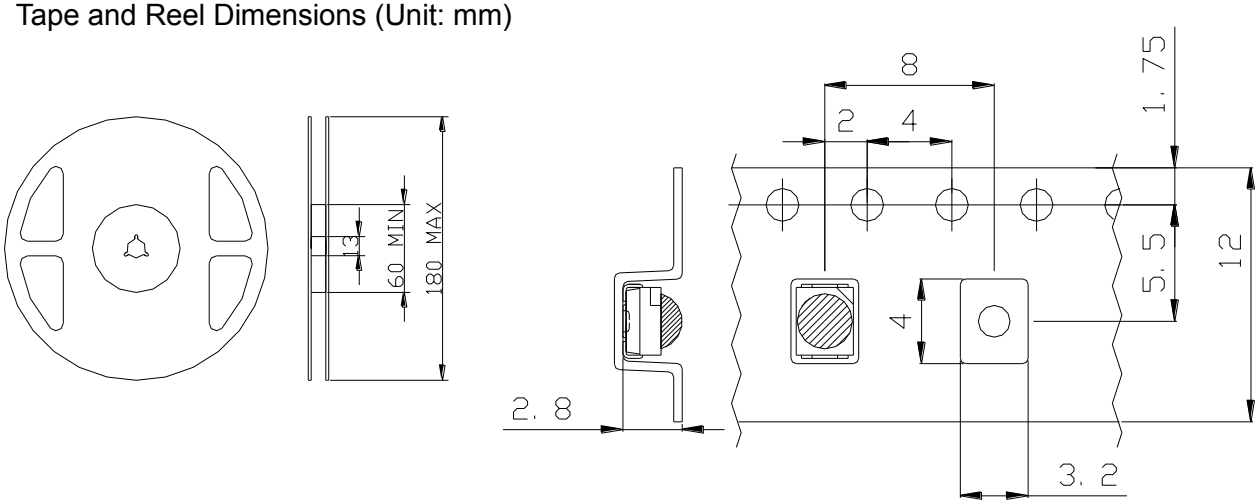
Recommended Land Layout (Unit: mm)



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 <30ºC, <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 - 30ºC, <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.

The product is manufactured by USHIO Inc. and the spec information is also from USHIO Inc.