

SMT800

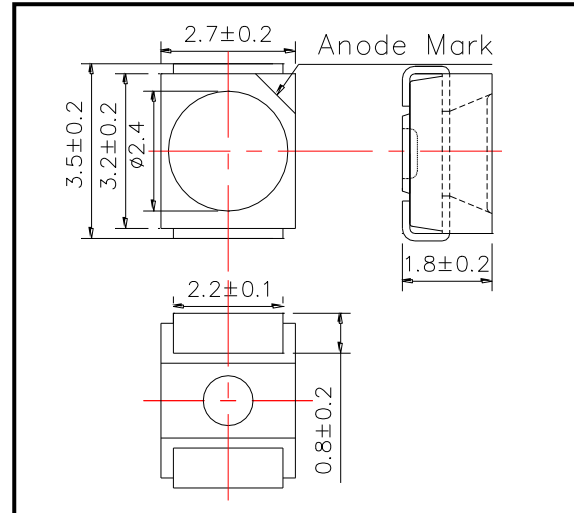
High Performance Infrared TOP IR LED

SMT800 consists of an AlGaAs LED mounted on the lead frame as TOP LED package and is 24mW typical of output power at $I_f=50\text{mA}$. It emits a spectral band of radiation at 800nm.

◆ Specifications

1) Product Name	TOP IR LED
2) Type No.	SMT800
3) Chip	
(1) Chip Material	AlGaAs
(2) Chip Dimension	400um*400um
(3) Chip Number	1pce
(4) Peak Wavelength	800nm typ.
4) Package	
(1) Lead Frame Die	Silver Plated
(2) Package Resin	PA6T
(3) Lens	Silicone or Epoxy Resin

◆ Outer dimension (Unit: mm)



◆ Absolute Maximum Ratings [$T_a=25^\circ\text{C}$]

Item	Symbol	Maximum Rated Value	Unit
Power Dissipation	PD	200	mW
Forward Current	I_F	100	mA
Pulse Forward Current	I_{FP}	500	mA
Reverse Voltage	V_R	5	V
Thermal Resistance	R_{thja}	80	K/W
Junction Temperature	T_j	120	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-40 ~ +100	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 ~ +100	$^\circ\text{C}$
Soldering Temperature	T_{SOL}	250	$^\circ\text{C}$

‡Pulse Forward Current condition: Duty=1% and Pulse Width=10us.

‡Soldering condition: Soldering condition must be completed within 5 seconds at 250°C

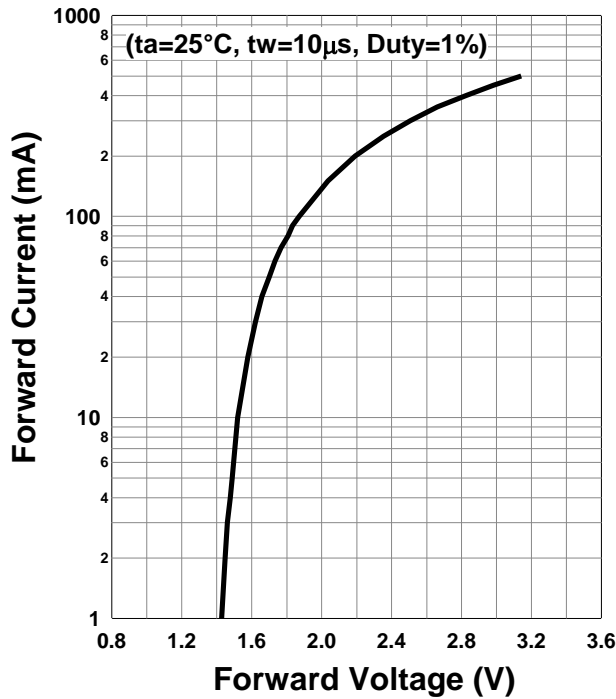
◆ Electro-Optical Characteristics [Ta=25°C typ.]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =50mA		1.7	2.0	V
	V _{FP}	I _{FP} =500mA		3.1		
Radiated Power	P _O	I _F =50mA		24		mW
		I _{FP} =500mA		220		
Radiant Intensity	I _E	I _F =50mA		21		mW/sr
		I _{FP} =500mA		190		
Peak Wavelength	λ _P	I _F =50mA	790	800	810	nm
Half Width	Δλ	I _F =50mA		35		nm
Viewing Half Angle	θ 1/2	I _F =50mA		±60		deg.
Rise Time	t _r	I _F =50mA		25		ns
Fall Time	t _f	I _F =50mA		25		ns

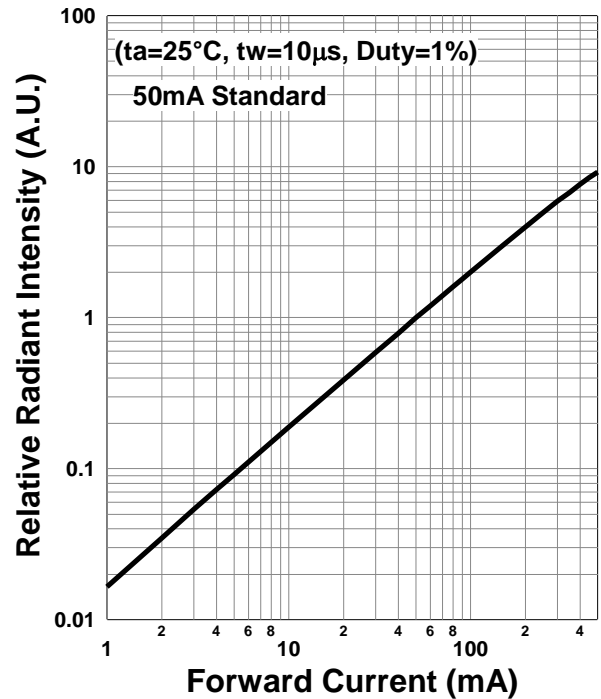
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by CIE127-2007 Condition B.

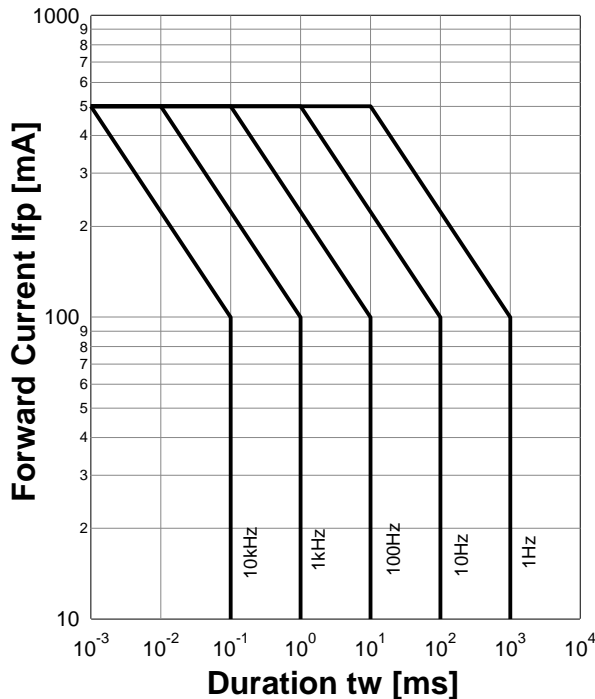
Forward Current - Forward Voltage



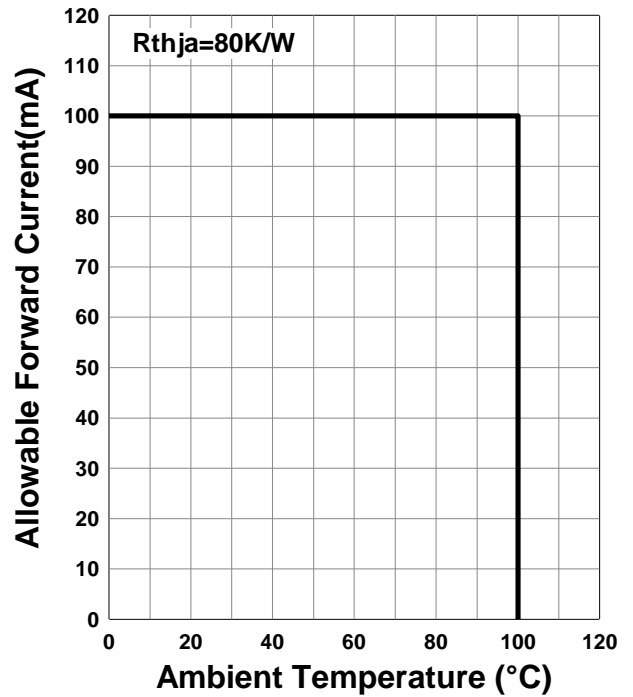
Relative Radiant Intensity - Forward Current



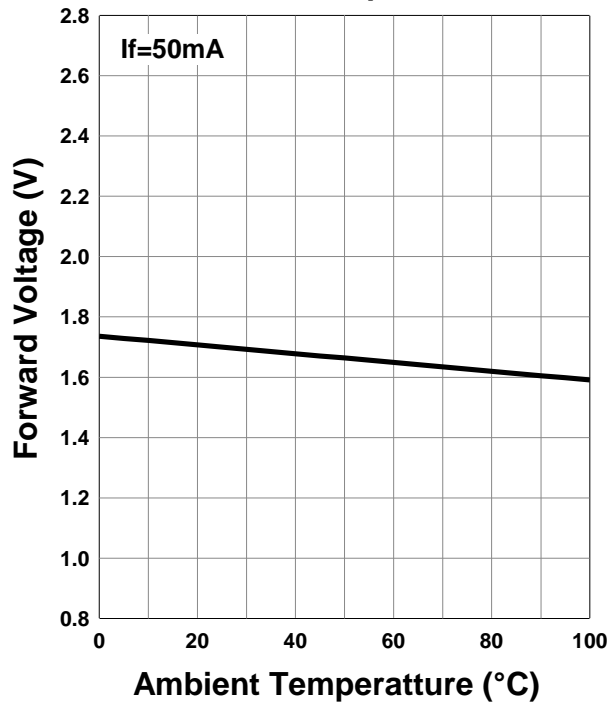
Forward Current - Pulse Duration



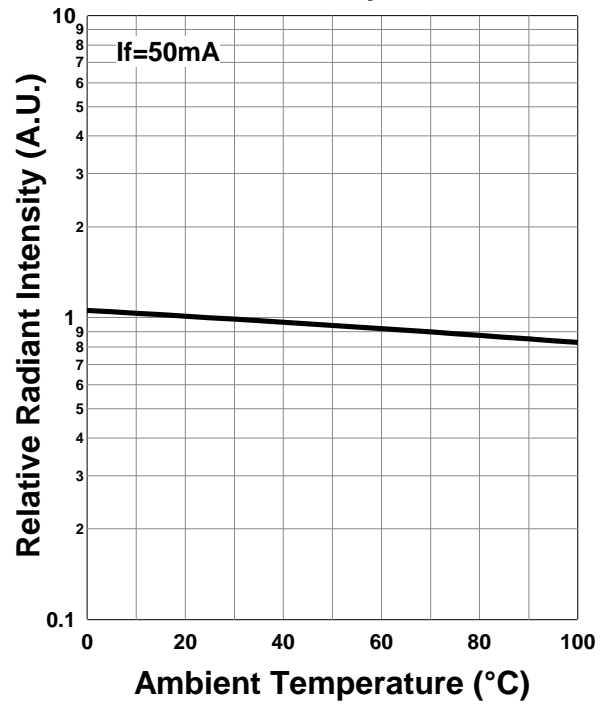
Allowable Forward Current - Ambient Temperature



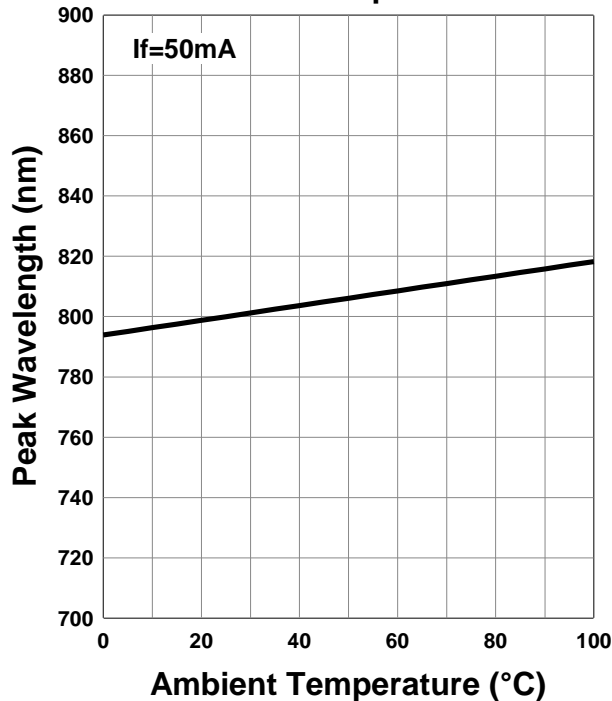
Forward Voltage - Ambient Temperature



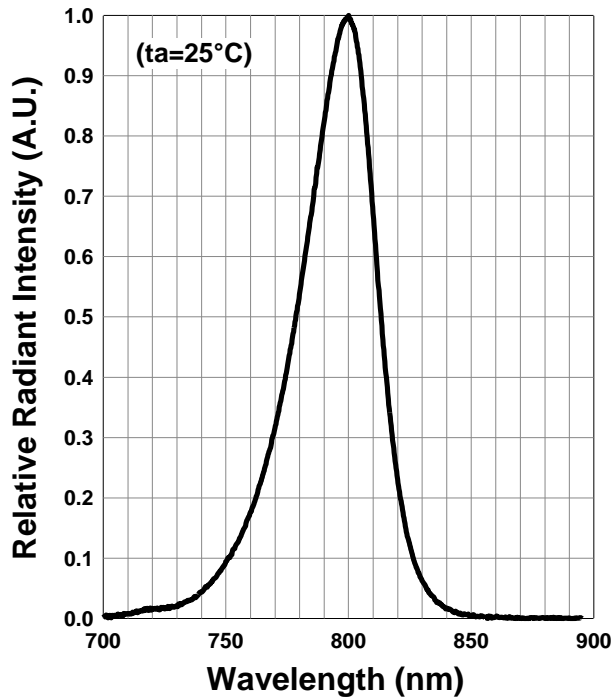
Relative Radiant Intensity - Ambient Temperature



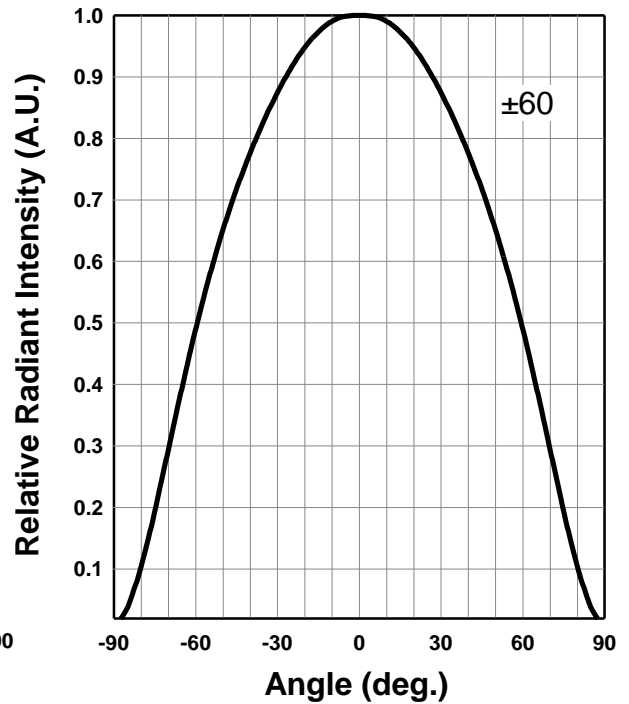
Peak Wavelength - Ambient Temperature



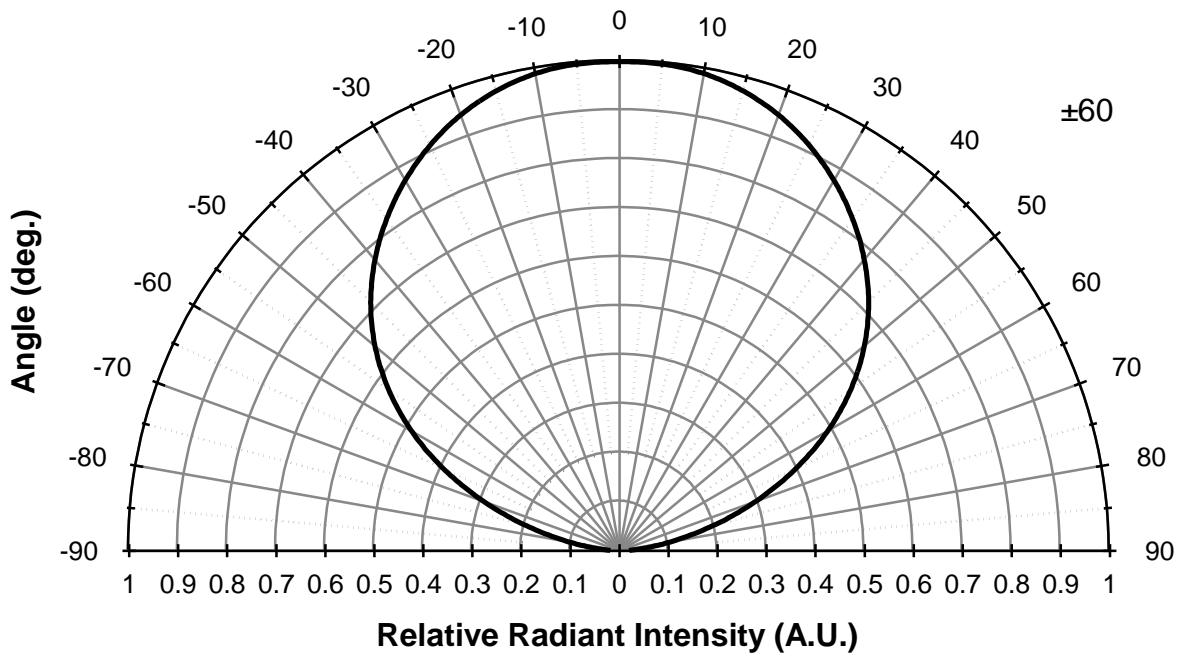
Relative Spectral Emission



Radiation Characteristics



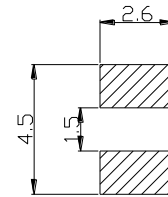
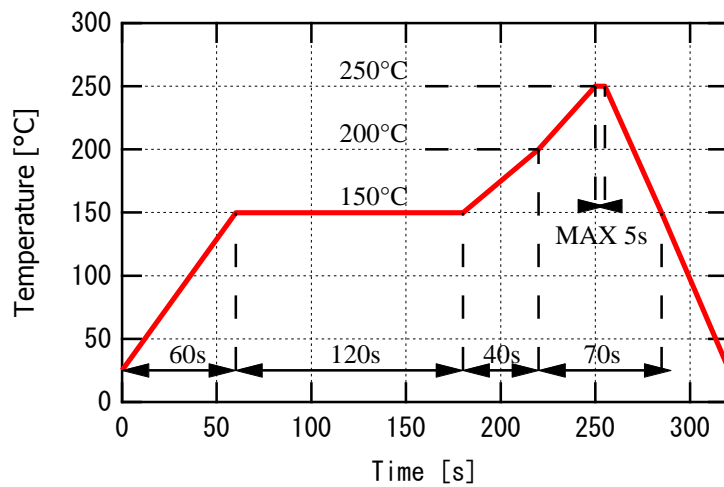
Radiation Characteristics



◆ SMD Application

IR-Reflow Soldering Profile for lead free soldering

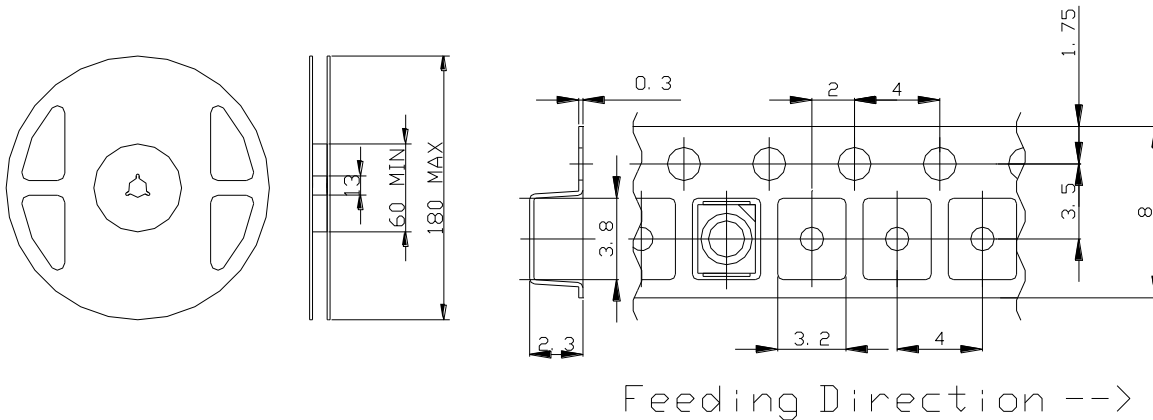
◆ recommended Land Layout (Unit: mm)



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 168 hours in a room with 5 - 30°C, <60%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 168-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.

Disclaimer

Product specifications and data shown in this product catalog are subject to change without notice for the purposes of improving product performance, reliability, design, or otherwise.

Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements. Product data and parameters may vary by user application and over time.

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