

SMT640

High Performance Red color TOP LED

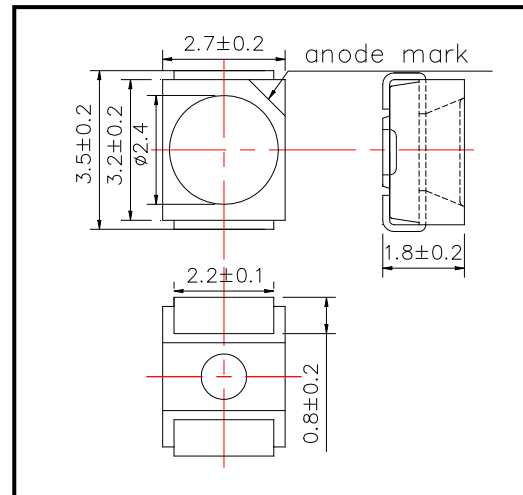
SMT640 consists of an AlGaInP LED mounted on the lead frame as TOP LED package and is 800mcd typical of Brightness.

It emits a spectral band of radiation at 640nm.

◆ Specifications

1) Product Name	TOP LED
2) Type No.	SMT640
3) Chip	
(1) Chip Material	AlGaInP
(2) Peak Wavelength	640nm typ.
4) Package	
(1) Lead Frame Die	Silver Plated
(2) Package Resin	PPA Resin
(3) Lens	Epoxy

◆ Outer dimension (Unit: mm)



◆ Absolute Maximum Rating

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P_D	175	mW	$T_a=25^\circ\text{C}$
Forward Current	I_F	75	mA	$T_a=25^\circ\text{C}$
Reverse Voltage	V_R	5	V	$T_a=25^\circ\text{C}$
Operating Temperature	T_{OPR}	-30 ~ +80	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-40 ~ +80	$^\circ\text{C}$	
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

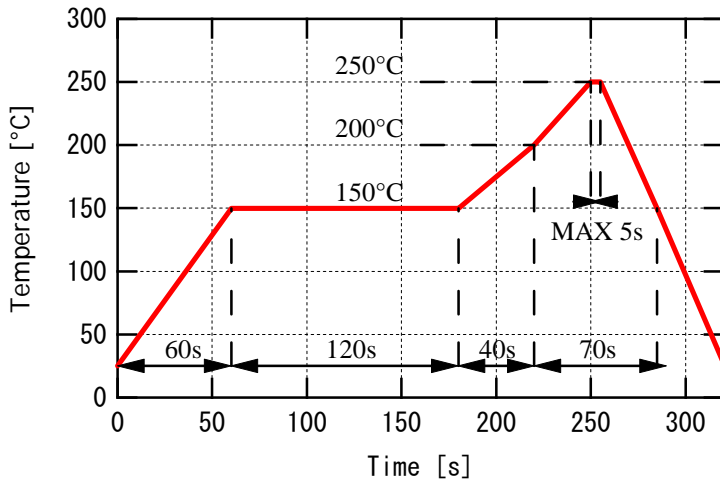
◆ Electro-Optical Characteristics [$T_a=25^\circ\text{C}$]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V_F	$I_F=20\text{mA}$		2.0	2.3	V
		$I_F=50\text{mA}$		2.2	2.5	
Reverse Current	I_R	$V_R=5\text{V}$			10	μA
Total Radiated Power	P_O	$I_F=20\text{mA}$	3.0	6.0		mW
		$I_F=50\text{mA}$	7.5	13.5		
Brightness	I_v	$I_F=20\text{mA}$		800		mcd
		$I_F=50\text{mA}$		1600		
Radiant Intensity	I_E	$I_F=20\text{mA}$		2.5		mW/sr
		$I_F=50\text{mA}$		6.0		
Peak Wavelength	λ_P	$I_F=50\text{mA}$	630	640	650	nm
	λ_D			628		
Half Width	$\Delta\lambda$	$I_F=20\text{mA}$		25		nm
Viewing Half Angle	$\theta_{1/2}$	$I_F=20\text{mA}$		± 55		deg.

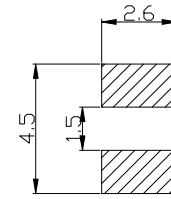
‡Total Radiated Power is measured by Photodyne #500

‡Radiant Intensity is measured by Tektronix J-6512.

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

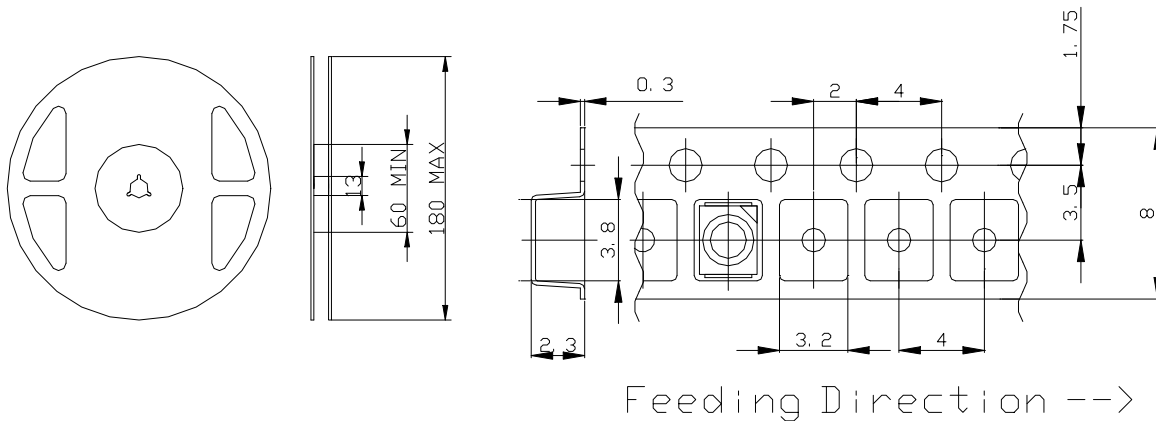


Recommended Land Layout (Unit: mm)



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 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.