

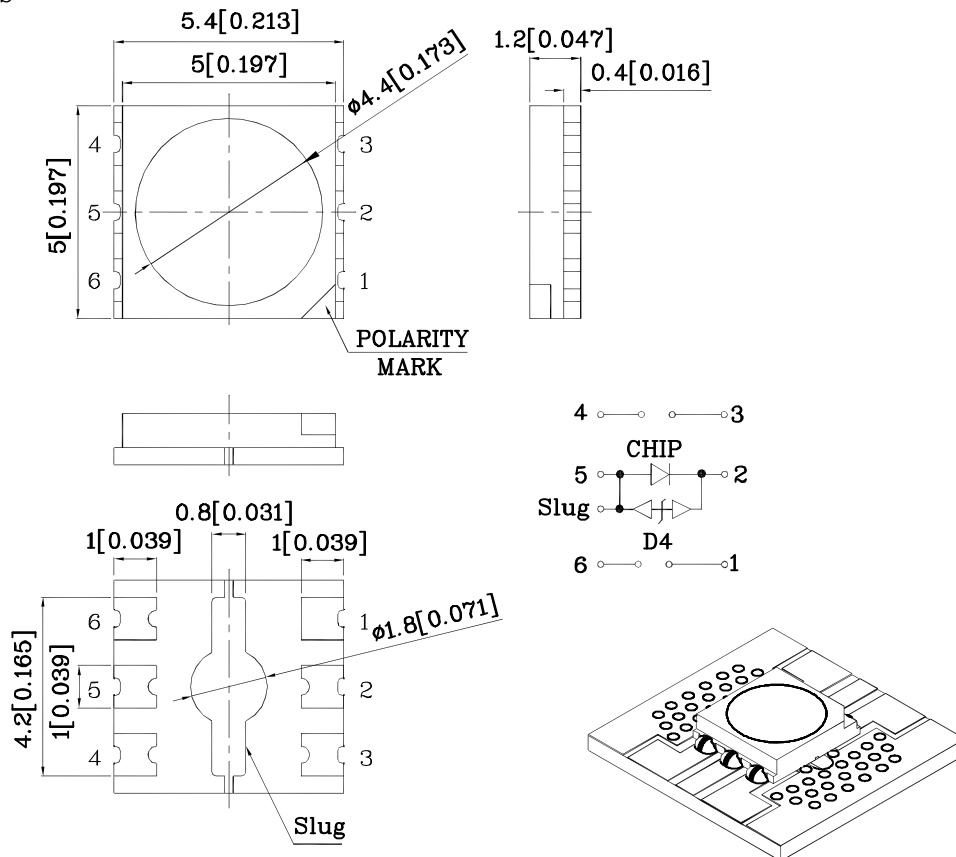
Features

- 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:

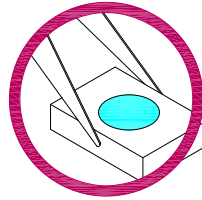
1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25 (0.01)$ unless otherwise noted.
3. Specifications are subject to change without notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

Handling Precautions

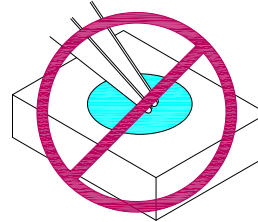
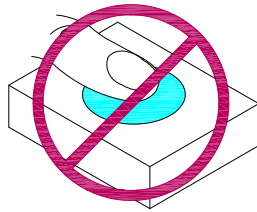
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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.

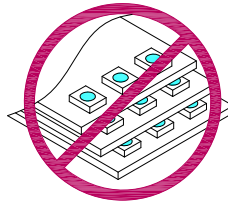
1. Handle the component along the side surfaces by using forceps or appropriate tools.



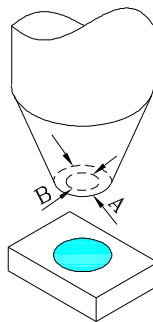
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



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 ($I_F=350\text{mA}$) [2] cd		Luminous Flux ($I_F=350\text{mA}$)*[2] lm		Viewing Angle 2θ 1/2 [1]
			Min.	Typ.	Min.	Typ.	
XZCB14X146S	Blue (InGaN)	Water Clear	4.2	5.5	14	20	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.

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

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	$^\circ\text{C}$
Operating Temperature	T_{op}	-40 To +100	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 To +110	$^\circ\text{C}$
Thermal Resistance [1]	$R_{th\ j-a}$	23.8	$^\circ\text{C/W}$
Electrostatic Discharge Threshold (HBM)		8000	V

Notes:

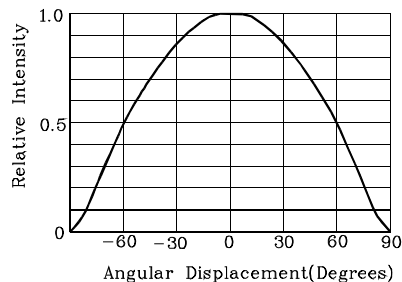
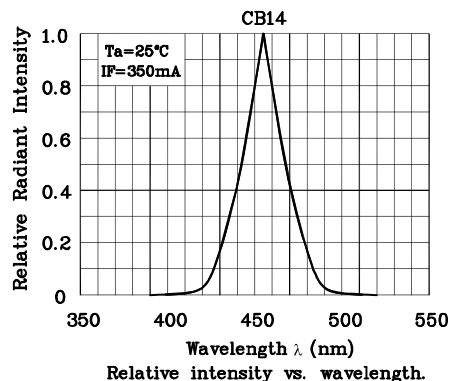
1. Results from mounting on metal core PCB, mounted on pc board-metal core PCB is recommend for lowest thermal resistance.
2. 1/10 Duty Cycle, 0.1ms Pulse Width.

Electrical / Optical Characteristics at $T_A=25^\circ\text{C}$

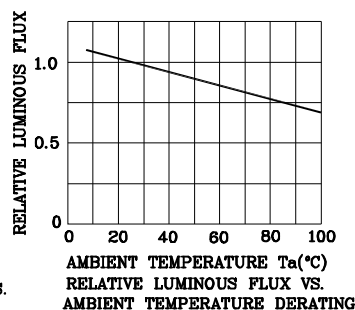
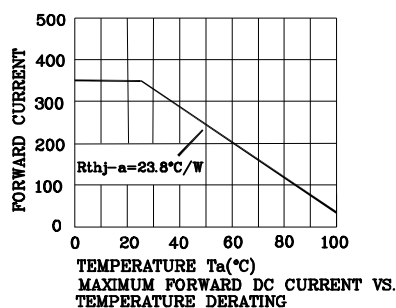
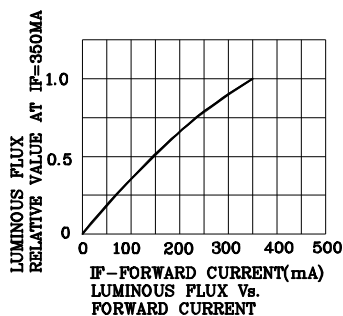
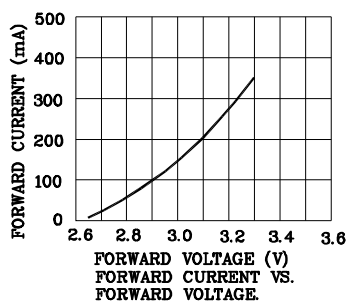
Parameter	Symbol	Value	Unit
Wavelength at peak emission $I_F = 350\text{mA}$ [Typ.]	λ_{peak}	455	nm
Dominant Wavelength $I_F = 350\text{mA}$ [Typ.]	λ_{dom} [1]	460	nm
Spectral bandwidth at 50% $\Phi_{REL\ MAX}$ $I_F = 350\text{mA}$ [Typ.]	$\Delta\lambda$	25	nm
Forward Voltage $I_F=350\text{mA}$ [Typ.]	V_F [2]	3.3	V
Forward Voltage $I_F=350\text{mA}$ [Max.]		3.8	
Allowable Reverse Current [Max.]	I_R	85	mA
Temperature coefficient of λ_{peak} $I_F = 350\text{mA}$, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	$TC\lambda_{peak}$	0.2	nm/ $^\circ\text{C}$
Temperature coefficient of λ_{dom} $I_F = 350\text{mA}$, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	$TC\lambda_{dom}$	0.1	nm/ $^\circ\text{C}$
Temperature coefficient of V_F $I_F = 350\text{mA}$, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	TC_V	-2.3	mV/ $^\circ\text{C}$

Notes:

1. Wavelength : + / -1nm.
2. Forward Voltage: +/-0.1V.

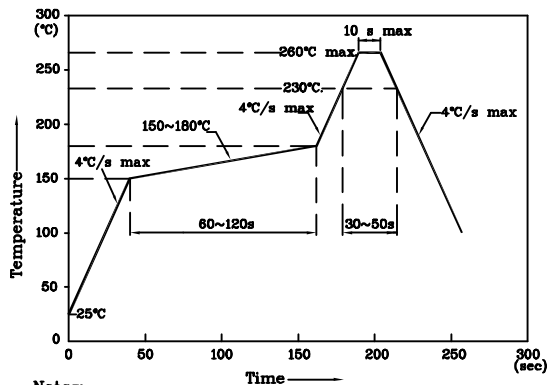


❖ CB14



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

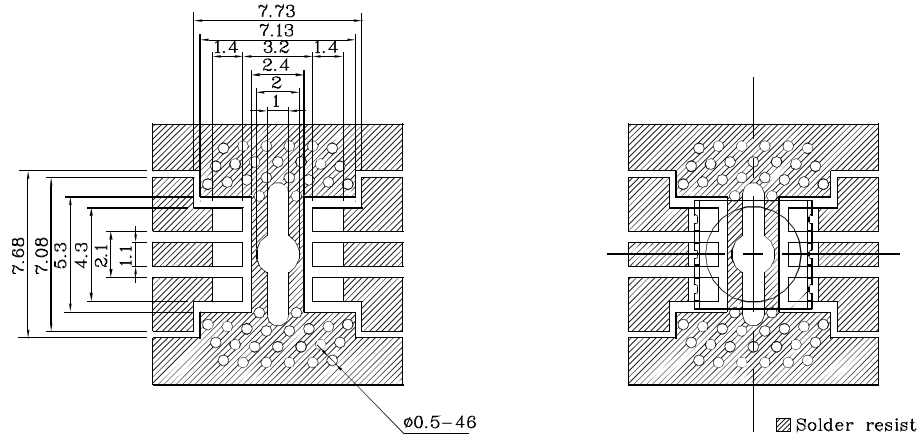
Reflow Soldering Profile for SMD Products (Pb-Free Components)



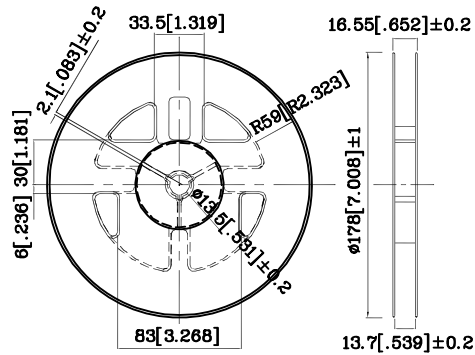
Notes:

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

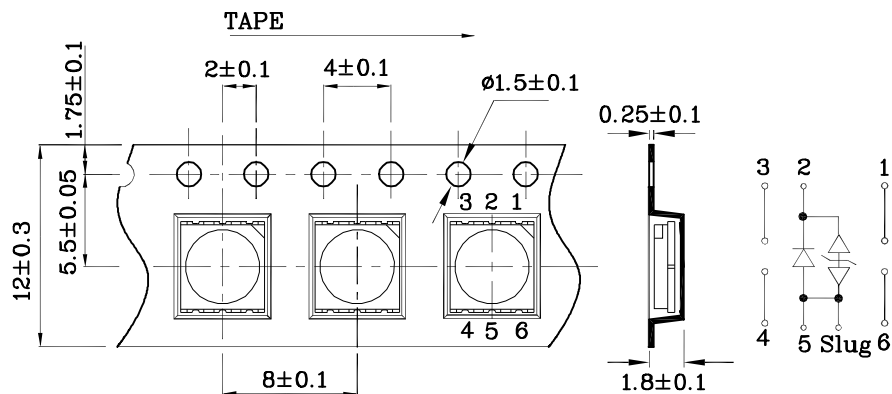
❖ Recommended Soldering Pattern
(Units : mm; Tolerance: ± 0.1)



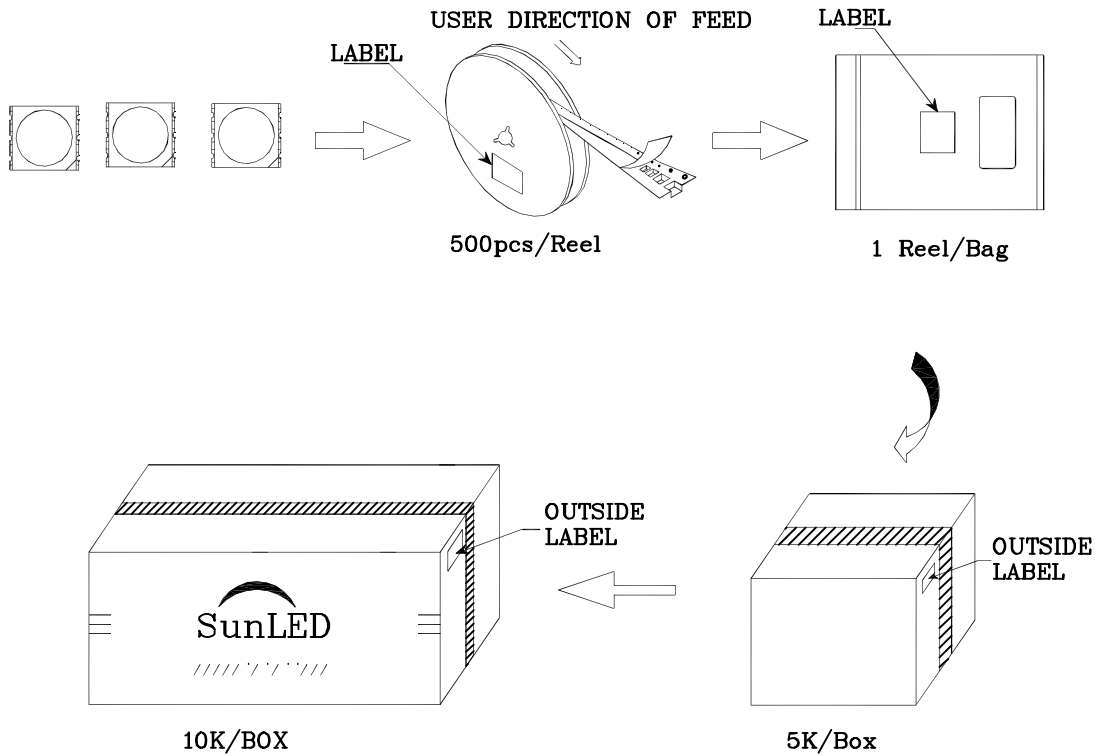

❖ Reel Dimension

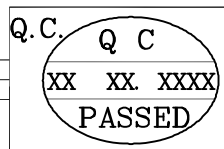



❖ Tape Specification (Units : mm)



PACKING & LABEL SPECIFICATIONS

	
P/NO : XZxxx146x	
QTY : 500 pcs	CODE: XXX
S/N : XX	
LOT NO :	
	
XXXXXXXXXXXXXXXXXXXX	
RoHS Compliant	