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With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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3.2x2.8mm 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
- RoHS compliant.

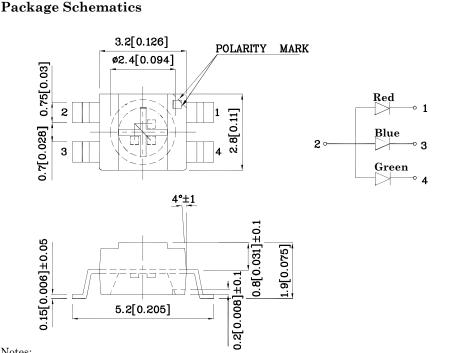






## ATTENTION OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE

DEVICES



- 1. All dimensions are in millimeters (inches).
- 2. Tolerance is  $\pm 0.2(0.008")$  unless otherwise noted.
- 3. Specifications are subject to change without notice.

Absolute Maximum Ratings (T <sub>A</sub> =25°C)		Red (AlGaI nP)	(AlGaI (InGa		Unit
Reverse Voltage	$V_{\rm R}$	5	5	5	V
Forward Current	$I_{\mathrm{F}}$	30	30 30		mA
Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width	$i_{\mathrm{FS}}$	185	150	150	mA
Power Dissipation	$P_D$	75	120	123	mW
Electrostatic Discharge Threshold (HBM)		3000	250	450	V
Operating Temperature	$T_{A}$		°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 <sub>A</sub> =25°C)		Red (AlGaI nP)	Blue (InGa N)	Green (InGa N)	Unit
Forward Voltage (Typ.) (I <sub>F</sub> =20mA)	$V_{\mathrm{F}}$	1.95	3.3	3.3	V
Forward Voltage (Max.) (I <sub>F</sub> =20mA)	$V_{\mathrm{F}}$	2.5	4	4.1	V
Reverse Current (Max.) $(V_R=5V)$	$I_R$	10	50	50	uA
Wavelength of Peak Emission CIE127-2007* (Typ.) $(I_F=20\text{mA})$	λP	645*	460*	515*	nm
Wavelength of Dominant Emission CIE127-2007* (Typ.) $(I_F=20\text{mA})$	λD	630*	465*	525*	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I <sub>F</sub> =20mA)	Δλ	28	25	35	nm
Capacitance (Typ.) (V <sub>F</sub> =0V, f=1MHz)	С	35	100	45	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I <sub>F</sub> =20mA) mcd		Wavelength CIE127-2007* λP nm	Viewing Angle 20 1/2
				min.	typ.		
	Red	AlGaInP		55*	108*	645*	
XZMDKCBDDG45S-9	Blue	InGaN	Water Clear	55*	98*	460*	120°
	Green	InGaN	<del>-</del>	400*	497*	515*	

<sup>\*</sup>Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.



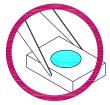


### **Handling Precautions**

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.

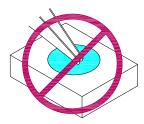
As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

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.



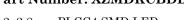
- 4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
- 4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
- 4.3. The dimensions of the component must be accurately programmed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

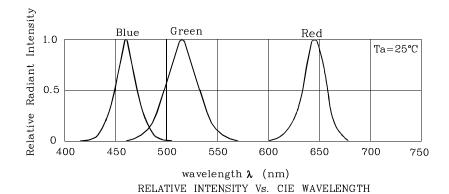
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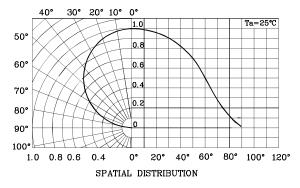




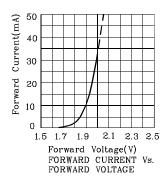


3.2x2.8mm PLCC4 SMD LED

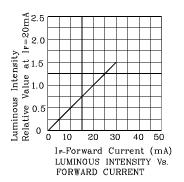


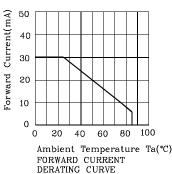


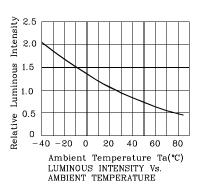
### **❖** Red



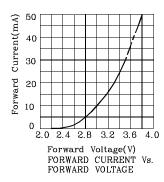
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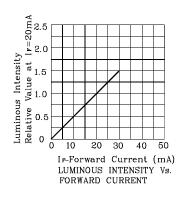


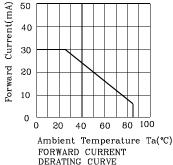


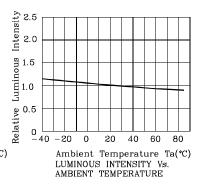


### **♦** Blue

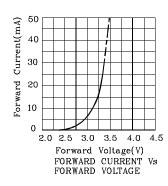


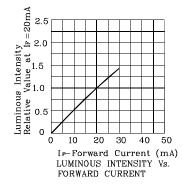


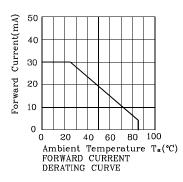


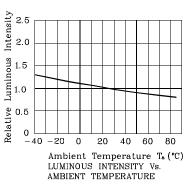


### **♦** Green





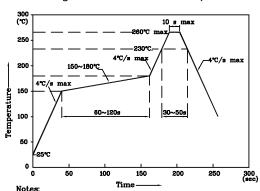




3.2x2.8mm PLCC4 SMD LED

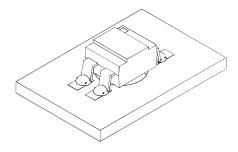
# LED is recommended for reflow soldering and soldering profile is shown below.

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

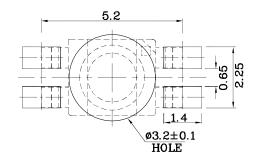


- 1. Maximum soldering temperature should not exceed 260°C
- 2. Recommended reflow temperature: 145°C-260°C
- 3. Do not put stress to the epoxy resin during high temperatures conditions

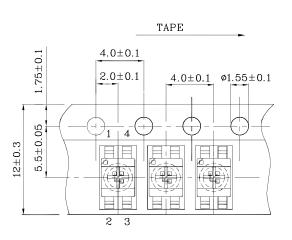
## ♦ The device has a single mounting surface. The device must be mounted according to the specifications.

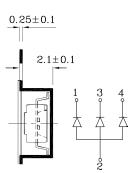


# **♦** Recommended Soldering Pattern (Units: mm; Tolerance: ± 0.1)

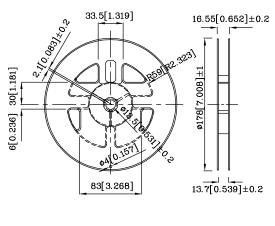


### **❖** Tape Specification (Units:mm)





### **❖** 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:

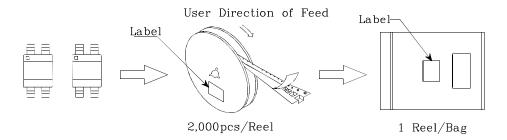
- 1. Wavelength: +/-1nm
- 2. Luminous intensity / luminous flux: +/-15%
- 3. Forward Voltage: +/-0.1V

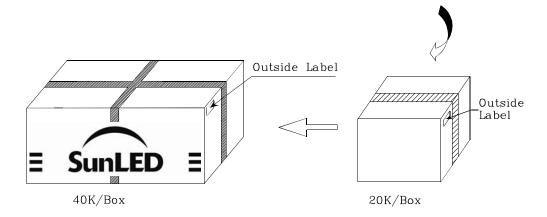
Note: Accuracy may depend on the sorting parameters.

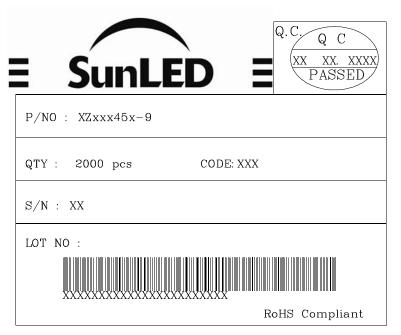




### PACKING & LABEL SPECIFICATIONS







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