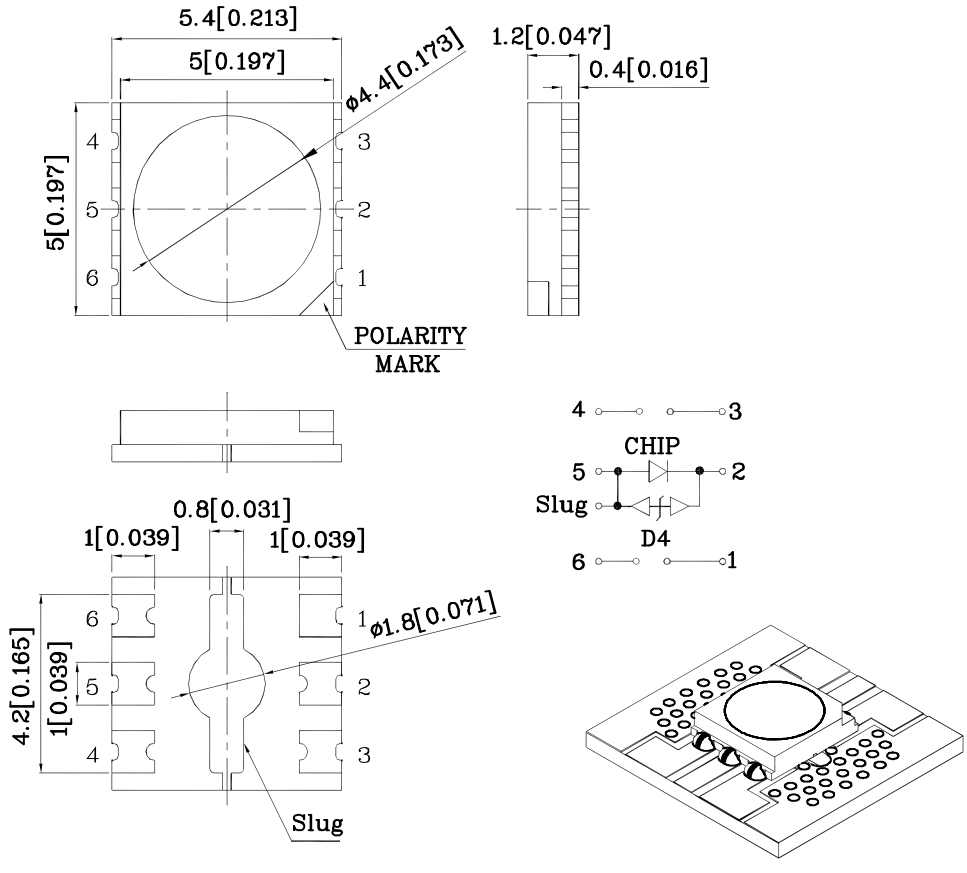
Features

- 5.0mm X 5.0mm X 1.2mm SMD LED
- Zener diode provided for ESD protection
- IR-reflow compatible
- Standard Package: 500 pcs/Reel
- MSL (Moisture Sensitivity Level): 3
- RoHS compliant.

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Package Schematics

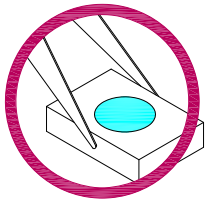


Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

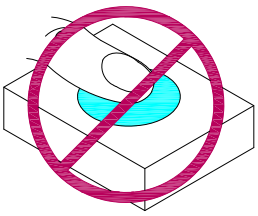
Handling Precautions

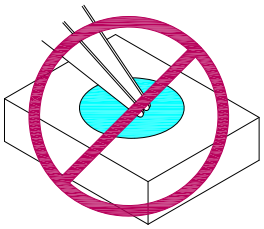
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using 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.

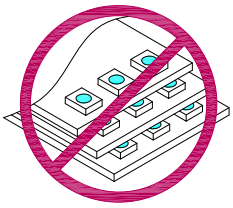


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

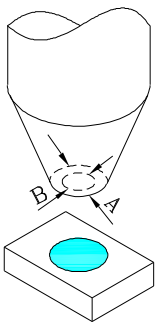




3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



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.

Selection Guide

Part Number	Dice	Lens-color	Luminous Intensity CIE127-2007* (I_F=350mA) [2] cd		Luminous Flux CIE127-2007* (I_F=350mA)*[2] lm		Viewing Angle 2 θ 1/2 [1]
			Min.	Typ.	Min.	Typ.	
XZCB14X146S	Blue (InGaN)	Water Clear	4.2*	5.49*	14*	19.7*	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%.*LEDs are binned according to their luminous flux.
* Luminous Intensity/Luminous Flux value is in accordance with CIE127-2007 standards.

Absolute Maximum Ratings at T_a=25°C

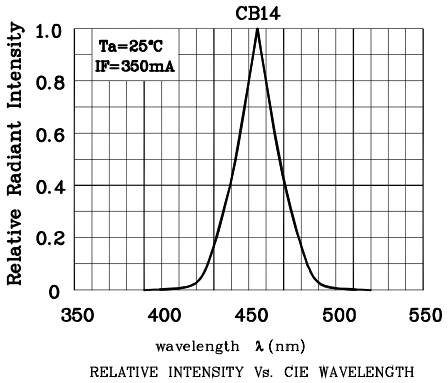
Parameter	Symbol	Value	Unit
Power Dissipation	P_D	1.33	W
DC Forward Current [1]	I_F	350	mA
Peak Forward Current [2]	I_{FP}	600	mA
Reverse Voltage	V_R	5	V
Junction temperature	T_J	110	°C
Operating Temperature	Top	-40 To +100	°C
Storage Temperature	Tstg	-40 To +110	°C
Thermal Resistance [1]	$R_{th\ j\text{-}a}$	23.8	°C/W
Electrostatic Discharge Threshold (HBM)		8000	V

Notes:
1. Results from mounting on metal core PCB, mounted on pc board-metal core PCB is recommend for lowest thermal resistance.
2. 1/10 Duty Cycle, 0.1ms Pulse Width.

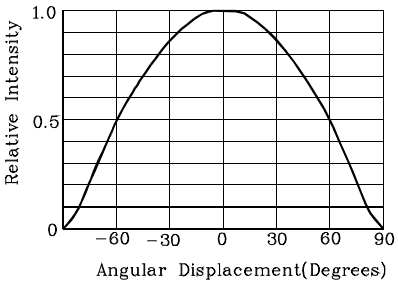
Electrical / Optical Characteristics at T_A=25°C

Parameter	Symbol	Value	Unit
Wavelength at peak emission I_F = 350mA CIE127-2007* [Typ.]	λpeak	455*	nm
Dominant Wavelength I_F = 350mA CIE127-2007* [Typ.]	λdom [1]	460*	nm
Spectral bandwidth at 50% Φ REL MAX I_F = 350mA [Typ.]	△λ	25	nm
Forward Voltage I_F=350mA [Typ.]	V_F [2]	3.3	V
Forward Voltage I_F=350mA [Max.]		3.8	
Allowable Reverse Current [Max.]	I_R	85	mA
Temperature coefficient of λpeak I_F = 350mA, - 10°C ≤ T ≤ 100°C [Typ.]	TCλpeak	0.2	nm/°C
Temperature coefficient of λdom I_F = 350mA, - 10°C ≤ T ≤ 100°C [Typ.]	TCλdom	0.1	nm/°C
Temperature coefficient of V_F I_F = 350mA, - 10°C ≤ T≤ 100°C [Typ.]	TC_V	-2.3	mV/°C

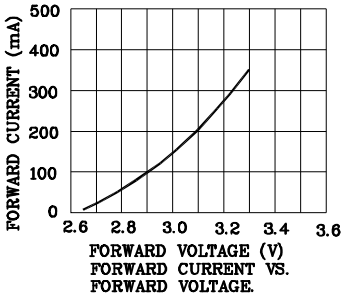
Notes:
1.Wavelength : + / -1nm.
2. Forward Voltage: +/-0.1V.
*wavelength value is in accordance with CIE127-2007 standards.



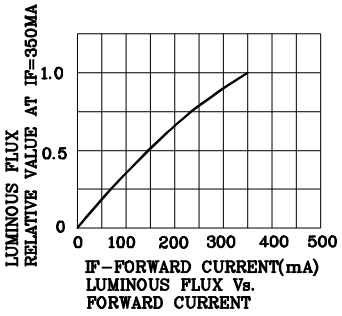
RELATIVE INTENSITY Vs. CIE WAVELENGTH



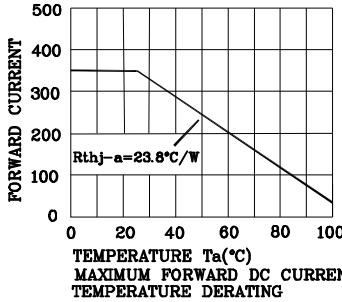
❖ CB14



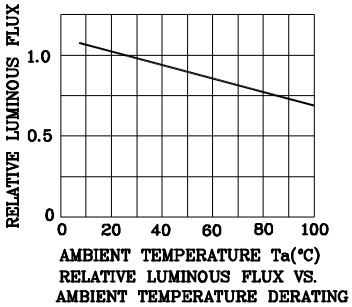
FORWARD CURRENT VS.
FORWARD VOLTAGE.



LUMINOUS FLUX Vs.
FORWARD CURRENT



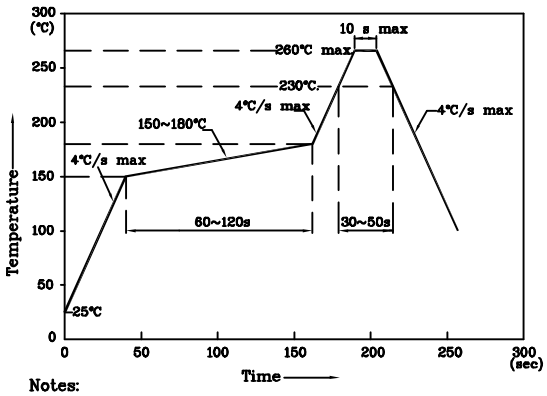
MAXIMUM FORWARD DC CURRENT VS.
TEMPERATURE DERATING



RELATIVE LUMINOUS FLUX VS.
AMBIENT TEMPERATURE DERATING

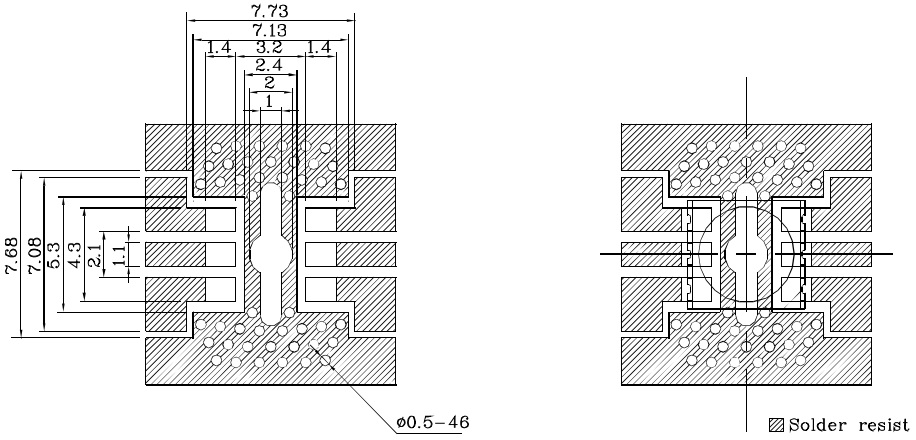
LED is recommended for reflow soldering and soldering profile is shown below.

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

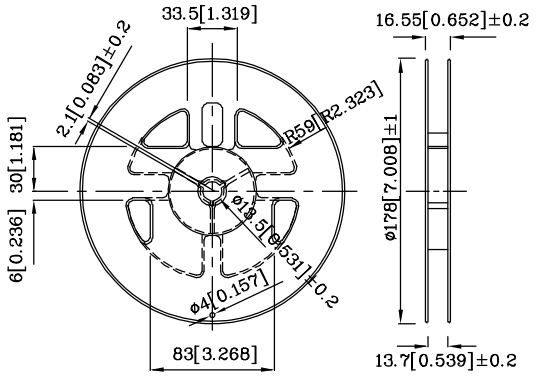


Notes:
1. Maximum soldering temperature should not exceed 260°C
2. Recommended reflow temperature: 145°C−260°C
3. Do not put stress to the epoxy resin during high temperatures conditions

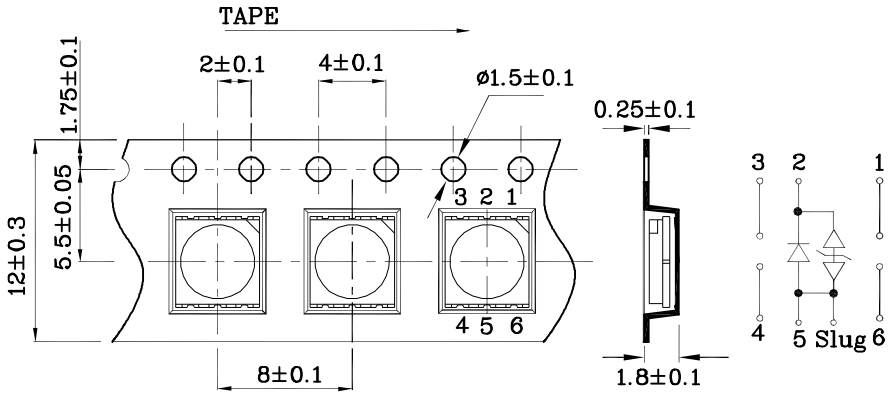
❖ Recommended Soldering Pattern
(Units : mm; Tolerance: ± 0.1)



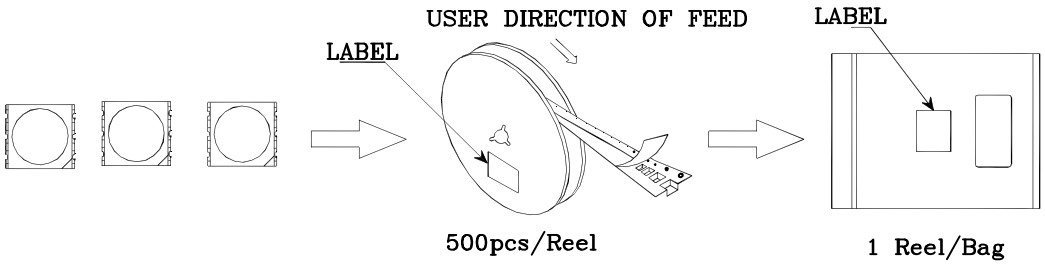
❖ Reel Dimension

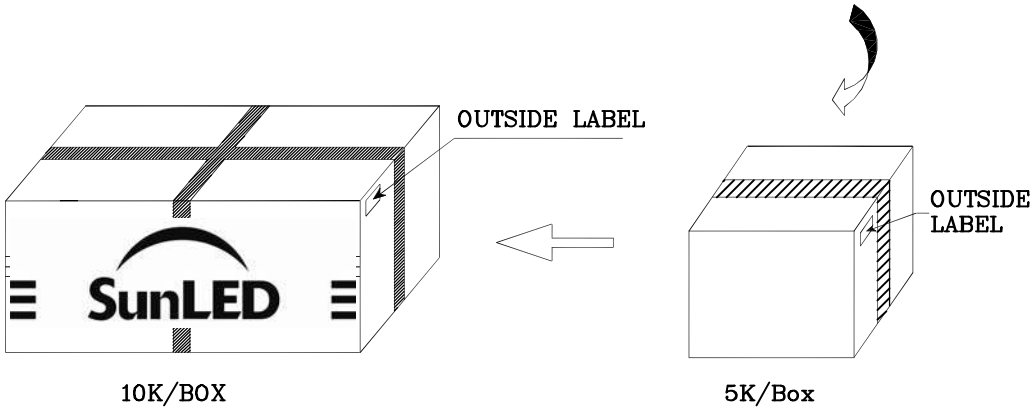


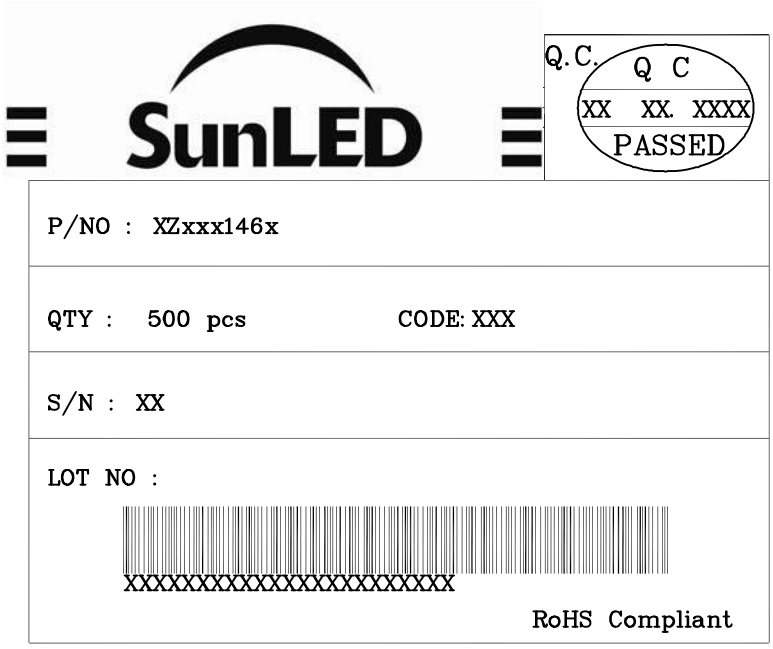
❖ Tape Specification (Units : mm)



PACKING & LABEL SPECIFICATIONS







TERMS OF USE

1. Data presented in this document reflect statistical figures and should be treated as technical reference only.
2. Contents within this document are subject to improvement and enhancement changes without notice.
3. The product(s) in this document are designed to be operated within the electrical and environmental specifications indicated on the datasheet. User accepts full risk and responsibility when operating the product(s) beyond their intended specifications.
4. The product(s) described in this document are intended for electronic applications in which a person's life is not reliant upon the LED. Please consult with a SunLED representative for special applications where the LED may have a direct impact on a person's life.
5. The contents within this document may not be altered without prior consent by SunLED.
6. Additional technical notes are available at http://www.SunLEDusa.com/TechnicalNotes.asp