

# SMT450

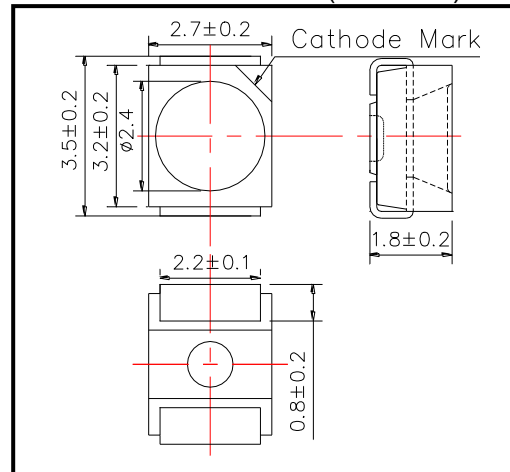
High Performance Blue color TOP LED

SMT450 consists of an InGaN LED mounted on the lead frame as TOP LED package and is 200mcd typical of Brightness. It emits a spectral band of radiation at 450nm.

◆ Specifications

- 1) Product Name TOP LED
- 2) Type No. SMT450
- 3) Chip
  - (1) Chip Material InGaN
  - (2) Peak Wavelength 450nm typ.
- 4) Package
  - (1) Lead Frame Die Silver Plated
  - (2) Package Resin PPA Resin
  - (3) Lens Epoxy Resin

◆ Outer dimension (Unit: mm)



◆ Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P <sub>D</sub>	190	mW	T <sub>a</sub> =25°C
Forward Current	I <sub>F</sub>	50	mA	T <sub>a</sub> =25°C
Pulse Forward Current	I <sub>FP</sub>	200	mA	T <sub>a</sub> =25°C
Reverse Voltage	V <sub>R</sub>	5	V	T <sub>a</sub> =25°C
Operating Temperature	T <sub>OPR</sub>	-30 ~ +80	°C	
Storage Temperature	T <sub>STG</sub>	-40 ~ +80	°C	
Soldering Temperature	T <sub>SOL</sub>	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 [T<sub>a</sub>=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA		3.3	4.0	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V			10	uA
Radiated Power	P <sub>O</sub>	I <sub>F</sub> =20mA		16		mW
Radiant Intensity	I <sub>E</sub>	I <sub>F</sub> =20mA		4		mW/sr
Brightness	I <sub>V</sub>	I <sub>F</sub> =20mA	100	200		mcd
Peak Wavelength	λ <sub>P</sub>	I <sub>F</sub> =20mA	440	450	460	nm
Half Width	Δλ	I <sub>F</sub> =20mA		20		nm
Viewing Half Angle	θ <sub>1/2</sub>	I <sub>F</sub> =20mA		±55		deg.

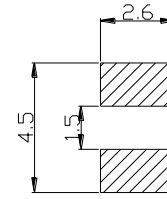
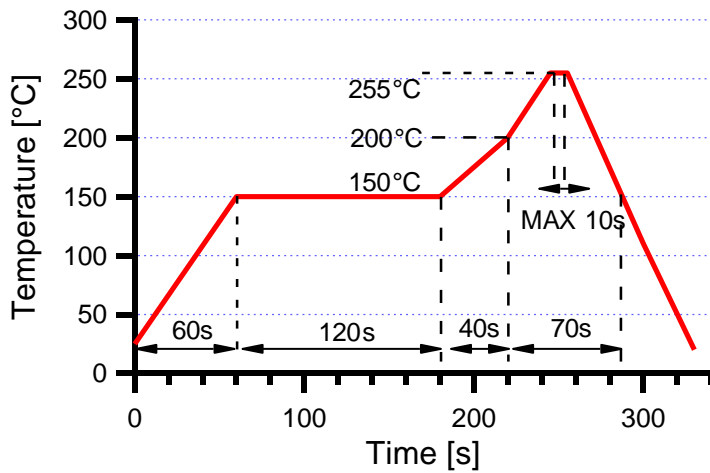
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J-6512.

‡Brightness is measured by Tektronix J-16.

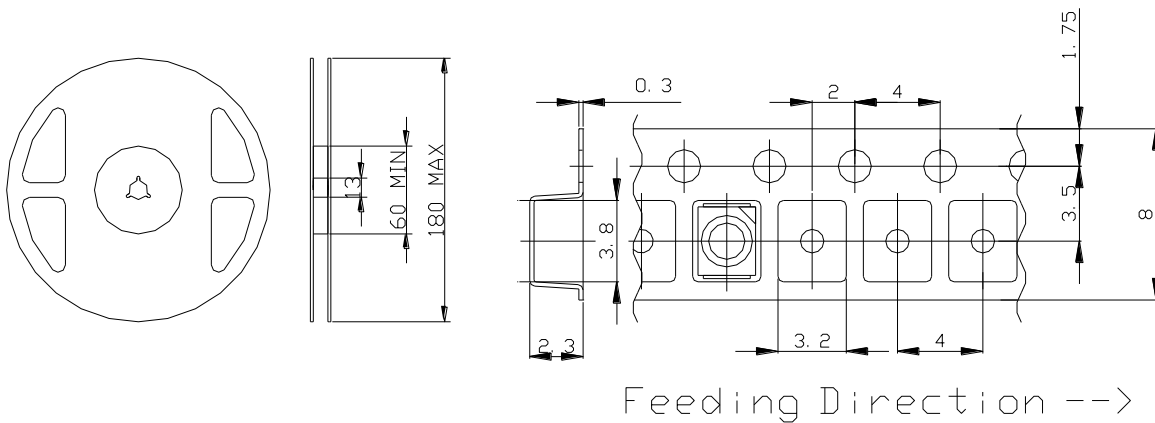
◆ SMD Application  
IR-Reflow Soldering Profile for lead free soldering

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 48 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 48-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.