SunLED
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Part Number: XZDGMECBD45S-B

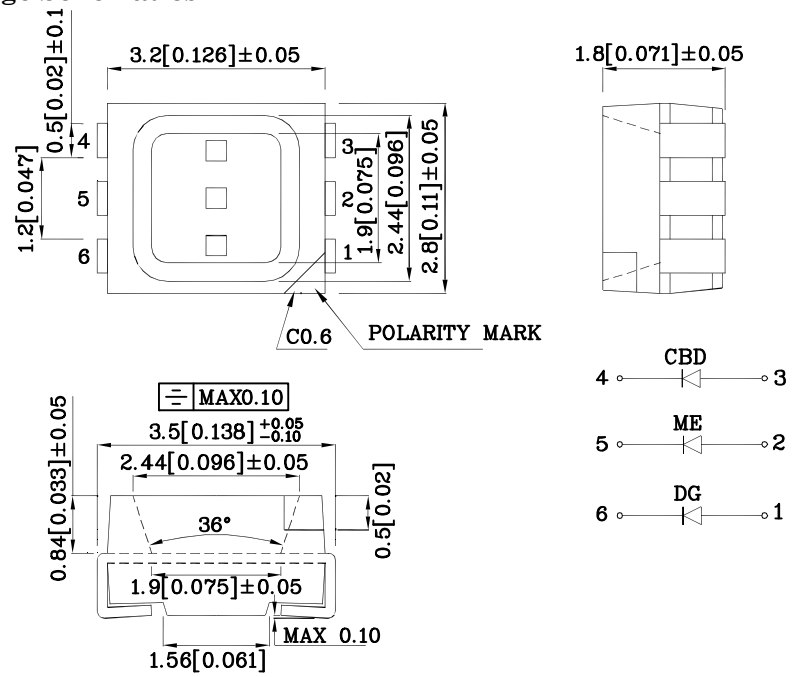
3.5X2.8mm SURFACE MOUNT SMD CHIP LED

Features

- Ideal for indication light on hand held products
- Long life and robust package
- Standard Package: 2,000pcs/ 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 ±0.2(0.008") unless otherwise noted.
3. Specifications are subject to change without notice.

Absolute Maximum Ratings (T_A=25°C)		**DG (InGaN)**	**ME (AlGaInP)**	**CBD (InGaN)**	**Unit**
Reverse Voltage	V_R	5	5	5	V
Forward Current	I_F	30	50	30	mA
Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width	i_{FS}	150	195	150	mA
Power Dissipation	P_D	123	125	120	mW
Electrostatic Discharge Threshold (HBM)		450	-	250	V
Operating Temperature	T_A	-40 ~ +85			°C
Storage Temperature	Tstg				

Operating Characteristics (T_A=25°C)		**DG (InGaN)**	**ME (AlGaInP)**	**CBD (InGaN)**	**Unit**
Forward Voltage (Typ.) (I_F=20mA)	V_F	3.3	2	3.3	V
Forward Voltage (Max.) (I_F=20mA)	V_F	4.1	2.5	4	V
Reverse Current (Max.) (V_R=5V)	I_R	50	10	50	uA
Wavelength of Peak Emission CIE127-2007*(Typ.) (I_F=20mA)	λP	515*	632*	460*	nm
Wavelength of Dominant Emission CIE127-2007*(Typ.) (I_F=20mA)	λD	525*	624*	465*	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I_F=20mA)	△λ	30	20	25	nm
Capacitance (Typ.) (V_F=0V, f=1MHz)	C	45	25	100	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I_F=20mA) mcd		Wavelength CIE127-2007* λP nm	Viewing Angle 2θ 1/2
				min.	typ.		
XZDGMECBD45S-B	Green	InGaN	Water Clear	400*	577*	515*	130°
	Red	AlGaInP		80*	178*	632*	
	Blue	InGaN		80*	128*	460*	

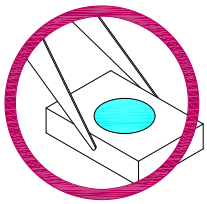
*Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.

Mar 06,2014 XDSB7053 V3-Z Layout: Maggie L.

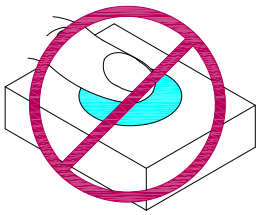
Handling Precautions

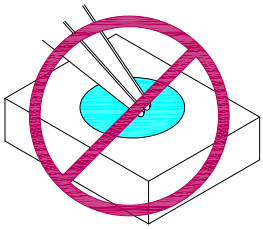
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using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

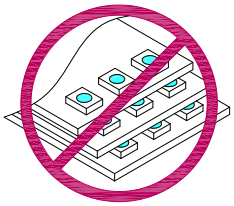


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

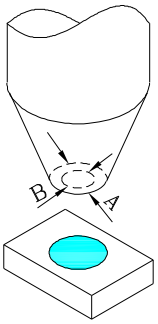




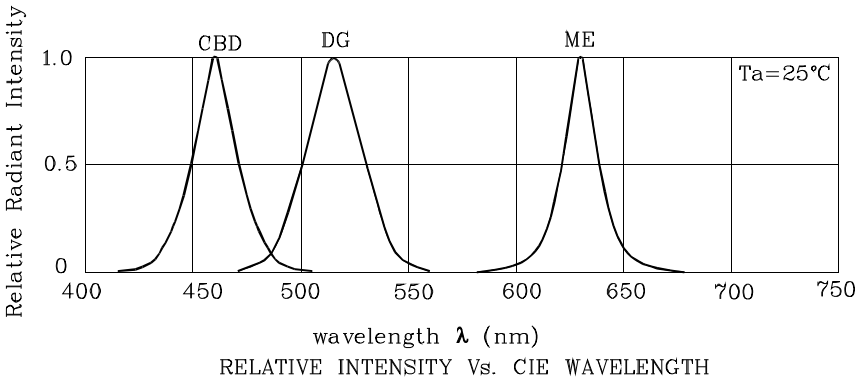
3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



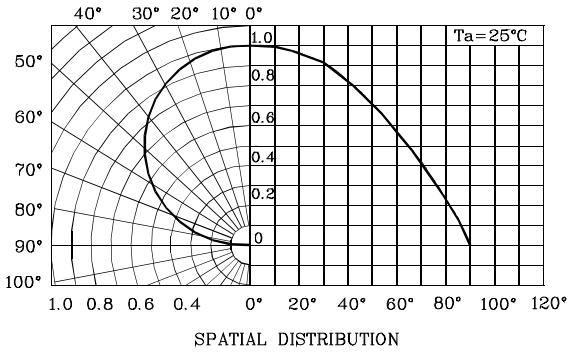
4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
4.3. The dimensions of the component must be accurately programmed in the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

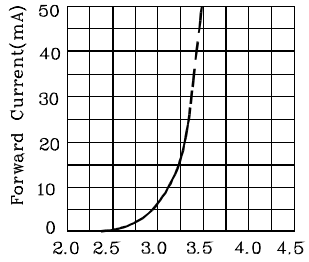


RELATIVE INTENSITY Vs. CIE WAVELENGTH

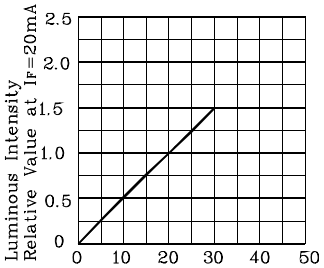


SPATIAL DISTRIBUTION

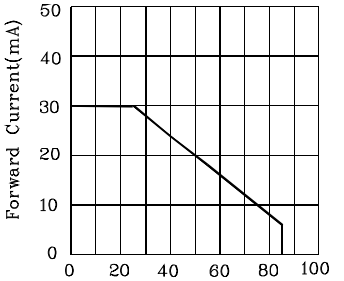
❖ DG



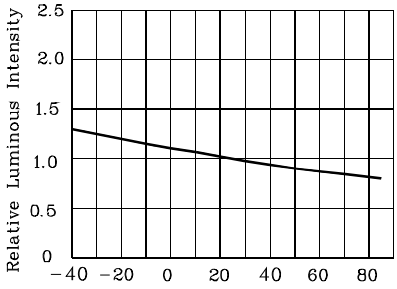
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

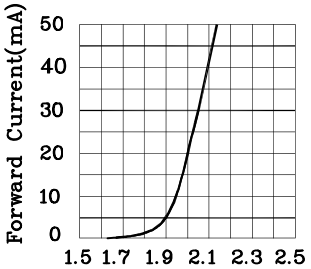


FORWARD CURRENT
DERATING CURVE

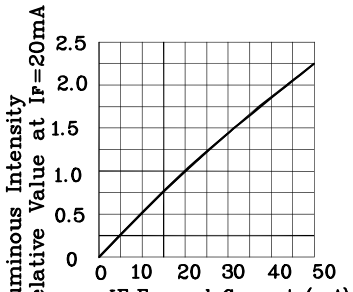


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

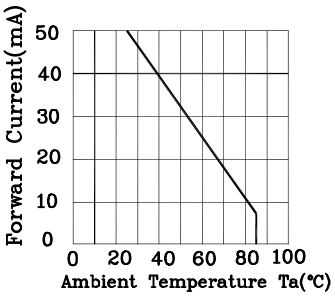
❖ ME



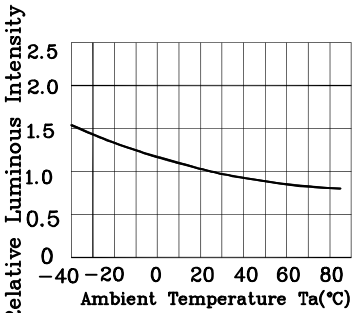
FORWARD CURRENT Vs
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

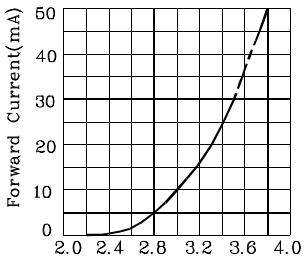


FORWARD CURRENT
DERATING CURVE

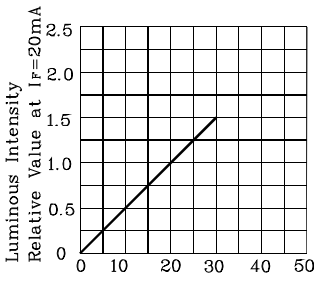


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

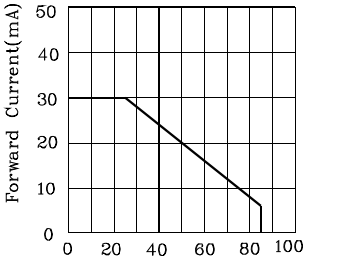
❖ CBD



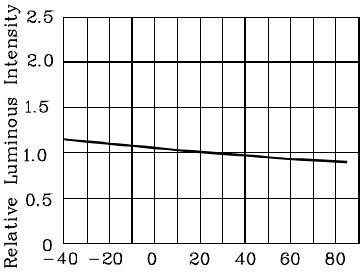
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



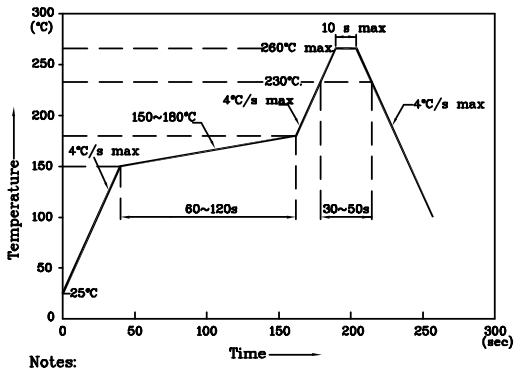
FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

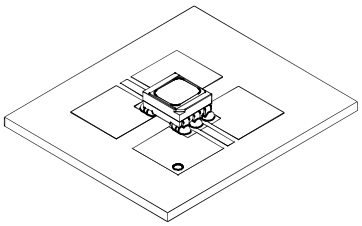
LED is recommended for reflow soldering and soldering profile is shown below.

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

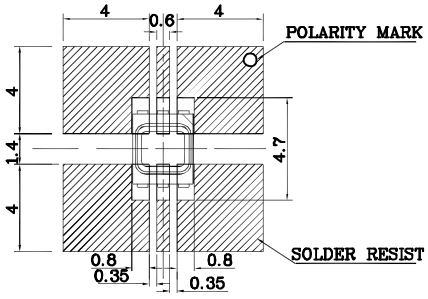


Notes:
1. Maximum soldering temperature should not exceed 260℃
2. Recommended reflow temperature: 145℃−260℃
3. Do not put stress to the epoxy resin during high temperatures conditions

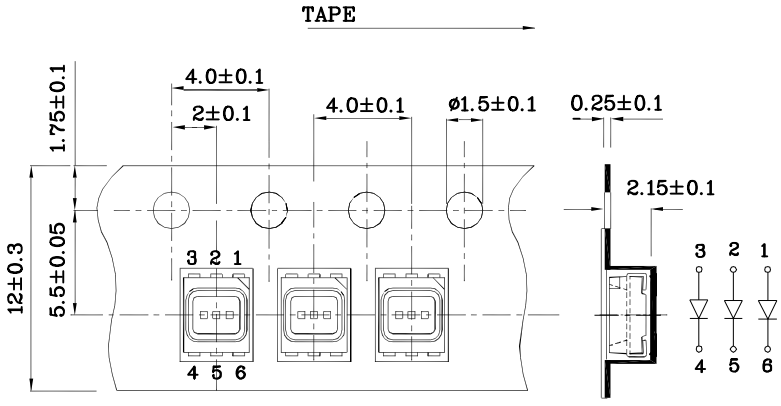
❖ **The device has a single mounting surface. The device must be mounted according to the specifications.**



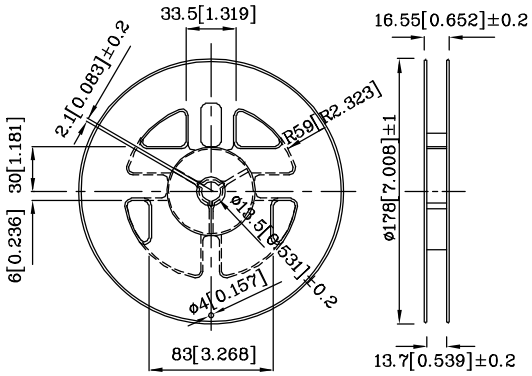
❖ **Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)**



❖ **Tape Specification (Units : mm)**



❖ **Reel Dimension**



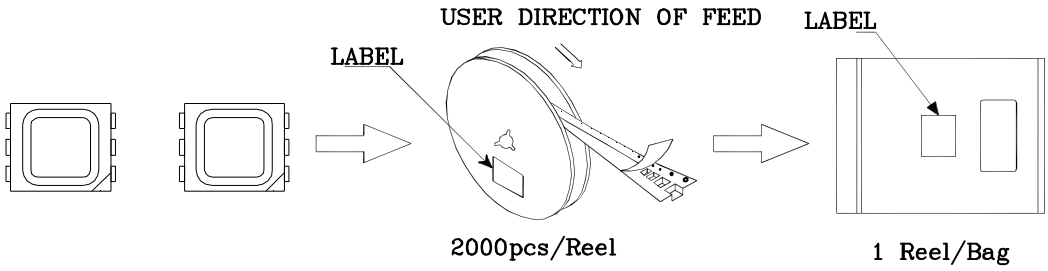
Remarks:

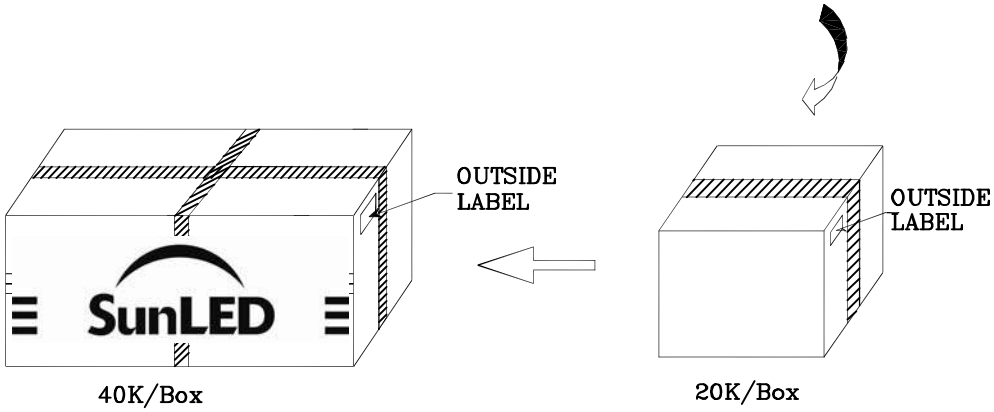
If special sorting is required (e.g. binning based on forward voltage, Luminous intensity / luminous flux, or wavelength), the typical accuracy of the sorting process is as follows:

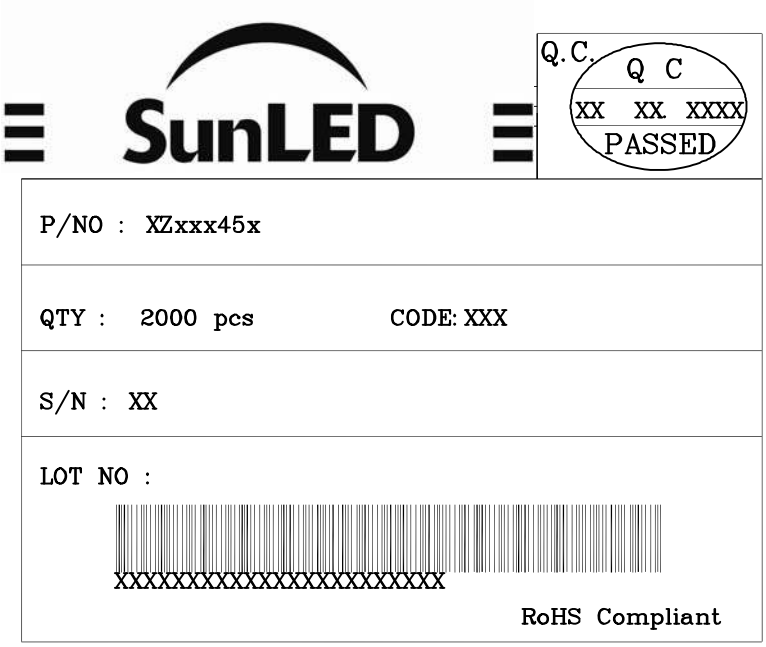
1. Wavelength: +/-1nm
2. Luminous intensity / luminous flux: +/-15%
3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters.

PACKING & LABEL SPECIFICATIONS







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2. Contents within this document are subject to improvement and enhancement changes without notice.
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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.
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