SunLED
www.SunLEDusa.com

Part Number: XZMECBDDG45S

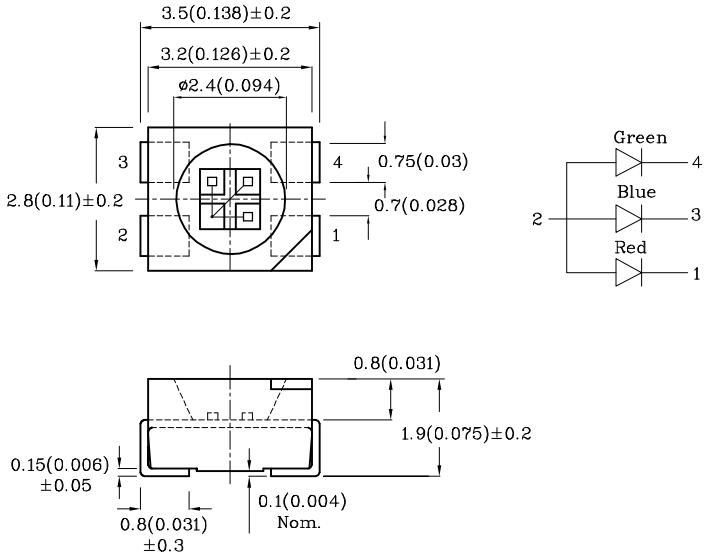
3.5 x 2.8 mm PLCC4 SMD LED

Features

- Ideal for indication light on hand held products
- Long life and robust package
- Standard Package: 2000pcs/ Reel
- MSL (Moisture Sensitivity Level): 3
- Halogen-free
- 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.

Absolute Maximum Ratings (T_A=25°C)		**Red (AlGaInP)**	**Blue (InGaN)**	**Green (InGaN)**	**Unit**
Reverse Voltage	V_R	5	5	5	V
Forward Current	I_F	50	30	30	mA
Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width	I_{FP}	195	150	150	mA
Power Dissipation	P_D	125	120	123	mW
Electrostatic Discharge Threshold (HBM)		3000	250	450	V
Operating Temperature	T_A	-40 ~ +85			°C
Storage Temperature	Tstg				

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)

Operating Characteristics (T_A=25°C)		**Red (AlGaInP)**	**Blue (InGaN)**	**Green (InGaN)**	**Unit**
Forward Voltage (Typ.) (I_F=20mA)	V_F	2.0	3.3	3.3	V
Forward Voltage (Max.) (I_F=20mA)	V_F	2.5	4.0	4.1	V
Reverse Current (Max.) (V_R=5V)	I_R	10	50	50	μA
Wavelength of Peak Emission CIE127-2007* (Typ.) (I_F=20mA)	λP	630*	460*	515*	nm
Wavelength of Dominant Emission CIE127-2007* (Typ.) (I_F=20mA)	λD	621*	465*	525*	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I_F=20mA)	△λ	20	25	35	nm
Capacitance (Typ.) (V_F=0V, f=1MHz)	C	25	100	45	pF

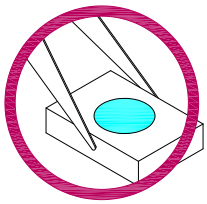
Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I_F=20mA) mcd min.	Luminous Intensity CIE127-2007* (I_F=20mA) mcd typ.	Wavelength CIE127-2007* nm λP	Viewing Angle 2θ 1/2
XZMECBDDG45S	Red	AlGaInP	Water Clear	120*	218*	630*	120°
	Blue	InGaN		55*	98*	460*	
	Green	InGaN		500*	695*	515*	

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

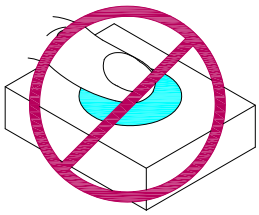
Handling Precautions

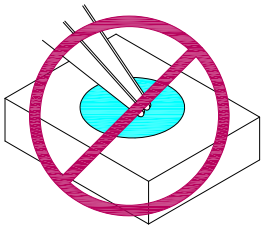
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using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

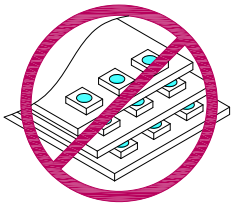


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

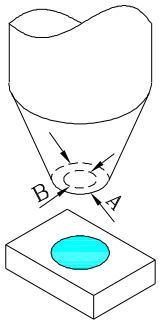




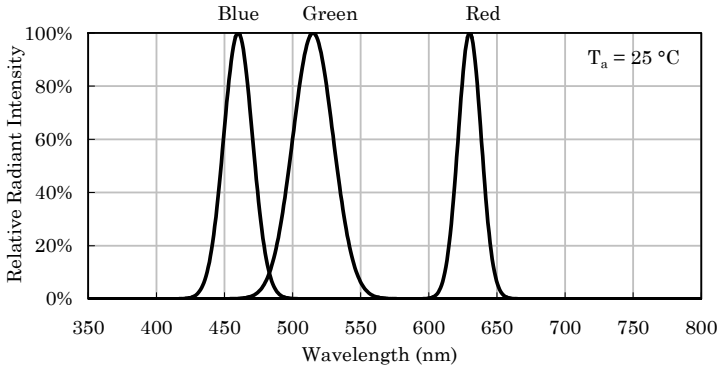
3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



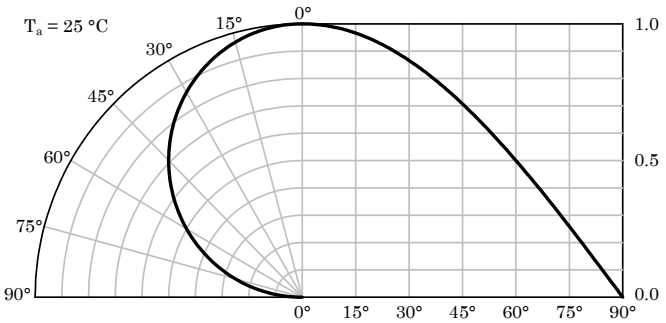
4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
4.3. The dimensions of the component must be accurately programmed in the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

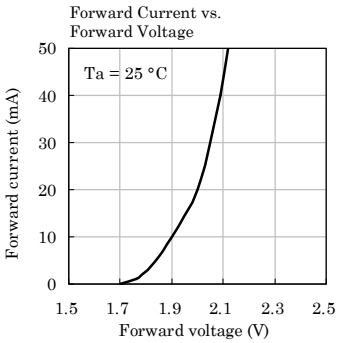


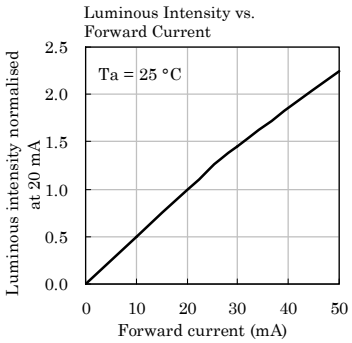
Relative Intensity Vs. CIE Wavelength

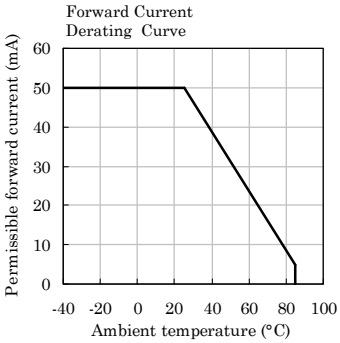


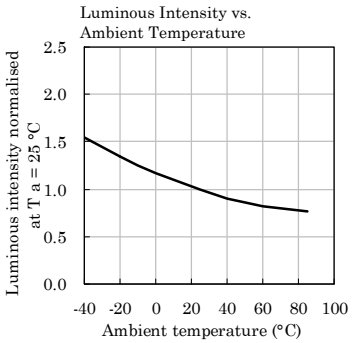
Spatial Distribution

❖ Red

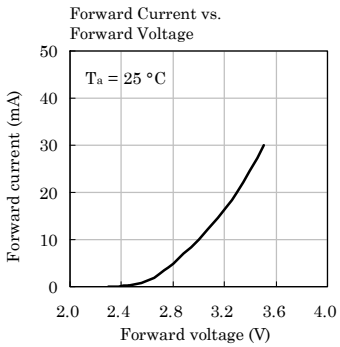


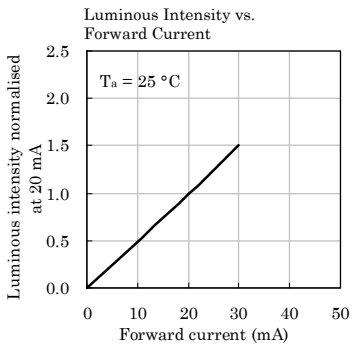


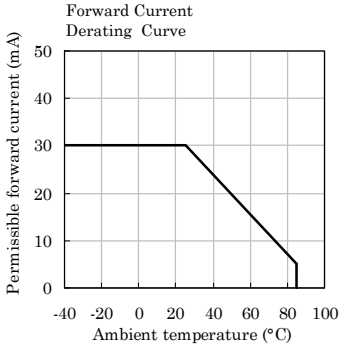


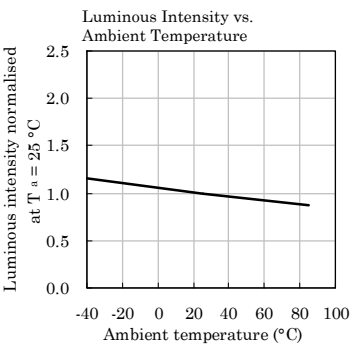


❖ Blue

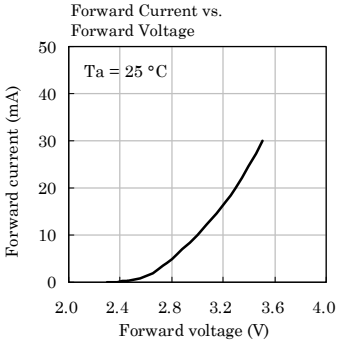


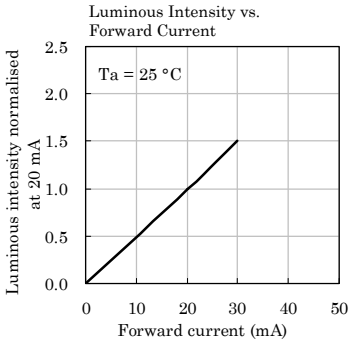


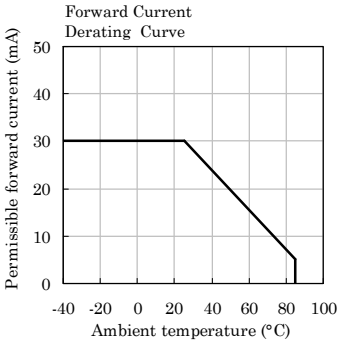


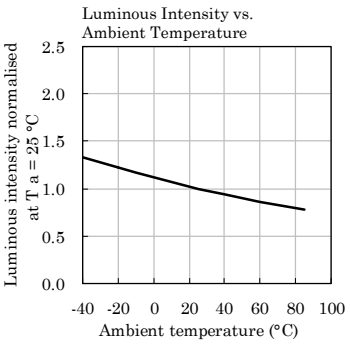


❖ Green



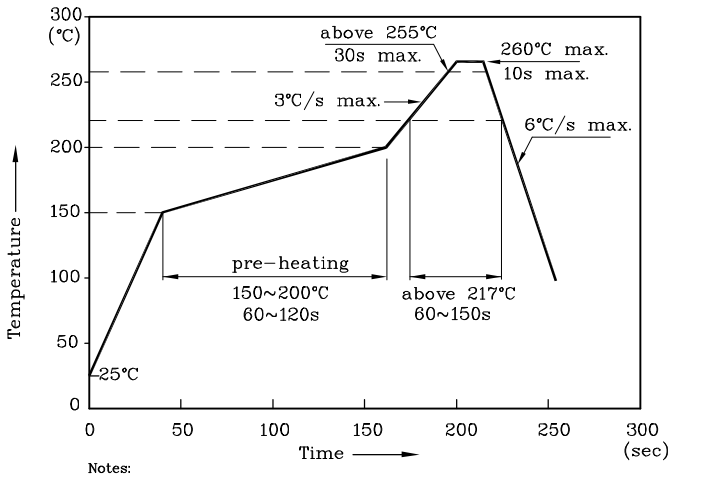






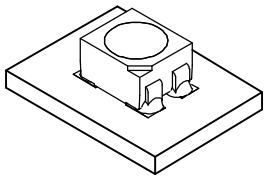
❖ LED is recommended for reflow soldering and soldering profile is shown below.

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

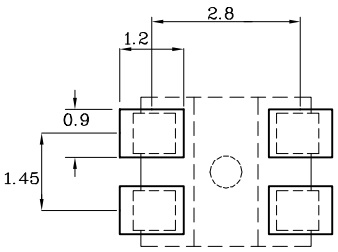


Notes:
1. All temperatures refer to the center of the package, measured on the package body surface facing up during reflow.
2. Do not apply any stress to the LED during high temperature conditions.
3. Maximum number of soldering passes: 2

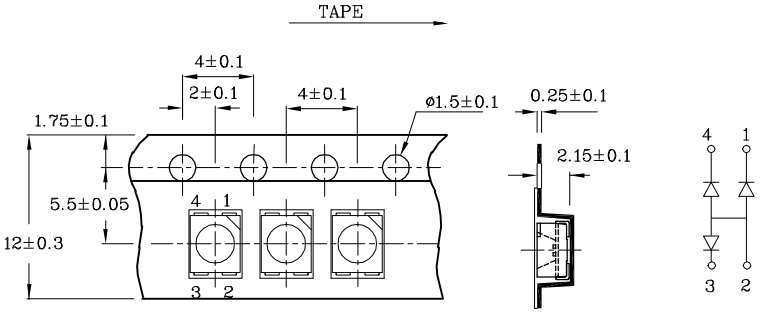
❖ The device has a single mounting surface. The device must be mounted according to the specifications.



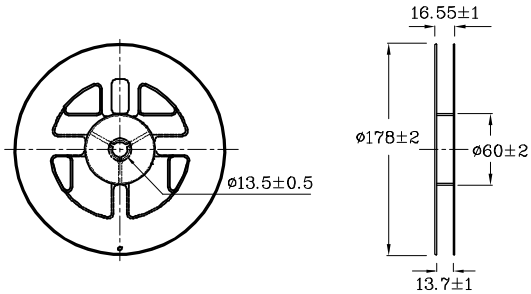
❖ Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



❖ Tape Specification (Units : mm)



❖ Reel Dimension (Units : mm)



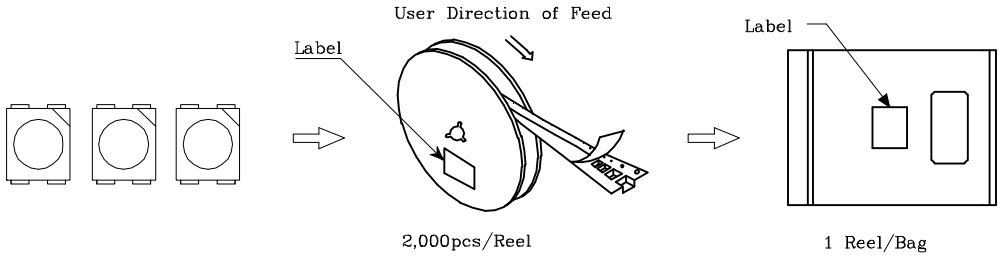
Remarks:

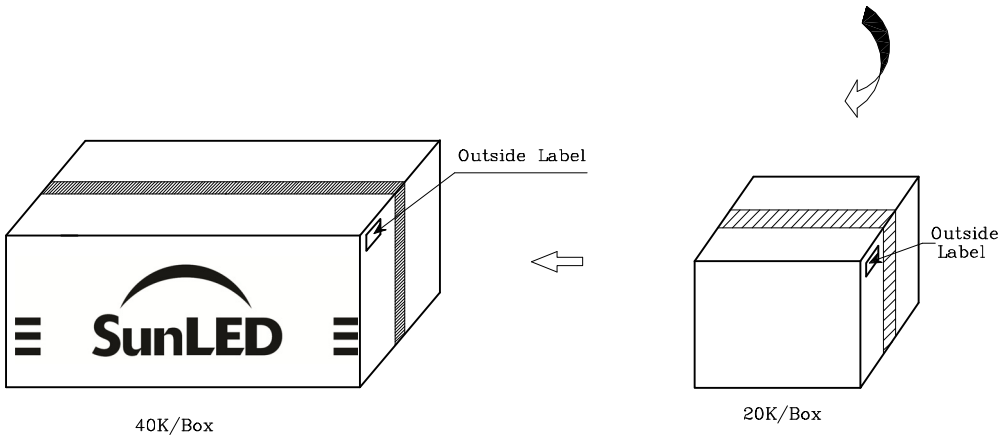
If special sorting is required (e.g. binning based on forward voltage, Luminous intensity / luminous flux, or wavelength), the typical accuracy of the sorting process is as follows:

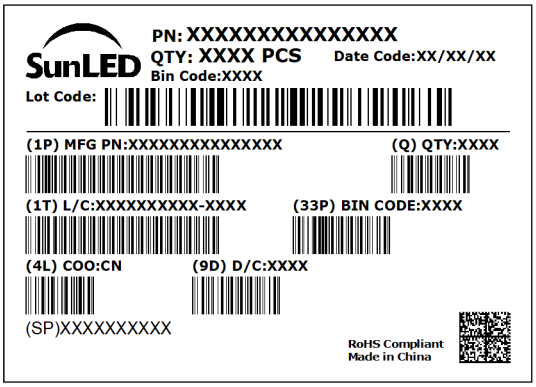
1. Wavelength: +/-1nm
2. Luminous intensity / luminous flux: +/-15%
3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters.

PACKING & LABEL SPECIFICATIONS







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 performance of the product(s) should be evaluated and verified by the customer to ensure it can meet the customer's application requirements.
6. The contents within this document may not be altered without prior consent by SunLED.
7. Additional technical notes are available at https://www.SunLEDusa.com/TechnicalNotes.asp