





Features

• 5.6mm x 3.0mm x 0.77mm SMD LED

• IR-reflow compatible

• Standard Package: 2,000pcs / Reel

 $\bullet\,$ White SMD package with silicone resin

• MSL (Moisture Sensitivity Level): 2a

• RoHS compliant







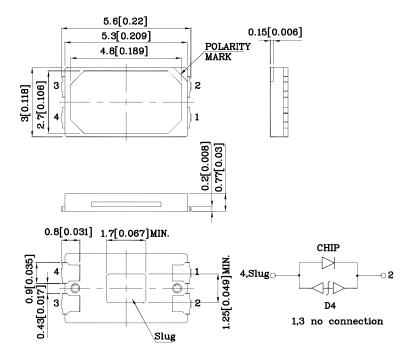
ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

5.6mm x 3.0mm SURFACE MOUNT LED LAMP

Typical Applications

- Entertainment and accent lighting
- Architectural lighting
- Ideal substitute for halogen and florescent lighting
- Automotive interior and exterior lighting
- Specialty lighting (Markers, Beacon, Pathway)

Package Schematics



Notes:

- 1. All dimensions are in millimeters (inches).
- 2. Tolerance is $\pm 0.25 (0.01")$ unless otherwise noted.
- 3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

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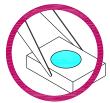
5.6mm x 3.0mm SURFACE MOUNT LED LAMP

Handling Precautions

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

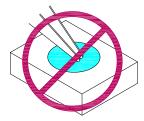
As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

1. Handle the component along the side surfaces by using forceps or appropriate tools.

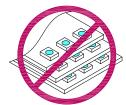


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

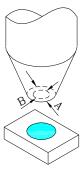




3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



- 4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
- 4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
- 4.3. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



5. As silicone encapsulation is permeable to gases, some corrosive substances such as H_2S might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

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Part Number: XZCB25X143S



5.6mm x 3.0mm SURFACE MOUNT LED LAMP

Part Number	Dice	Lens-color	Luminous Intensity CIE127-2007* (I_F =150mA) [2] cd		Luminous Flux CIE127-2007* (I _F =150mA)*[2] lm		Viewing Angle 2 θ 1/2 [1]
			Min.	Тур.	Min.	Тур.	
XZCB25X143S	Blue (InGaN)	Water Clear	1.6*	2.29*	6*	8.4*	120°

Notes:

- 1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
- 2. Luminous intensity / luminous flux: +/-15%.
- 3. LEDs are binned according to their luminous flux.

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	PD	600	mW
Junction Temperature [1]	$\mathrm{T}\mathrm{J}$	110	°C
Operating Temperature	Top	-40 To +100	°C
Storage Temperature	Tstg	-40 To +110	°C
DC Forward Current [1]	${\rm IF}$	150	mA
Reverse Voltage	V_{R}	5	V
Peak Forward Current [2]	IFM	300	mA
Thermal Resistance [1] (Junction/ambient)	Rth j-a	180	°C/W
Thermal Resistance [1] (Junction/solder point)	Rth j-S	60	°C/W
Electrostatic Discharge Threshold (HBM)		8000	V

Notes:

Electrical / Optical Characteristics at Ta=25°C

Parameter	C1 - 1	Val	TT:4	
rarameter	Symbol	Тур.	Max.	Unit
Wavelength at peak emission CIE127-2007* IF=150mA	λpeak	452*		nm
Dominant Wavelength CIE127-2007* IF=150mA	λdom [1]	460*		nm
Forward Voltage IF=150mA	VF [2]	3.5	4.0	V
Allowable Reverse Current	IR		85	mA
Temperature coefficient of λ peak IF=150mA, -10°C \leq T \leq 100°C	ТСАреак	0.12		nm/°C
Temperature coefficient of λ dom IF=150mA, -10°C \leq T \leq 100°C	TCλdom	0.1		nm/°C
Temperature coefficient of VF IF=150mA, $-10^{\circ}\text{C} \le \text{T} \le 100^{\circ}\text{C}$	TCv	-2.3		mV/°C

Notes:

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^{*} Luminous intensity / luminous flux value is in accordance with CIE127-2007 standards.

^{1.} Rth(j-a) Results from mounting on PC board FR4 (pad size $\!\!\ge\!\!16$ mm² per pad)

^{2. 1/10} Duty Cycle, 0.1ms Pulse Width.

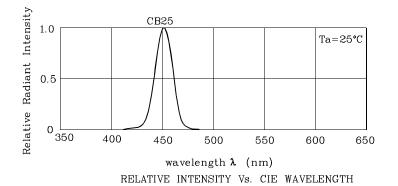
^{1.} The dominant Wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd : $\pm 1nm$.)

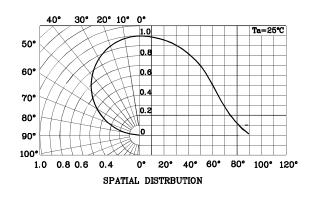
^{2.} Forward Voltage: +/-0.1V.

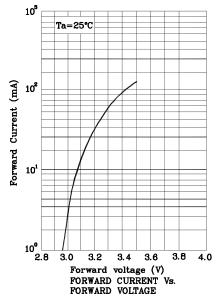
 $[\]mbox{*}$ Wavelength is in accordance with CIE127-2007 standards.

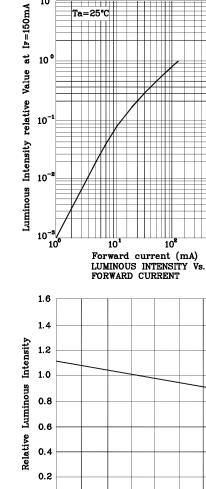












0

-20 0 20 40 60

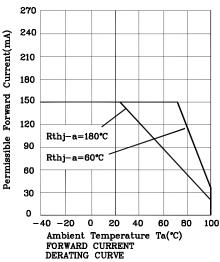
Ambient Temperature Ta(°C)

LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

10¹

10

ra=25°C



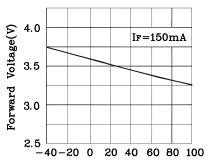
80 100

10⁸

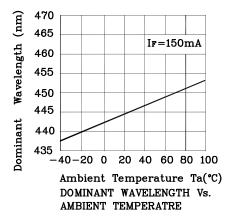
10

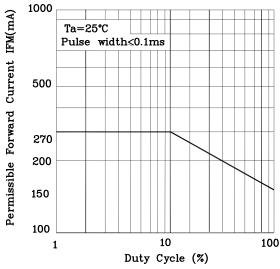






Ambient Temperature Ta(°C) FORWARD VOLTAGE Vs. AMBIENT TEMPERATRE





 $\begin{array}{ll} \textbf{Permissible Forward Current Vs.} \\ \textbf{Duty Cycle} \end{array}$

Reel Dimension

12,40.0831

30[1.181]

6[0.236]

33.5[1.319]

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16.55[0.652]±0.2

13.7[0.539]±0.2

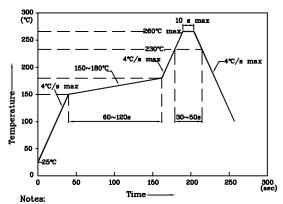
12.3231

ø178[7.008]±:

SunLED www.SunLEDusa.com

LED is recommended for reflow soldering and soldering profile is shown below.

Reflow Soldering Profile for SMD Products (Pb-Free Components)

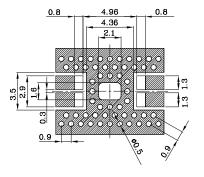


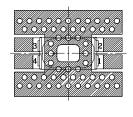
- 1. Maximum soldering temperature should not exceed 260°C
- 2. Recommended reflow temperature: 145°C-260°C
- Do not put stress to the epoxy resin during high temperatures conditions

Recommended Soldering Pattern (Units: mm; Tolerance: ±0.1)

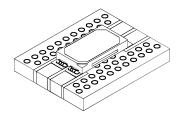
❖ The device has a single mounting surface. The device must be mounted according to the specifications.

83[3.268]



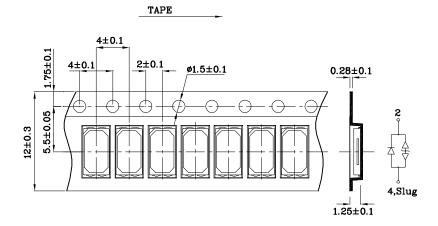


⊠ Solder resist



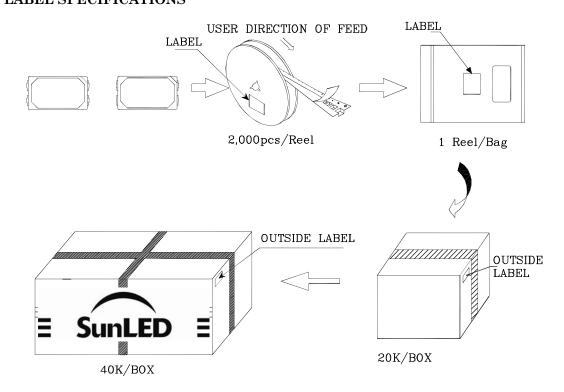
0.8mm FR4-Based Boards
For both the open via PTH and filled and capped via design,
the finished hole diameter is 0.5mm. A smaller diameter will
lead to an increase of thermal resistance. The recommended
distance between two holes is 0.4 mm.This results in a minimal
pitch of 0.9mm between the vias.

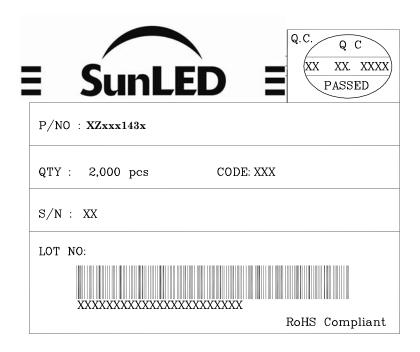
❖ Tape Specification (Units: mm)





PACKING & LABEL SPECIFICATIONS





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