

### 1.6x1.6mm FULL-COLOR SURFACE MOUNT LED

#### **Features**

- Ideal for indication light on hand held products
- Long life and robust package
- Standard Package: 2,000pcs/ Reel
- $\bullet$  MSL (Moisture Sensitivity Level): 3
- RoHS compliant

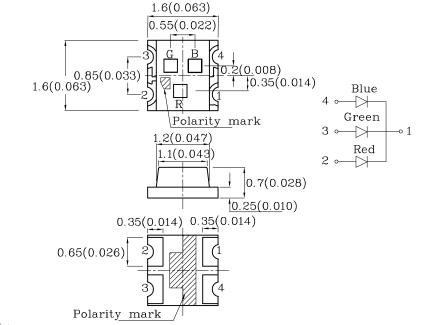






## ATTENTION OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE DEVICES

## Package Schematics



#### Notes:

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

Absolute Maximum Ratings ( $T_A$ =25°C)		Red (AlGaIn P)	Green (InGa N)	Blue (InGa N)	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	$i_{\mathrm{FS}}$	150	100	100	mA
Power Dissipation	$P_D$	84	120	120	mW
Electrostatic Discharge Threshold (HBM)		3000	450	250	V
Operating Temperature	$T_{\rm A}$	-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 <sub>A</sub> =25°C)		Red (AlGaIn P)	Green (InGaN	Blue (InGaN )	Unit
Forward Voltage (Typ.) (I <sub>F</sub> =20mA)	$V_{\mathrm{F}}$	2.2	3.2	3.3	V
Forward Voltage (Max.) (I <sub>F</sub> =20mA)	$V_{\mathrm{F}}$	2.8	4	4	V
Reverse Current (Max.) $(V_R=5V)$	$I_{R}$	10	50	50	uA
Wavelength of Peak Emission CIE127-2007* (Typ.) (I <sub>F</sub> =20mA)	λΡ	640*	520*	465*	nm
Wavelength of Dominant Emission CIE127-2007* (Typ.) (I <sub>F</sub> =20mA)	λD	625*	525*	470*	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I <sub>F</sub> =20mA)	Δλ	25	35	22	nm
Capacitance (Typ.) (V <sub>F</sub> =0V, f=1MHz)	С	27	100	100	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I <sub>F</sub> =20mA)mcd		Wavelength CIE127-2007* nm λP	Viewing Angle 20 1/2
				min.	typ.		
	Red	AlGaInP	_	200*	357*	640*	
XZM2ACRM2DGFBB110W	Green	InGaN	Water Clear	500*	745*	520*	130°
	Blue	InGaN	_	80*	138*	465*	

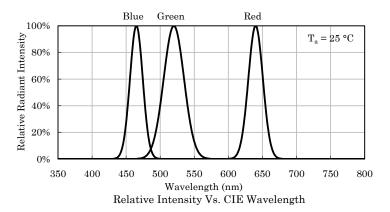
<sup>\*</sup>Luminous intensity value and wavelength are in accordance with CIE127-2007 standards. Oct 23,2018

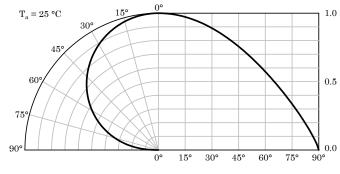
XDSB9177 V1-Z Layout: Maggie L.



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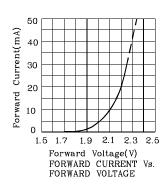


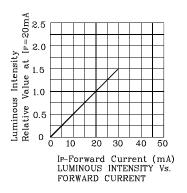


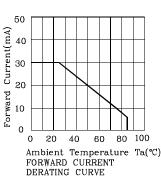


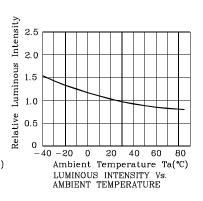
# Spatial Distribution

### **❖** Red

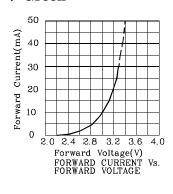


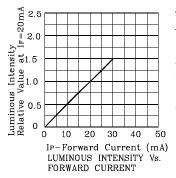


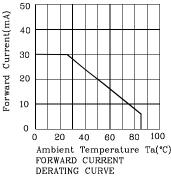


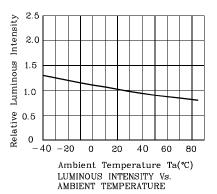


### Green

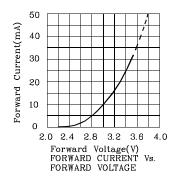


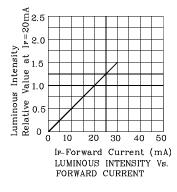


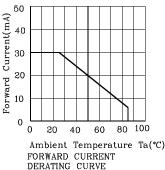


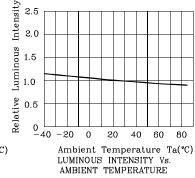


### Blue









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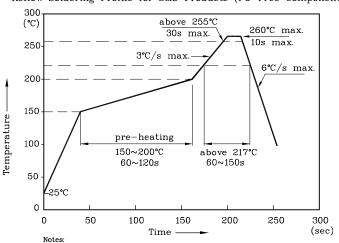
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# LED is recommended for reflow soldering and soldering profile is shown below.

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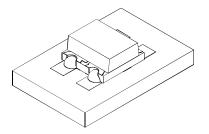
Reflow Soldering Profile for SMD Products (Pb-Free Components)



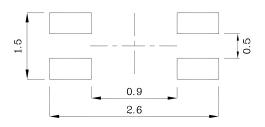
- 1. All temperatures refer to the center of the package, measured on the package body surface facing up during reflow.
- 2. Do not apply any stress to the LED during high temperature conditions.

  3. Maximum number of soldering passes: 2

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



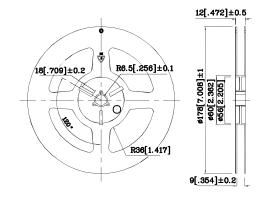
## **❖** Recommended Soldering Pattern (Units: mm; Tolerance: $\pm 0.1$ )



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

## TAPE $4 \pm 0.1$ $01.5 \pm 0.1$ 0.23±0.1 2±0.1 $4 \pm 0.1$ 1.75±0.1 1.05±0.1 $3.5 \pm 0.05$ $8\pm0.3$

# 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

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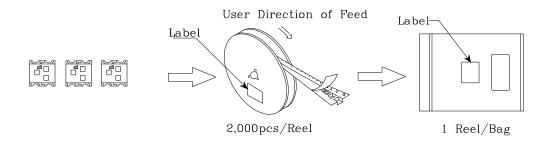
- 2. Luminous intensity / luminous flux: +/-15%
- 3. Forward Voltage: +/-0.1V

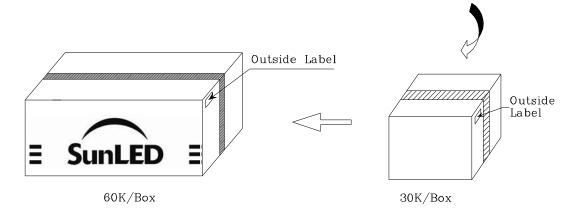
Note: Accuracy may depend on the sorting parameters.

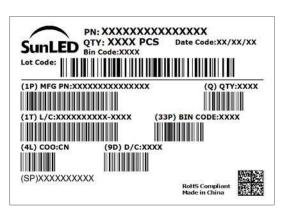
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### PACKING & LABEL SPECIFICATIONS







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