SunLED
www.SunLEDusa.com

Part Number: XZDGCBDMERK150W-1

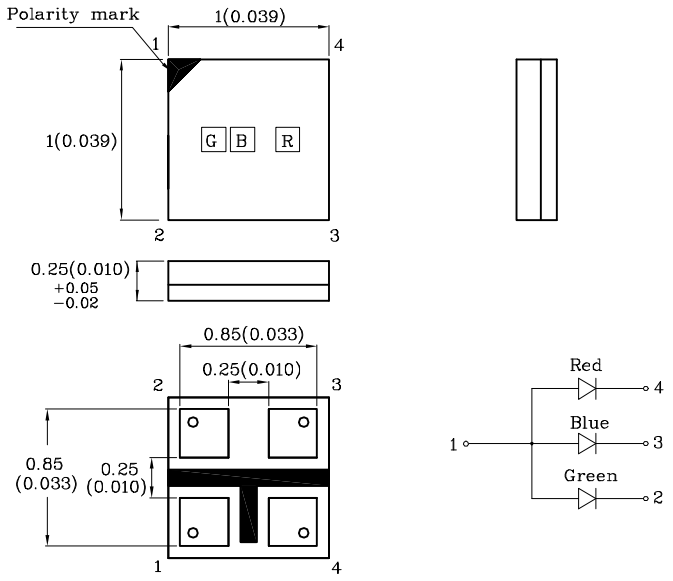
1 x 1 x 0.25 mm Full-Color Surface Mount LED

Features

- Ideal for indication light on hand held products
- Long life and robust package
- Standard Package: 4,000pcs/ Reel
- MSL (Moisture Sensitivity Level):3
- Halogen-free
- RoHS compliant

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE DEVICES

Package Schematics (Preliminary Spec)



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.1(0.004") unless otherwise noted.
3. Specifications are subject to change without notice.

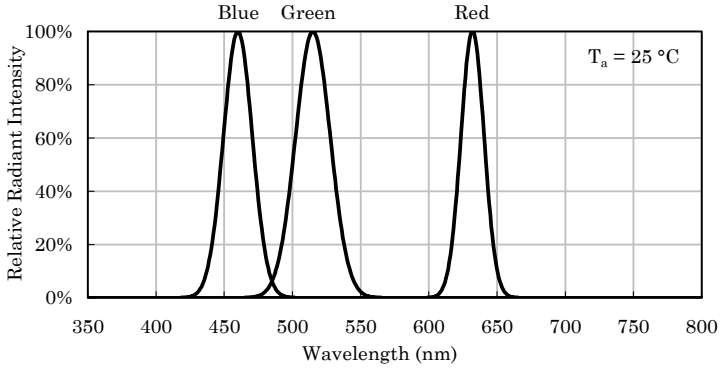
Absolute Maximum Ratings (T_A=25°C)		**Green (InGaN)**	**Blue (InGaN)**	**Red (AlGaInP)**	**Unit**
Reverse Voltage	V_R	5	5	5	V
Forward Current [2]	I_F	10	10	10	mA
Forward Current (Peak) Duty Cycle ≤ 1/20 1ms Pulse Width	i_{FS}	50	50	50	mA
Power Dissipation [1]	P_D	35	35	35	mW
Electrostatic Discharge Threshold (HBM)		450	250	3000	V
Operating Temperature	T_A	-40 ~ +85			°C
Storage Temperature	Tstg	-40 ~ +100			

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)

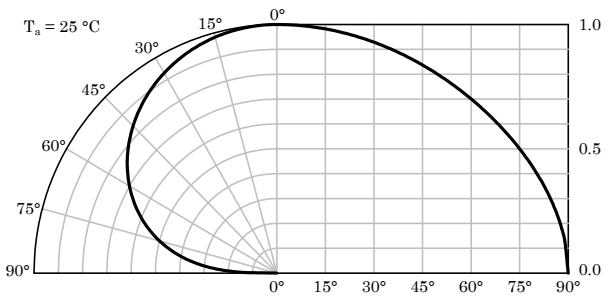
Operating Characteristics (T_A=25°C)		**Green (InGaN)**	**Blue (InGaN)**	**Red (AlGaInP)**	**Unit**
Forward Voltage (Typ.) (I_F=5mA)	V_F	2.85	2.8	1.95	V
Forward Voltage (Max.) (I_F=5mA)	V_F	3.3	3.3	2.3	V
Reverse Current (Max.) (V_R=5V)	I_R	50	50	10	μA
Wavelength of Peak Emission CIE127-2007* (Typ.) (I_F=5mA)	λP	515*	460*	632*	nm
Wavelength of Dominant Emission CIE127-2007* (Typ.) (I_F=5mA)	λD	525*	465*	624*	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I_F=5mA)	△λ	30	25	20	nm
Capacitance (Typ.) (V_F=0V, f=1MHz)	C	45	100	25	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I_F=5mA) mcd		Wavelength CIE127-2007* nm λP	Viewing Angle 2θ 1/2
				min.	typ.		
XZDGCBDMERK150W-1	Green	InGaN	Water Clear	80*	218*	515*	150°
	Blue	InGaN		10*	22*	460*	
	Red	AlGaInP		15*	29*	632*	

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

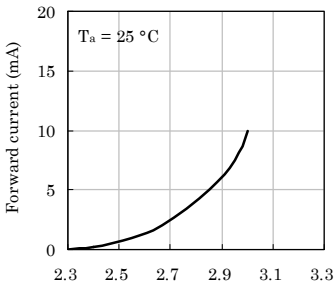


Relative Intensity Vs. CIE Wavelength

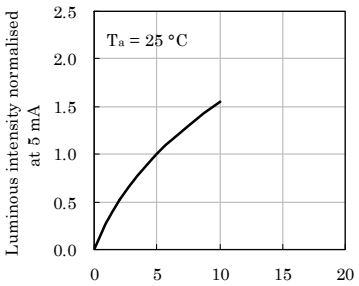


Spatial Distribution

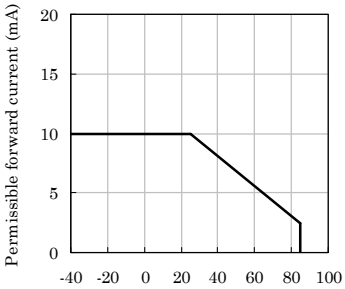
❖ Green



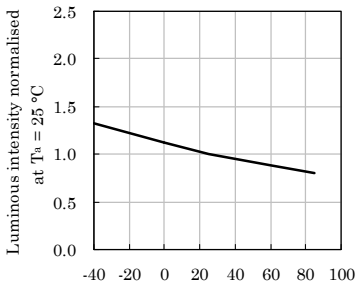
Forward Current vs. Forward Voltage



Luminous Intensity vs. Forward Current

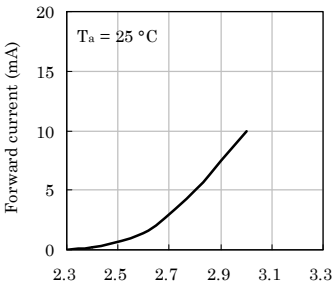


Forward Current Derating Curve

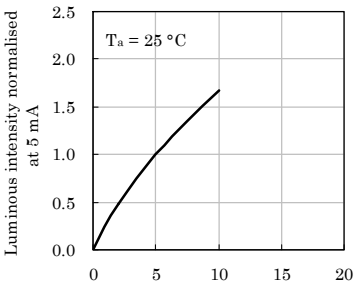


Luminous Intensity vs. Ambient Temperature

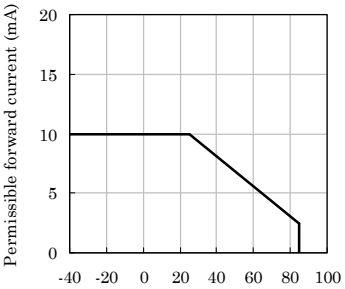
❖ Blue



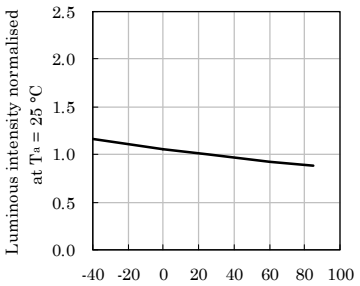
Forward Current vs. Forward Voltage



Luminous Intensity vs. Forward Current

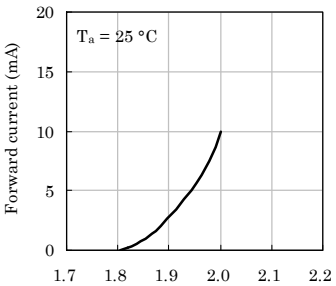


Forward Current Derating Curve

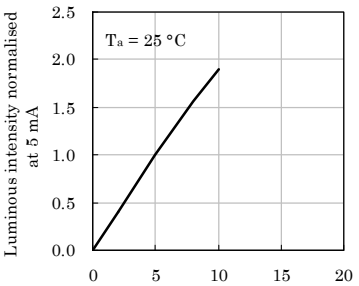


Luminous Intensity vs. Ambient Temperature

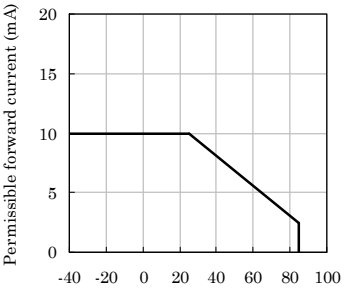
❖ Red



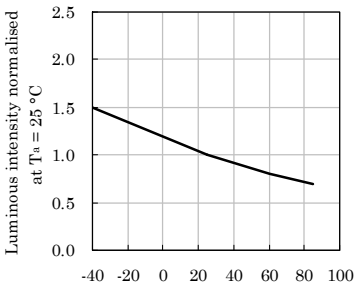
Forward Current vs. Forward Voltage



Luminous Intensity vs. Forward Current

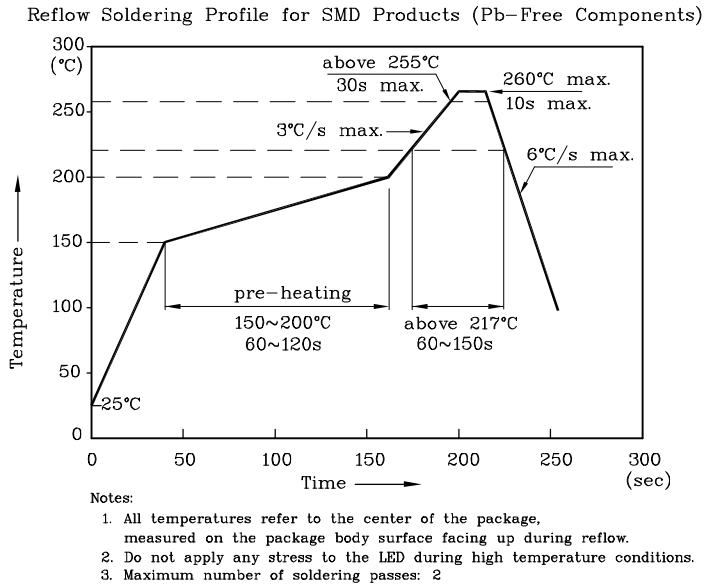


Forward Current Derating Curve



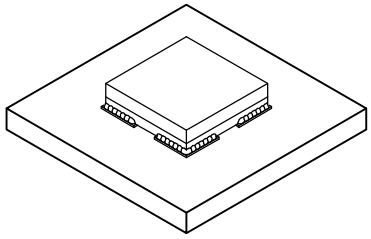
Luminous Intensity vs. Ambient Temperature

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

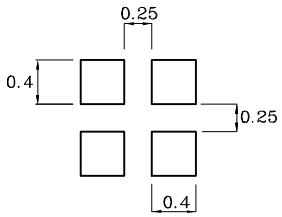


Notes:
1. All temperatures refer to the center of the package, measured on the package body surface facing up during reflow.
2. Do not apply any stress to the LED during high temperature conditions.
3. Maximum number of soldering passes: 2

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

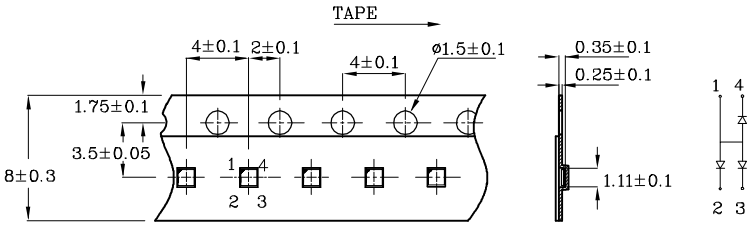


❖ Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)

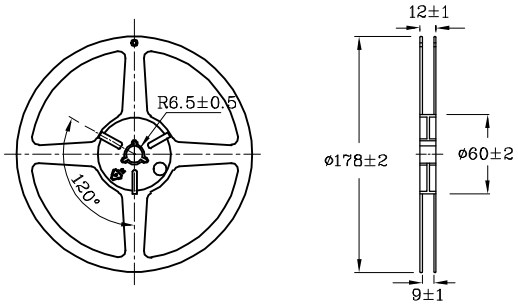


Mask open area ratio: 80%
Mask thickness: 80~100um

❖ 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
4. Within 35mW when multiple chips are lightened
5. The maximum ratings are valid for the case of lighting a single chip

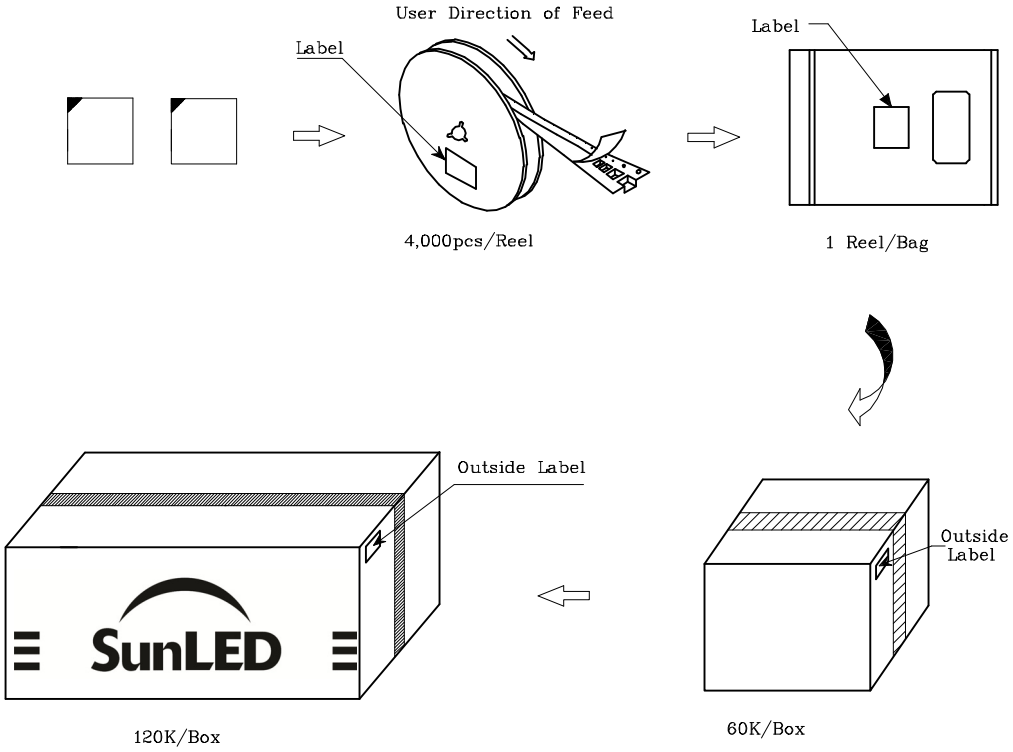
When two chips are lit at the same time, each chip should be driven at a current lower than 50% of the absolute maximum ratings

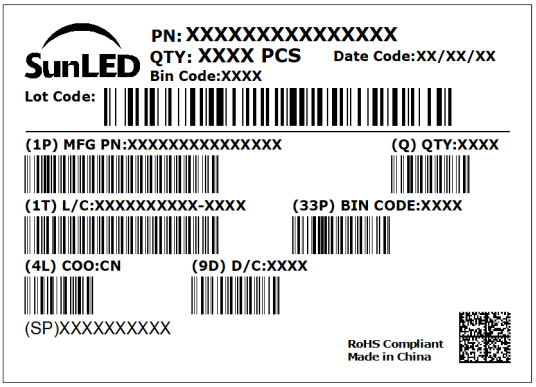
When three chips are lit at the same time, each chip should be driven at a current lower than 30% of the absolute maximum ratings

6. Duty Cycle ≤ 1/20, Pulse Width=1ms.

Note: Accuracy may depend on the sorting parameters.

PACKING & LABEL SPECIFICATIONS





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