

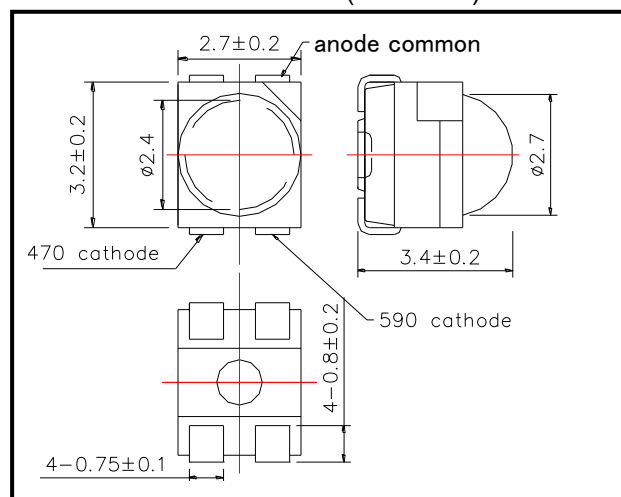
SMT470/590-23 High Performance Bi-color TOP LED

Bi-color LED of SMT470/590-23 consists of InGaN and AlGaInP LEDs mounted on the lead frame as TOP LED package with plastic ball lens and with $\pm 15^\circ$ of viewing half angle. It emits a spectral band of radiation at 465nm and 595nm at anode common.

◆ Specifications

- 1) Product Name Bi-color TOP LED
- 2) Type No. SMT470/590-23
- 3) Chip
- (1) Chip Material InGaN/AlGaInP
- (2) Peak Wavelength 465nm/595nm
- 4) Package
- (1) Lead Frame Die Silver Plated
- (2) Package Resin PPA Resin
- (3) Lens Epoxy Resin
- (4) Diameter $\Phi 2.6\text{mm}$

◆ Outer dimension (Unit: mm)



◆ Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value		Unit	Ambient Temperature
		470nm	590nm		
Power Dissipation	P _D	200	120	mW	T _a =25°C
Forward Current	I _F	50		mA	T _a =25°C
Reverse Voltage	V _R	5		V	T _a =25°C
Junction Temperature	T _J	100		°C	
Thermal Resistance	R _{thjp}	200		K/W	
Operating Temperature	T _{OPR}	-20 ~ +80		°C	
Storage Temperature	T _{STG}	-30 ~ +80		°C	
Soldering Temperature	T _{SOL}	255		°C	

‡Soldering condition: Soldering condition must be completed within 10 seconds at 255C

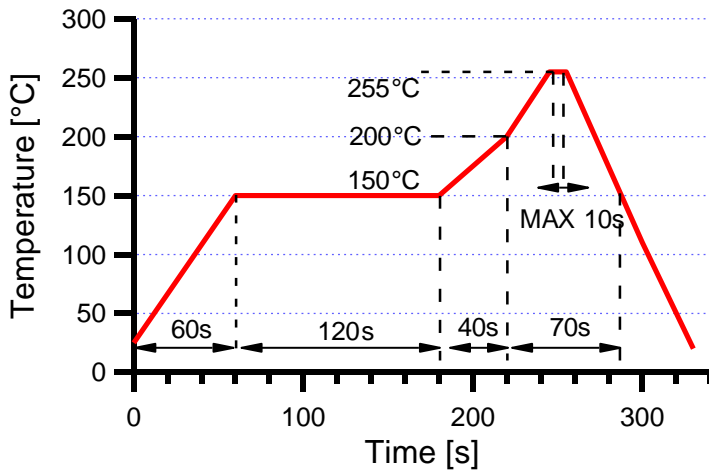
◆ Electro-Optical Characteristics [T_a=25°C]

Item	Symbol	Condition	Minimum		Typical		Maximum		Unit
			470nm	590nm	470nm	590nm	470nm	590nm	
Forward Voltage	V _F	I _F =20mA			3.4	2.2	4.0	2.4	V
Reverse Current	I _R	V _R =5V					10		uA
Total Radiated Power	P _O	I _F =20mA			10	4			mW
Brightness	I _v	I _F =20mA			2.0	2.5			cd
Radiant Intensity	I _E	I _F =20mA			3.0	5.0			mW/sr
Peak Wavelength	λ _P	I _F =20mA	455	585	465	595	475	605	nm
Half Width	Δλ	I _F =20mA			25	18			nm
Viewing Half Angle	θ _{1/2}	I _F =20mA			±15				deg.

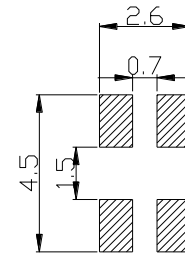
‡Total Radiated Power is measured by Photodyne #500

‡Brightness is measured by Tektronix J-16.

Recommended reflow soldering profile



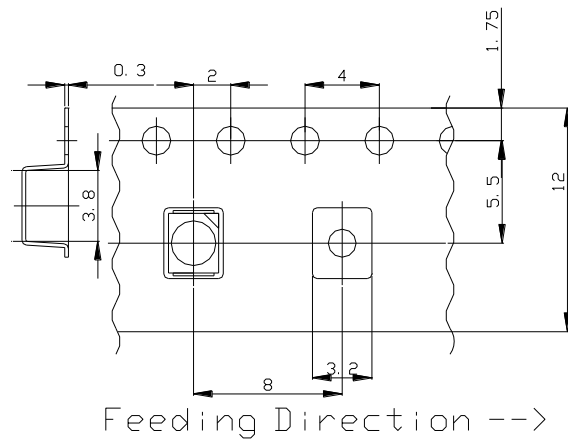
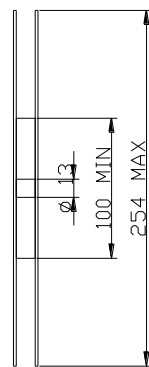
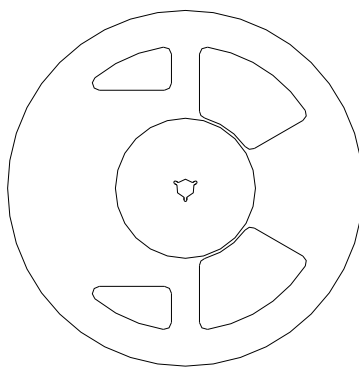
Recommended Land Layout (Unit: mm)



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.

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