Part Number: XZCB25X109FS

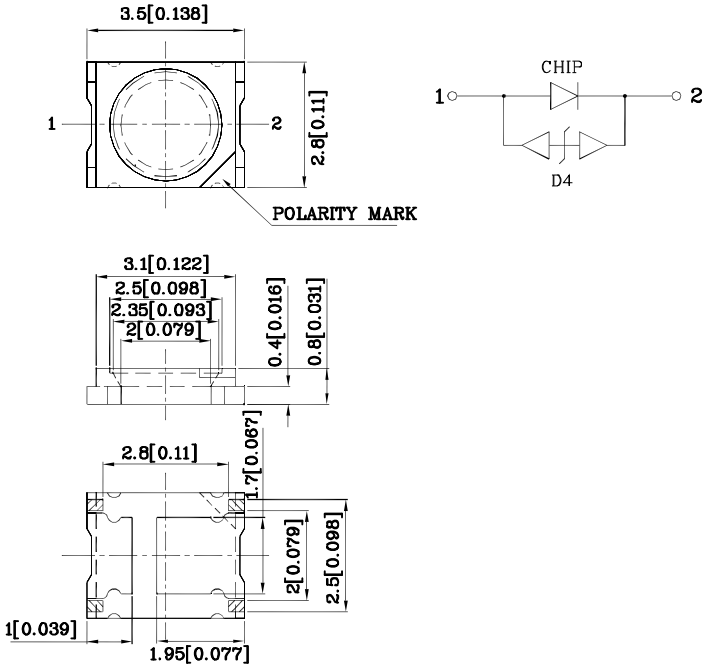
3.5x2.8 mm SMD CHIP LED LAMP

Features

- 3.5mm X 2.8mm X 0.8mm SMD LED
- Ideal for indication for hand held products
- IR-reflow compatible
- Ideal 0.5-Watt power for backlighting and accent lighting
- Special colors available
- Standard Package: 2000pcs / Reel
- MSL (Moisture Sensitivity Level): 2a
- RoHS compliant

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Package Schematics

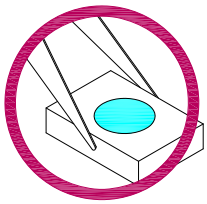


Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

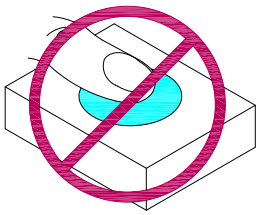
Handling Precautions

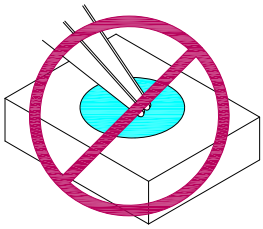
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using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

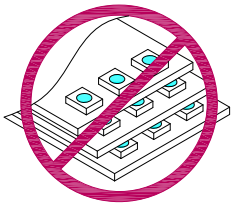


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

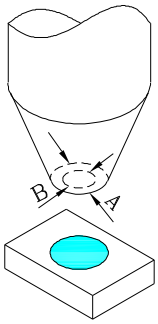




3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



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.

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I_F=150mA) mcd		Luminous Flux CIE127-2007* (I_F=150mA) mlm		Wavelength CIE127-2007* λP nm	Viewing Angle 2 θ 1/2 [2]
				min.	typ.	min.	typ.		
XZCB25X109FS	Blue	InGaN	Water Clear	1000*	1295*	3500*	4300*	445*	120°

Notes:
LEDs are binned according to their luminous flux.
*Luminous intensity/luminous flux value and wavelength are in accordance with CIE127-2007 standards.

Absolute Maximum Ratings at TA=25°C

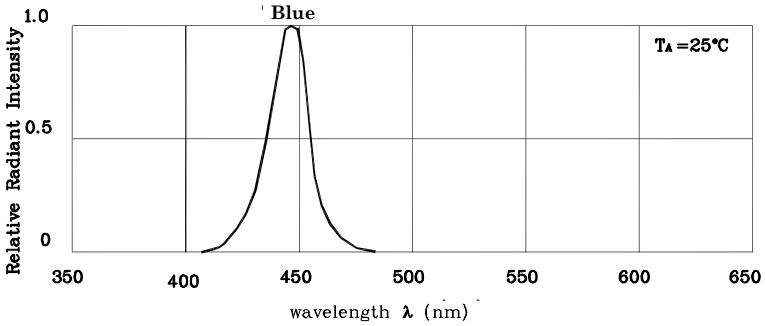
Parameter	Symbol	Value	Unit
Power Dissipation	P_D	600	mW
Junction Temperature [1]	T_J	110	°C
Operating Temperature	Top	-40 To +85	°C
Storage Temperature	Tstg	-40 To +85	°C
Reverse Voltage	V_R	5	V
DC Forward Current [1]	I_F	150	mA
Peak Forward Current [3]	I_{FM}	300	mA
Thermal Resistance [1] (Junction/ambient)	$R_{th\ j\text{-}a}$	180	°C/W
Thermal Resistance [1] (Junction/solder point)	$R_{th\ j\text{-}s}$	60	°C/W
Electrostatic Discharge Threshold (HBM)		8000	V

Notes:
1.Results from mounting on PC board FR4(pad size≥70mm²), mounted on pc board-metal core PCB is recommend for lowest thermal Resistance.
2.θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical peak value.
3.1/10 Duty Cycle, 0.1ms Pulse Width.
4.A Relative Humidity between 40% and 60% is recommended in ESD-protected work areas to reduce static build up during assembly process (Reference JEDEC/JESD625-A and JEDEC/J-STD-033)

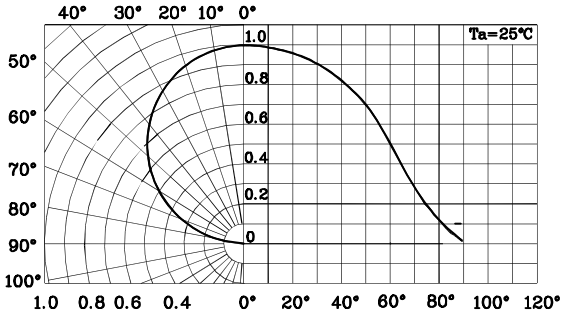
Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Value	Unit
Wavelength at peak emission I_F=150mA CIE127-2007* [Typ.]	λpeak	445*	nm
Dominant Wavelength I_F=150mA CIE127-2007* [Typ.]	λdom [1]	450*	nm
Spectral Line Half-width I_F=150mA [Typ.]	Δλ	20	nm
Forward Voltage I_F=150mA [Min.]	V_F [2]	2.7	V
Forward Voltage I_F=150mA [Typ.]		3.5	
Forward Voltage I_F=150mA [Max.]		4.0	
Allowable Reverse Current [Max.]	I_R	85	mA
Temperature coefficient of λpeak I_F=150mA, -10°C≤ T≤100°C [Typ.]	TCλpeak	0.13	nm/°C
Temperature coefficient of λdom I_F=150mA, -10°C≤ T≤100°C [Typ.]	TCλdom	0.1	nm/°C
Temperature coefficient of V_F I_F=150mA, -10°C≤ T≤100°C [Typ.]	TC_V	-3.1	mV/°C

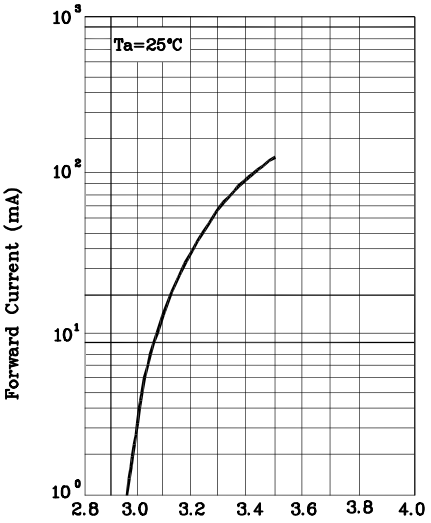
*wavelength value is in accordance with CIE127-2007 standards.



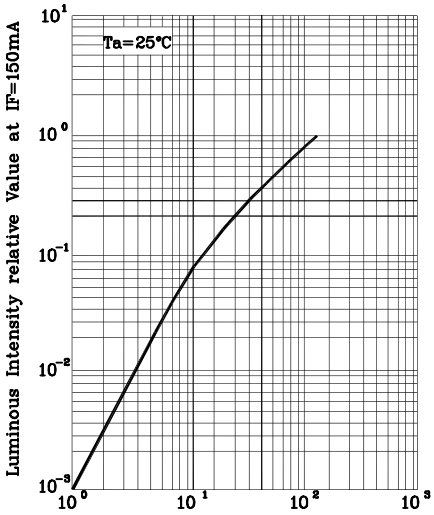
RELATIVE INTENSITY Vs. CIE WAVELENGTH



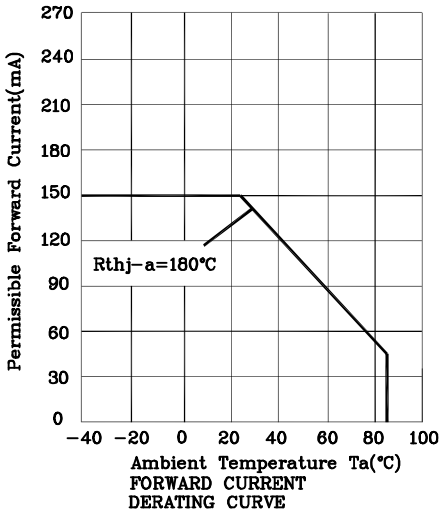
SPATIAL DISTRIBUTION



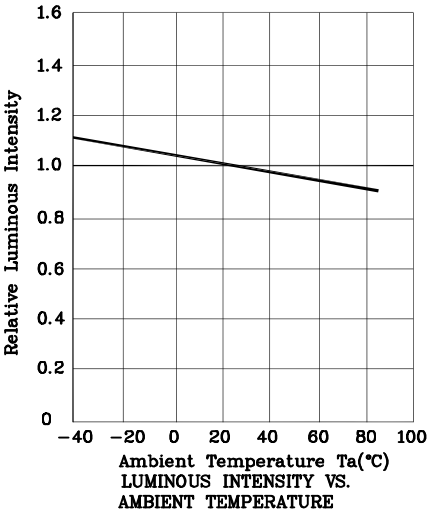
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



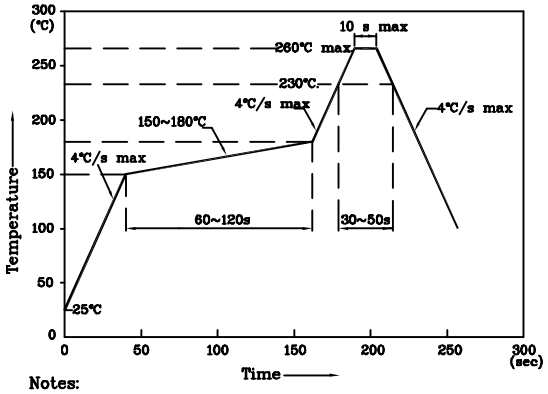
FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY VS.
AMBIENT TEMPERATURE

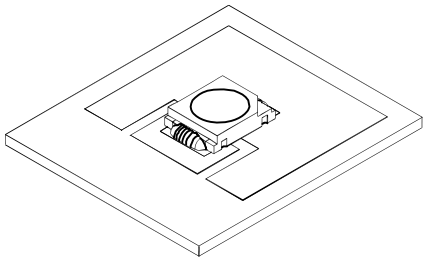
LED is recommended for reflow soldering and soldering profile is shown below.

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

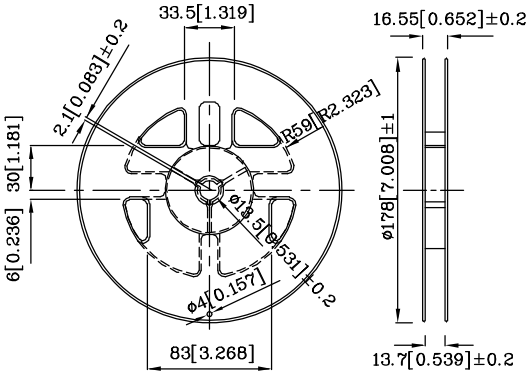


Notes:
1. Maximum soldering temperature should not exceed 260℃
2. Recommended reflow temperature: 145℃−260℃
3. Do not put stress to the epoxy resin during high temperatures conditions

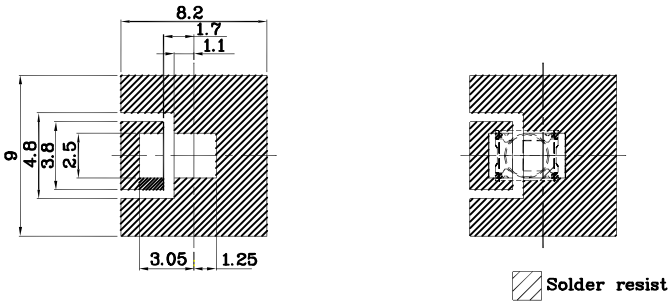
❖ **The device has a single mounting surface. The device must be mounted according to the specifications.**



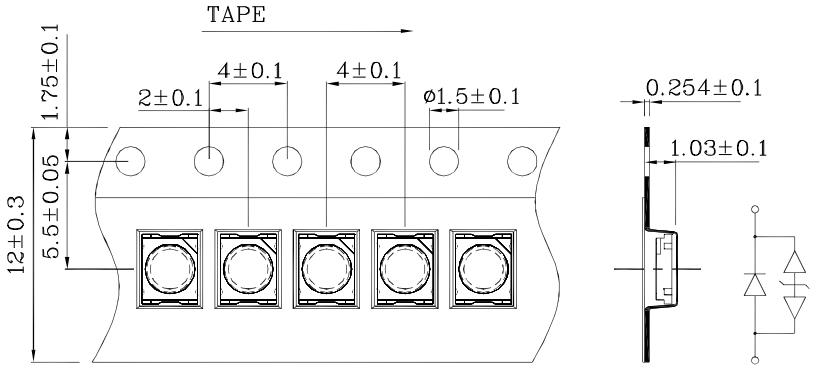
❖ **Reel Dimension**



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



❖ **Tape Specification (Units : mm)**



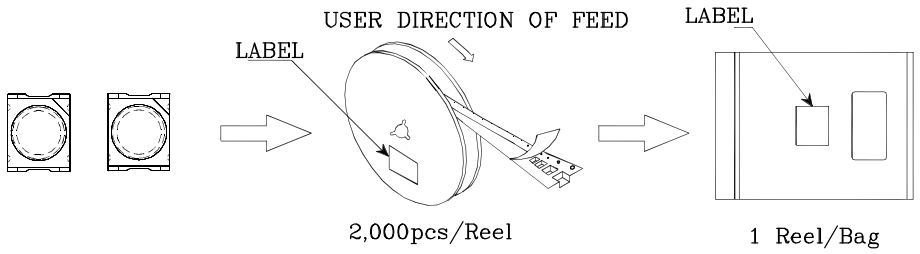
Remarks:

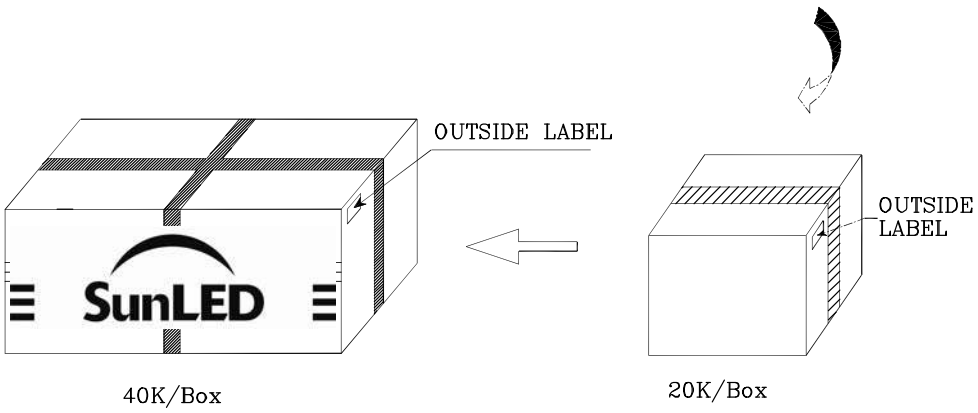
If special sorting is required (e.g. binning based on forward voltage, Luminous intensity / luminous flux, or wavelength), the typical accuracy of the sorting process is as follows:

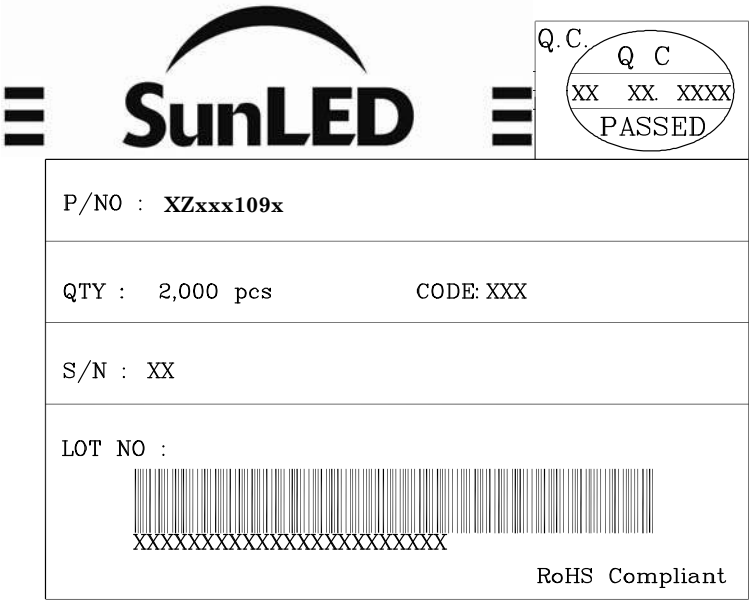
1. Wavelength: +/-1nm
2. Luminous intensity / luminous flux: +/-15%
3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters.

PACKING & LABEL SPECIFICATIONS







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