

SMT780D

High Performance Infrared TOP LED

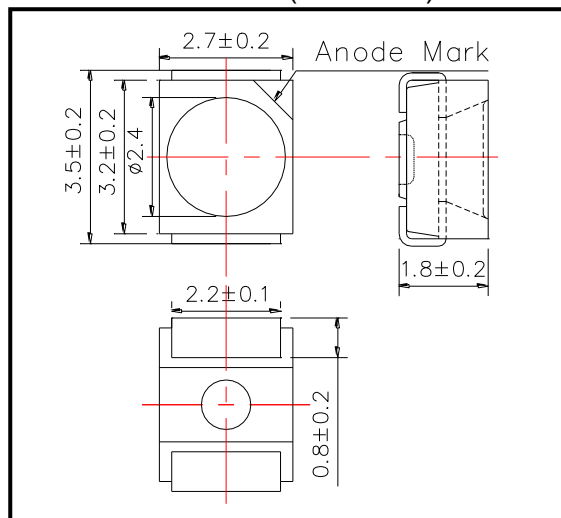
SMT780D consists of an AlGaInP LED mounted on the lead frame as TOP LED package with plastic ball lens and is 90mW/sr of radiant intensity.

It emits a spectral band of radiation at 780nm.

◆ Specifications

1) Product Name	TOP IR LED
2) Type No.	SMT780D
3) Chip	
(1) Chip Material	AlGaInP
(2) Chip Dimension	350um*350um
(3) Chip Number	1pce
(4) Peak Wavelength	780nm typ.
4) Package	
(1) Lead Frame Die	Silver Plated
(2) Package Resin	PA6T Resin
(3) Lens	Epoxy Resin

◆ Outer dimension (Unit: mm)



◆ Absolute Maximum Ratings [Ta=25°C]

Item	Symbol	Maximum Rated Value	Unit
Power Dissipation	PD	220	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	500	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	80	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	TOPR	-40 ~ +100	°C
Storage Temperature	TSTG	-40 ~ +100	°C
Soldering Temperature	TSOL	250	°C

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

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

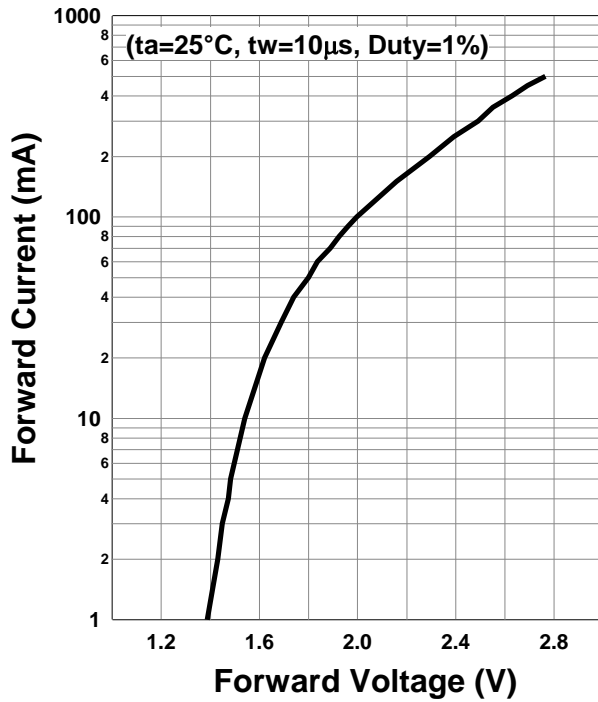
◆ Electro-Optical Characteristics [Ta=25°C typ.]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	IF=50mA		1.8	2.2	V
	VFP	I _{FP} =500mA		2.8		
Radiated Power	PO	IF=50mA		24		mW
		I _{FP} =500mA		200		
Radiant Intensity	IE	IF=50mA		11		mW/sr
		I _{FP} =500mA		90		
Peak Wavelength	λ_P	IF=50mA	770	780	790	nm
Half Width	$\Delta\lambda$	IF=50mA		26		nm
Viewing Half Angle	$\theta_{1/2}$	IF=50mA		±59		deg.
Rise Time	tr	IF=50mA		60		ns
Fall Time	tf	IF=50mA		60		ns

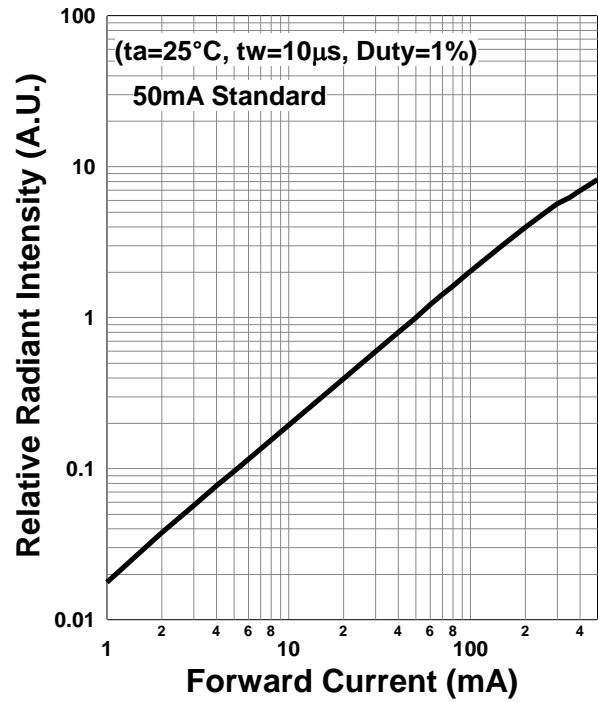
‡Radiated Power is measured by S3584-08.

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

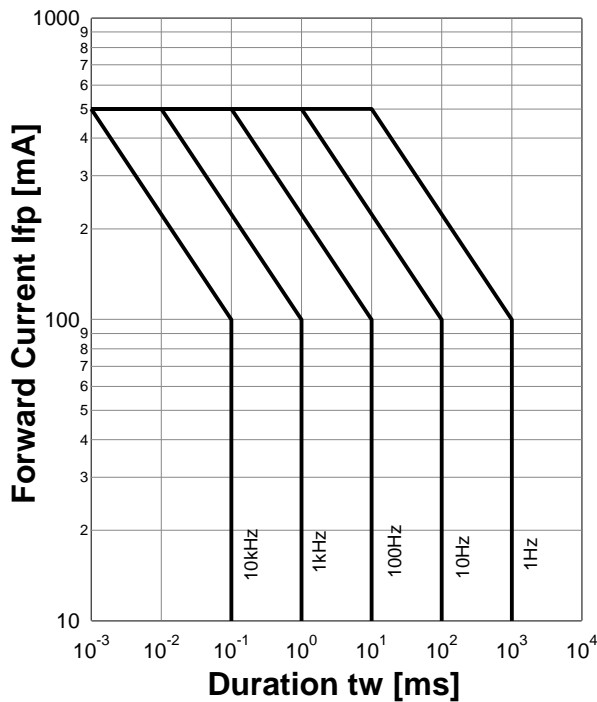
Forward Current - Forward Voltage



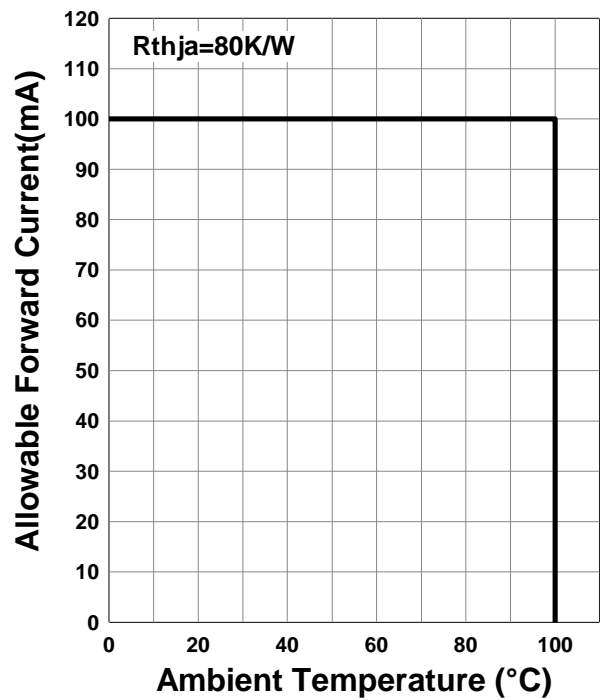
Relative Radiant Intensity - Forward Current



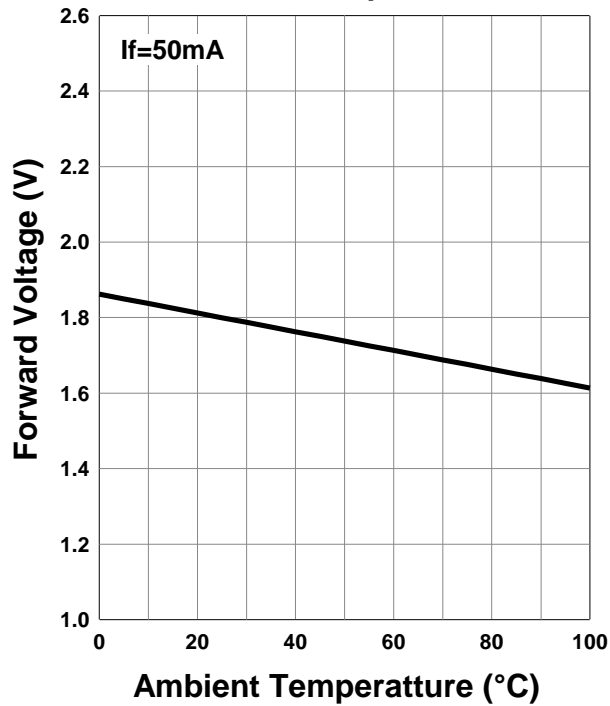
Forward Current - Pulse Duration



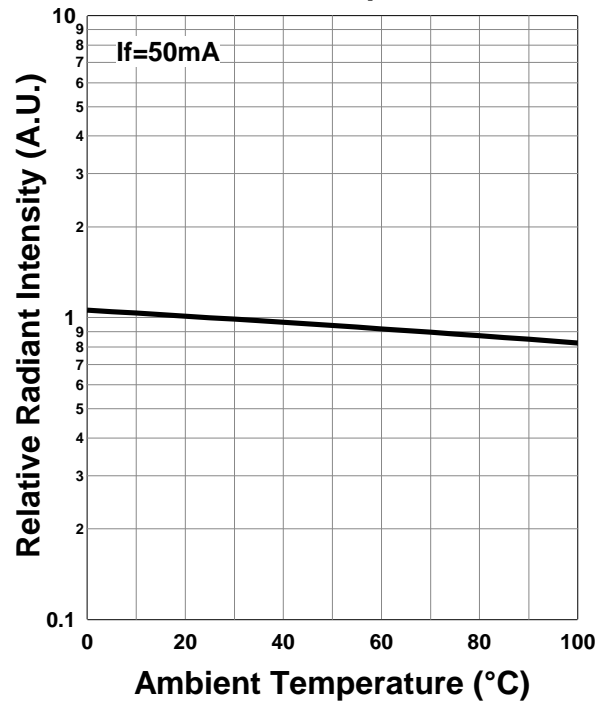
Allowable Forward Current - Ambient Temperature



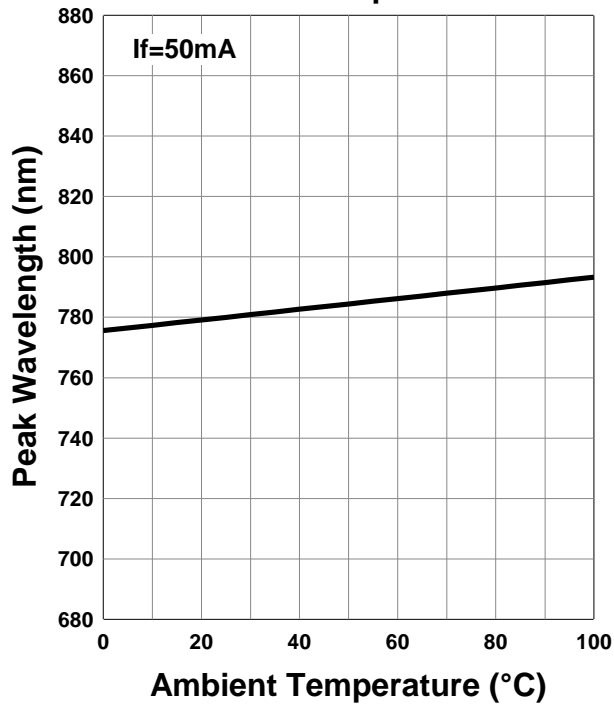
Forward Voltage - Ambient Temperature



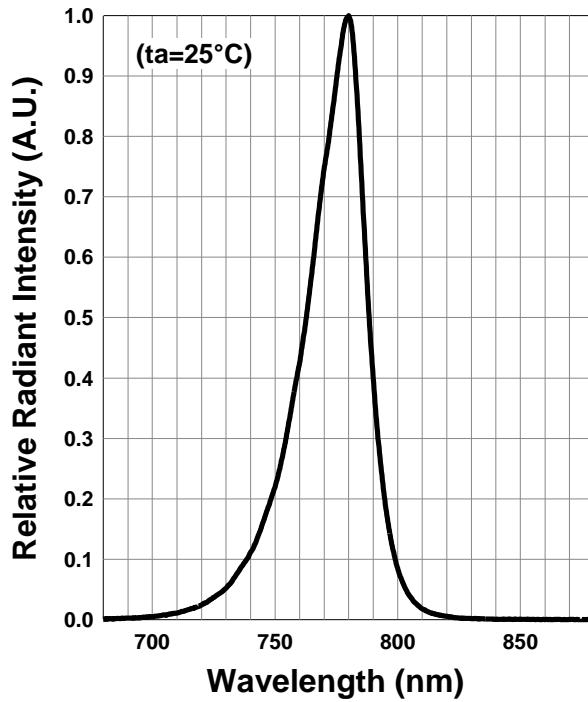
Relative Radiant Intensity - Ambient Temperature



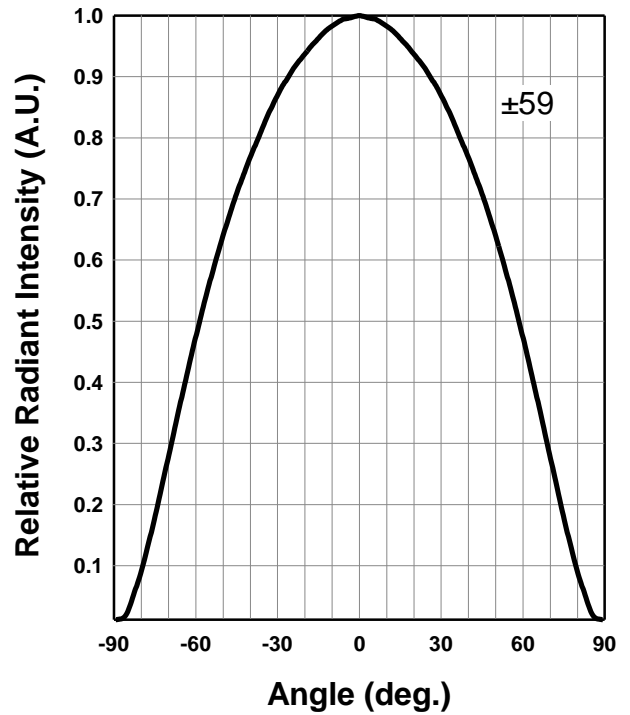
Peak Wavelength - Ambient Temperature



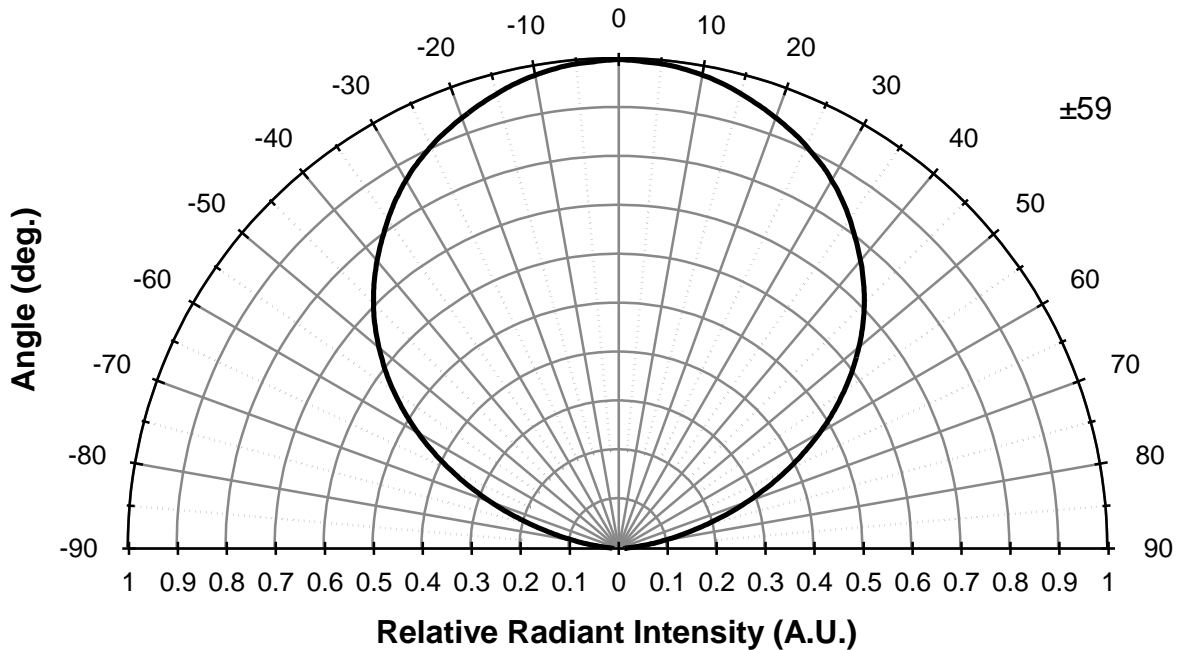
Relative Spectral Emission



Radiation Characteristics



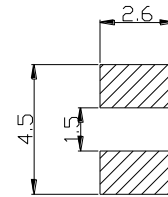
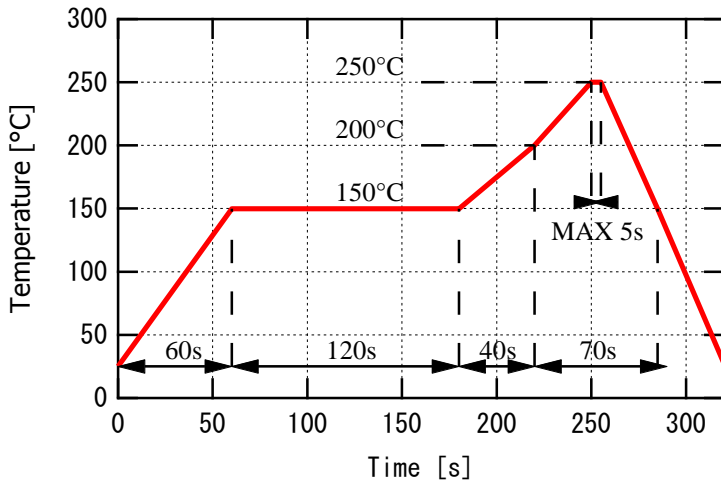
Radiation Characteristics



◆ SMD Application

IR-Reflow Soldering Profile for lead free soldering

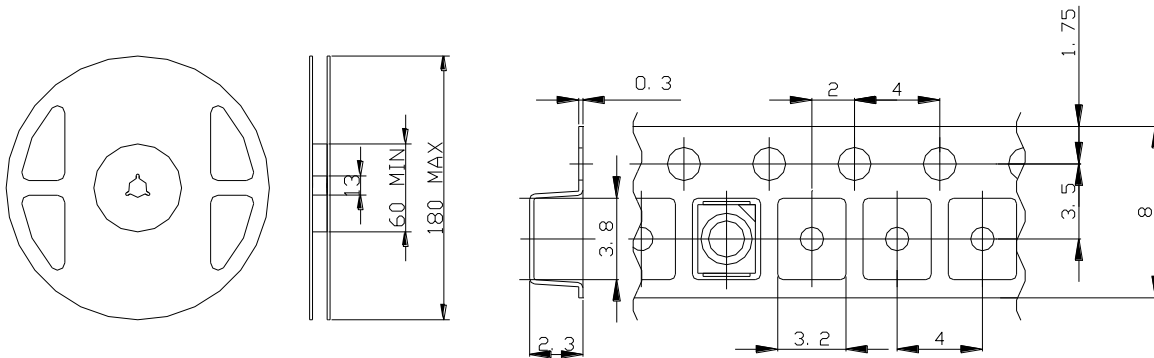
◆ recommended Land Layout (Unit: mm)



Don't put stress on SMD and a circuit board after soldering.

◆ SMD Packing

Tape and Reel Dimensions (Unit: mm)



Feeding Direction -->

◆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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