

Features

- Ideal for indication light on hand held products
- Long life and robust package
- Variety of lens types and color choices available
- ESD protection
- Package: 2000pcs / reel
- Moisture sensitivity level : level 2a
- RoHS compliant



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Application Note

Static electricity and surge damage the LEDs.

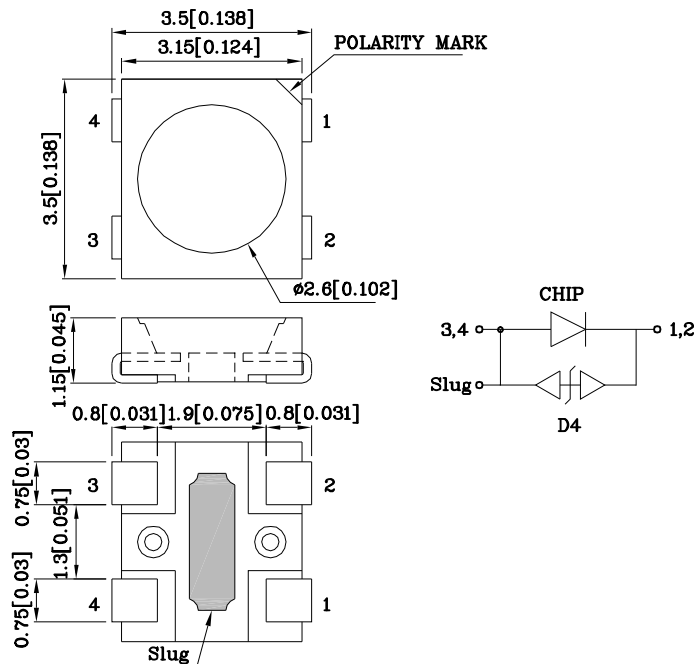
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

Applications

- Signal and symbol luminaire for orientation.
- Marker lights (e.g. steps, exit ways, etc).
- Decorative and entertainment lighting.
- Commercial and residential lighting.
- Automotive interior lighting.

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.

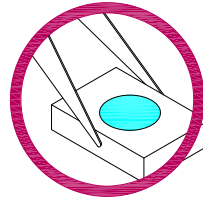


Handling Precautions

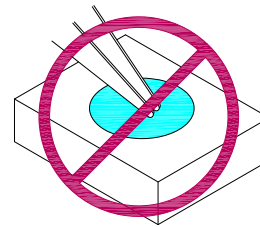
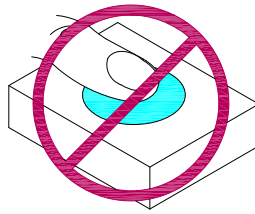
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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.

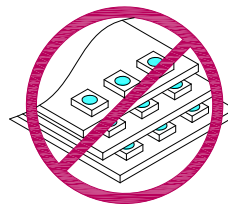
1. Handle the component along the side surfaces by using forceps or appropriate tools.



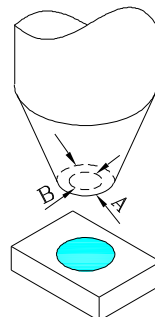
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



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 H₂S 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* (IF=150mA) mcd		Luminous Flux CIE127-2007* (IF=150mA) lm		Viewing Angle 2 θ 1/2 [1]
				min.	typ.	min.	typ.	
XZMOLA92S-4	Red	AlGaInP	Water Clear	2300*	3090*	10*	12.7*	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%.
 3. LEDs are binned according to their luminous flux.
- * Luminous intensity / luminous flux value is in accordance with CIE127-2007 standards.

Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	450	mW
Junction Temperature [1]	T _J	110	°C
Operating Temperature	T _{op}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +85	°C
DC Forward Current[1]	I _F	150	mA
Peak Forward Current [3]	I _{FM}	270	mA
Reverse Voltage	V _R	5	V
Thermal Resistance [1] (Junction/ambient)	R _{th j-a}	180	°C/W
Thermal Resistance [1] (Junction/solder point)	R _{th j-S}	50	°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. 1/10 Duty Cycle, 0.1ms Pulse Width.

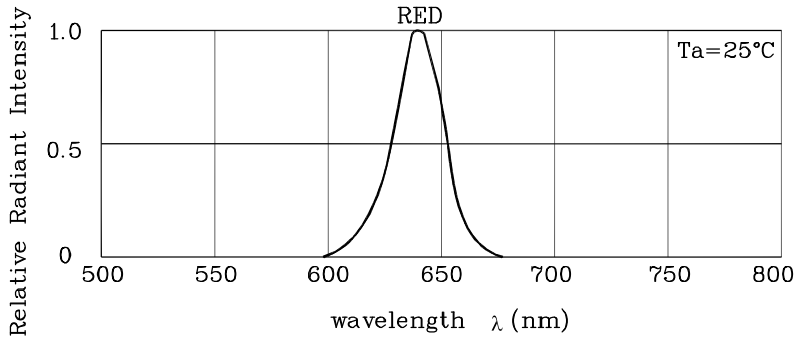
Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Value	Unit
Wavelength at peak emission CIE127-2007* IF=150mA [Typ.]	λ _{peak}	640*	nm
Dominant Wavelength CIE127-2007* IF=150mA [Typ.]	λ _{dom} [1]	625*	nm
Spectral Line Half-width IF=150mA [Typ.]	Δλ	25	nm
Forward Voltage IF=150mA [Min.]	V _F [2]	2.0	V
Forward Voltage IF=150mA [Typ.]		2.5	
Forward Voltage IF=150mA [Max.]		3.0	
Allowable Reverse Current [Max.]	I _R	85	mA
Temperature coefficient of λ _{peak} IF=150mA, -10°C ≤ T ≤ 100°C [Typ.]	TC _{λpeak}	0.11	nm/°C
Temperature coefficient of λ _{dom} IF=150mA, -10°C ≤ T ≤ 100°C [Typ.]	TC _{λdom}	0.09	nm/°C
Temperature coefficient of V _F IF=150mA, -10°C ≤ T ≤ 100°C [Typ.]	TC _V	-2.5	mV/°C

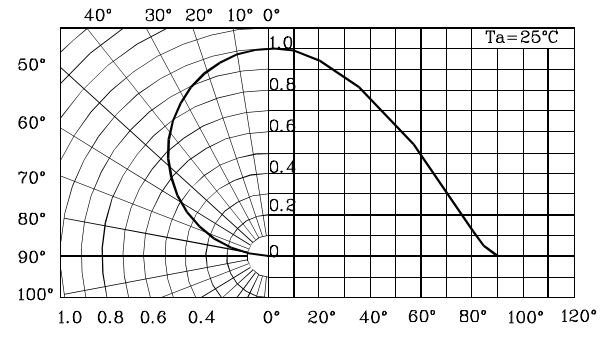
Notes:

1. The dominant Wavelength (λ_d) above is the setup value of the sorting machine. (Tolerance λ_d : ±1nm.)
 2. Forward Voltage: +/-0.1V.
- * Wavelength is in accordance with CIE127-2007 standards.

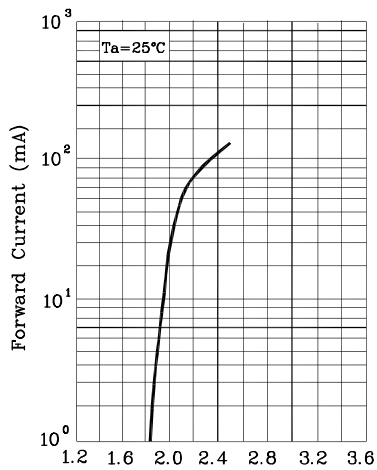
XZMOLA92S-4



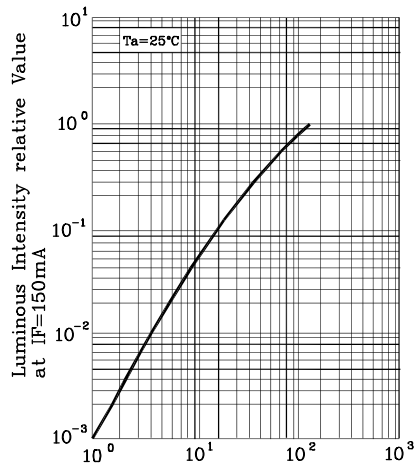
RELATIVE INTENSITY Vs. CIE WAVELENGTH



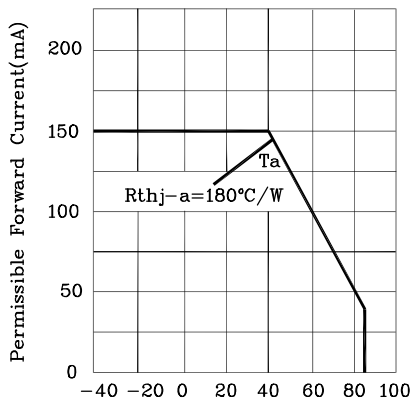
SPATIAL DISTRIBUTION



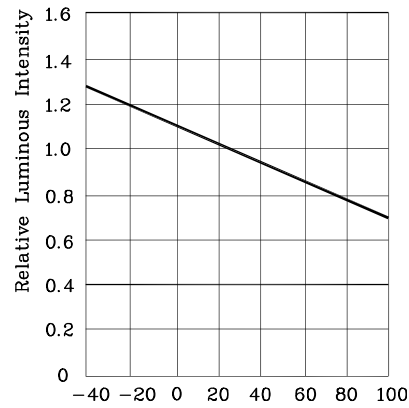
FORWARD CURRENT Vs. FORWARD VOLTAGE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE

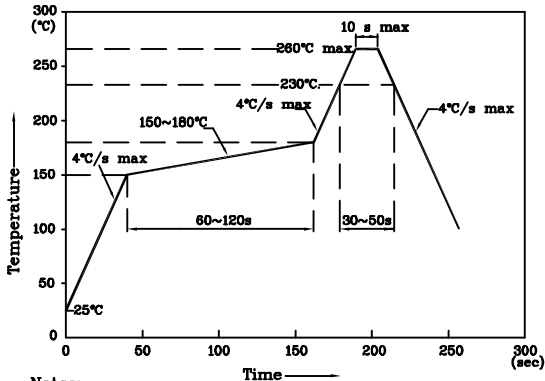


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

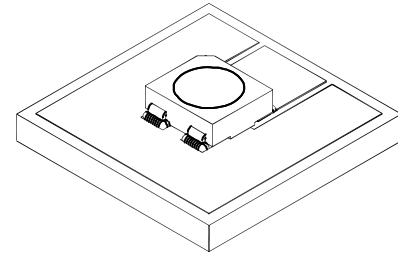
LED is recommended for reflow soldering and soldering profile is shown below.

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

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

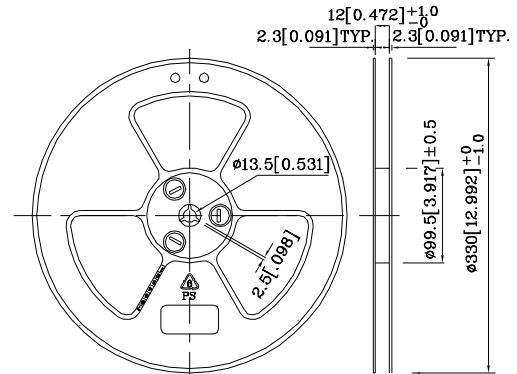
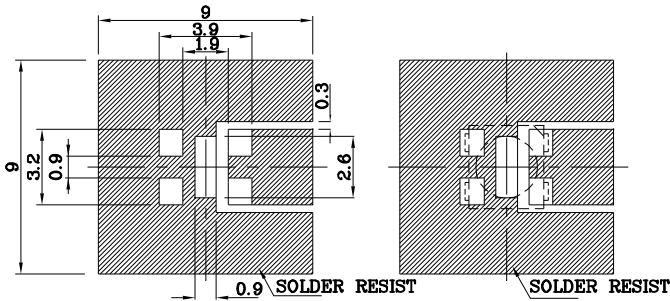


- Notes:
1. Maximum soldering temperature should not exceed 260°C
 2. Recommended reflow temperature: 145°C-260°C
 3. Do not put stress to the epoxy resin during high temperatures conditions

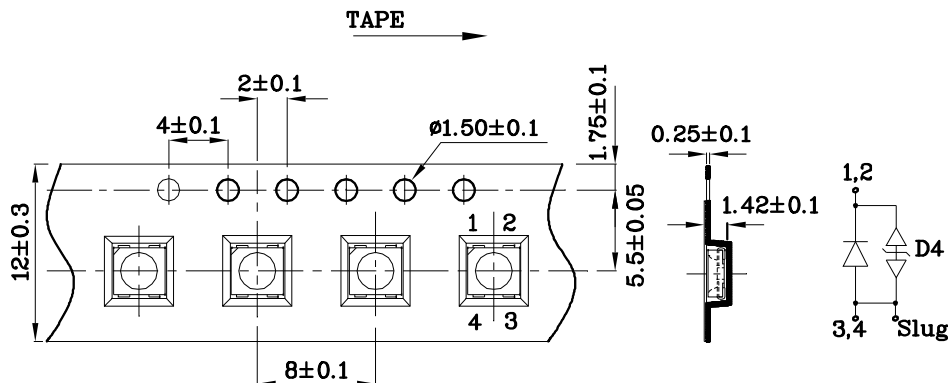


❖ Reel Dimension

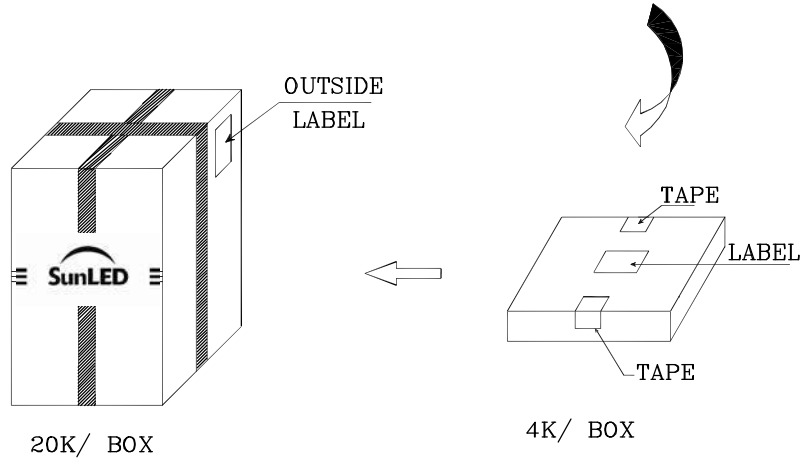
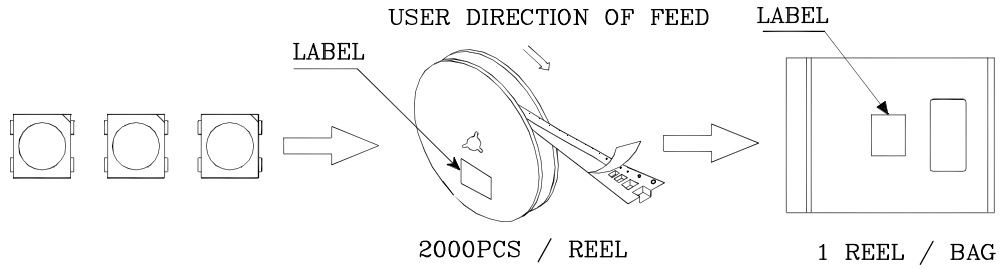
❖ Recommended Soldering Pattern


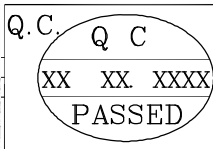



❖ Tape Specification (Units : mm)



PACKING & LABEL SPECIFICATIONS



		
P/NO : XZxxx92x		
QTY : 2000 pcs		CODE: XXX
S/N : XX		
LOT NO :		
 XXXXXXXXXXXXXXXXXXXXXXXXXXXX		
RoHS Compliant		

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>