SunLED
www.SunLEDusa.com

Part Number: XZMDKDGCBD45S

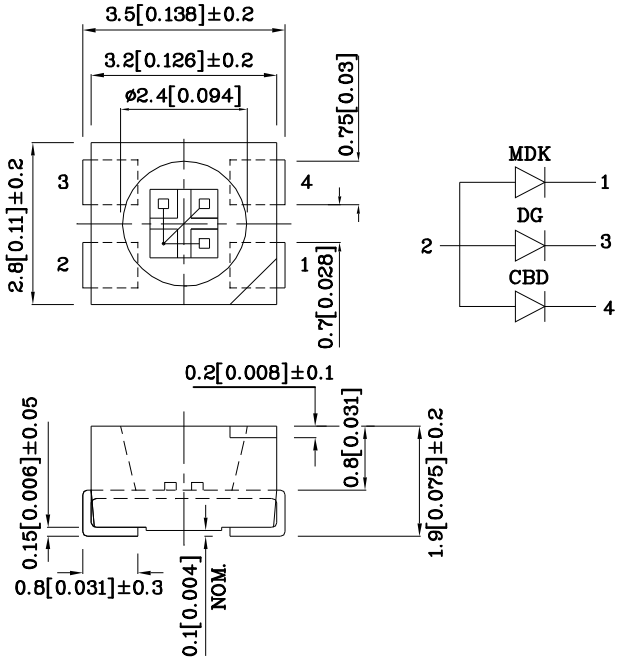
3.5x2.8mm PLCC4 SMD LED

Features

- Ideal for indication light on hand held products
- Long life and robust package
- Variety of lens types and color choices available
- Package: 1500pcs / reel
- Moisture sensitivity level : 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 ±0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

Absolute Maximum Ratings (T_A=25°C)		**MDK (AlGaInP)**	**DG (InGaN)**	**CBD (InGaN)**	**Unit**
Reverse Voltage	V_R	5	5	5	V
Forward Current	I_F	30	30	30	mA
Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width	i_{FS}	185	150	150	mA
Power Dissipation	P_D	75	123	120	mW
Electrostatic Discharge Threshold (HBM)		-	450	250	V
Operating Temperature	T_A	-40 ~ +85			°C
Storage Temperature	Tstg				

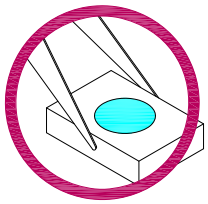
Operating Characteristics (T_A=25°C)		**MDK (AlGaInP)**	**DG (InGaN)**	**CBD (InGaN)**	**Unit**
Forward Voltage (Typ.) (I_F=20mA)	V_F	1.95	3.3	3.3	V
Forward Voltage (Max.) (I_F=20mA)	V_F	2.5	4.1	4	V
Reverse Current (Max.) (V_R=5V)	I_R	10	50	50	uA
Wavelength of Peak Emission (Typ.) (I_F=20mA)	λP	650	515	468	nm
Wavelength of Dominant Emission (Typ.) (I_F=20mA)	λD	630	525	470	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I_F=20mA)	△λ	28	30	25	nm
Capacitance (Typ.) (V_F=0V, f=1MHz)	C	35	45	100	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (I_F=20mA) mcd min.	Luminous Intensity (I_F=20mA) mcd typ.	Wavelength nm λP	Viewing Angle 2θ 1/2
XZMDKDGCBD45S	Red	AlGaInP	Water Clear	200	317	650	120°
	Green	InGaN		480	695	515	
	Blue	InGaN		70	128	468	

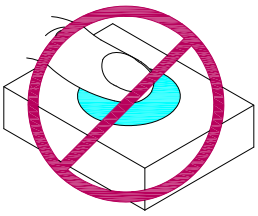
Handling Precautions

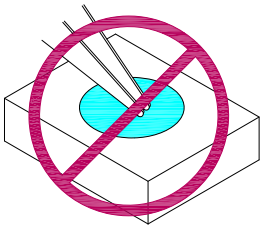
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using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

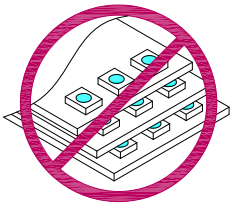


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

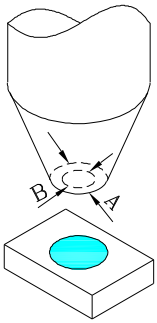




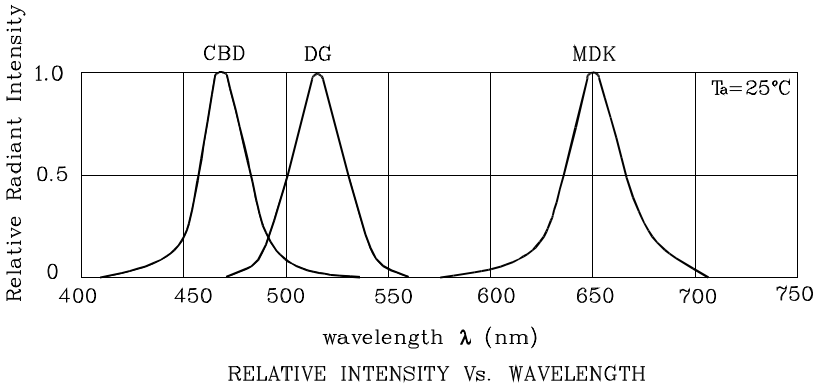
3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



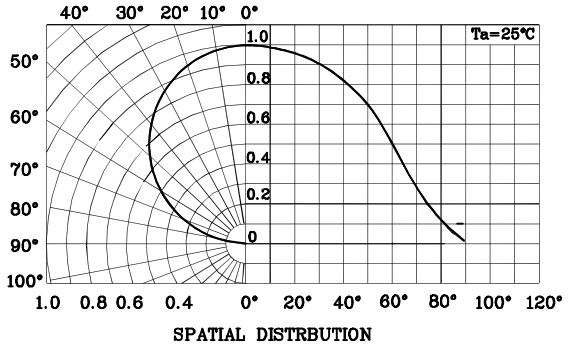
4.1. The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible.
4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
4.3. The 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 lead-frame. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

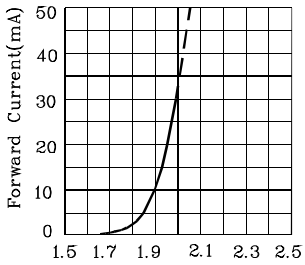


RELATIVE INTENSITY Vs. WAVELENGTH

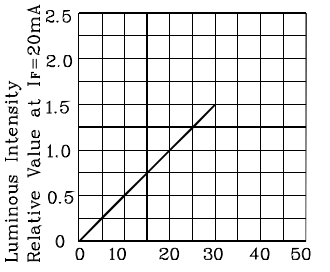


SPATIAL DISTRBUTION

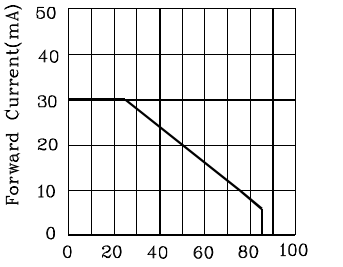
❖ MDK



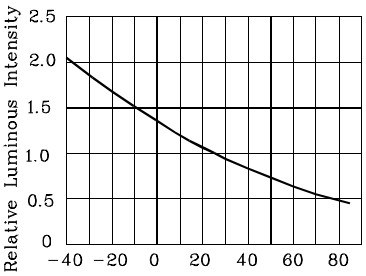
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

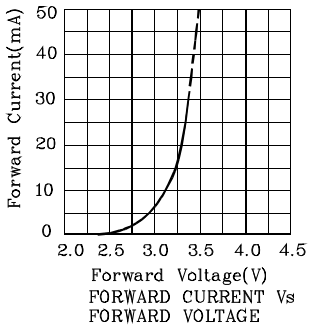


FORWARD CURRENT
DERATING CURVE

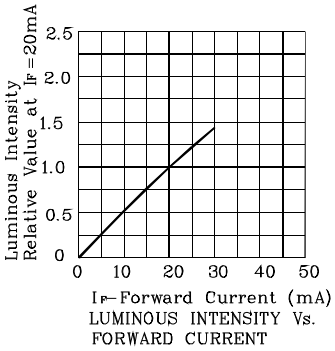


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

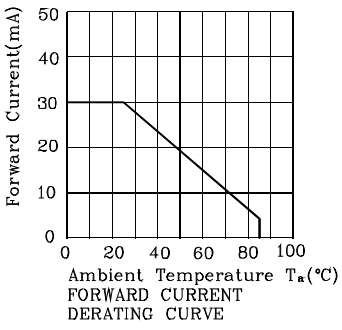
❖ DG



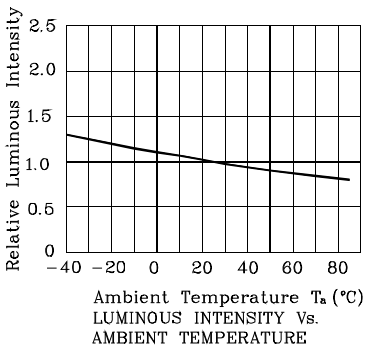
FORWARD CURRENT Vs
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

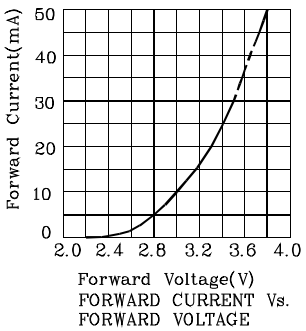


FORWARD CURRENT
DERATING CURVE

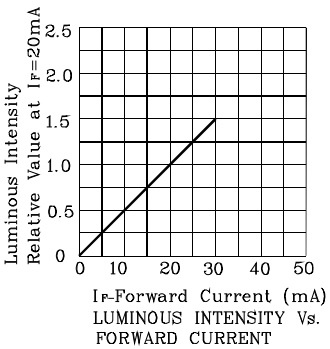


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

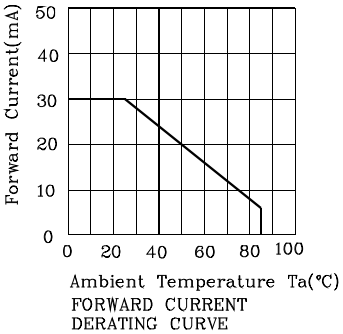
❖ CBD



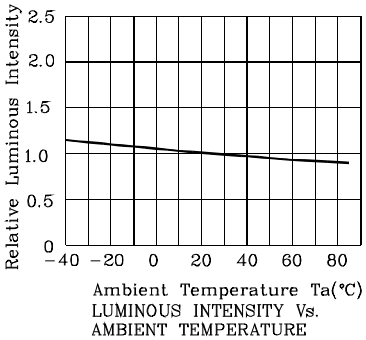
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



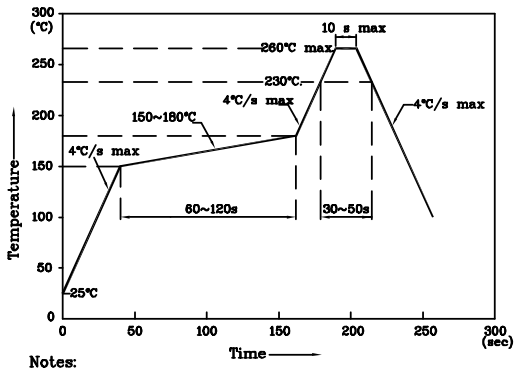
FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

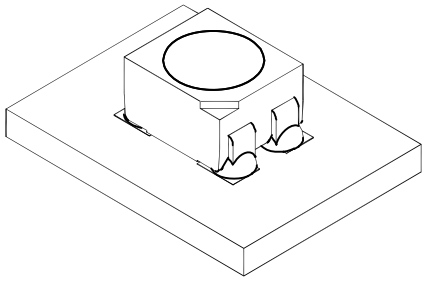
LED is recommended for reflow soldering and soldering profile is shown below.

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

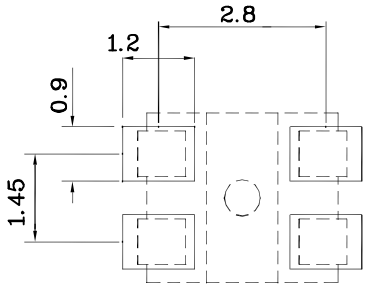


Notes:
1. Maximum soldering temperature should not exceed 260°C
2. Recommended reflow temperature: 145°C−260°C
3. Do not put stress to the epoxy resin during high temperatures conditions

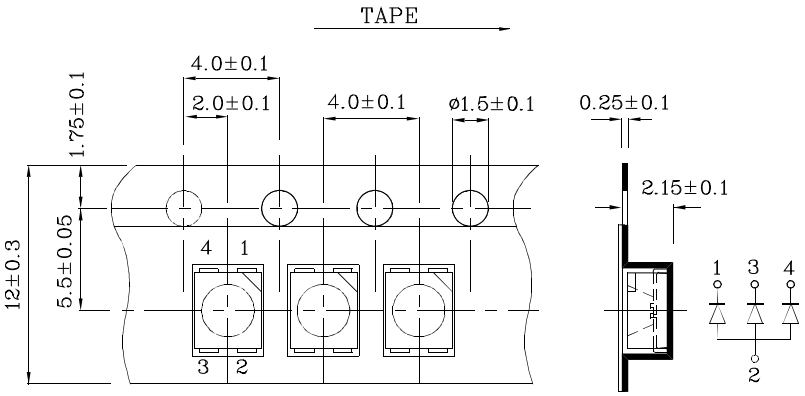
❖ **The device has a single mounting surface. The device must be mounted according to the specifications.**



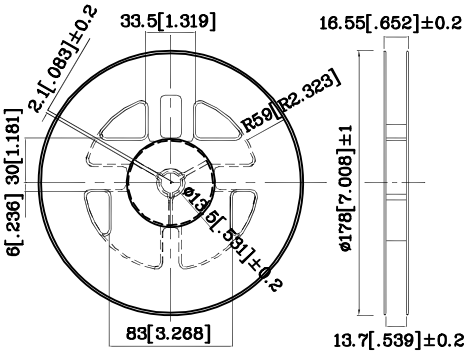
❖ **Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)**



❖ **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