

### Features

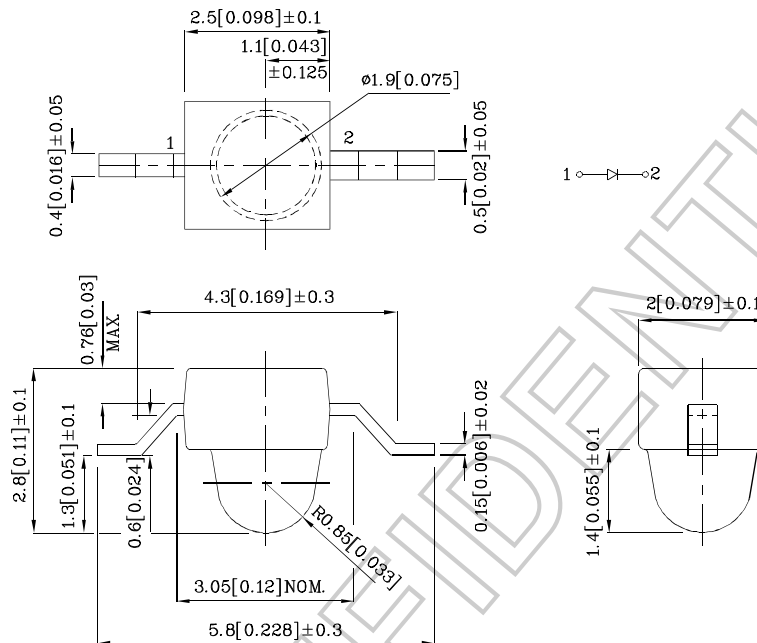
- High reliability LED package.
- Ideal for indication light on hand held products
- Long life and robust package
- Standard Package: 1,000pcs/ Reel
- MSL (Moisture Sensitivity Level): 3
- RoHS compliant

### Applications

- Backlighting for tell-tale indicators
- Dashboard lighting
- Interior lighting (footwell, dome light, accent lighting, etc.)
- Exterior lighting (turn signals, side markers, CHMSL, etc.)
- Signs and signals
- Various applications requiring high temperature rating



### Package Schematics



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.
3. Specifications are subject to change without notice.

Part Number	Dice	Lens-color	Luminous Intensity CIE127-2007* (If=20mA) mcd			Viewing Angle 2θ 1/2
			Code.	Min.	Max.	
XZ46WHTA-9AC33	Green(InGaN)	Water Clear	*S	*500	*700	20°
			*T	*700	*1000	
			*U	*1000	*1300	
			*V	*1300	*1600	
			*W	*1600	*1900	
			*X	*1900	*2300	

Note:  
1.01/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.  
\*Luminous intensity value is in accordance with CIE127-2007 standards.

**Absolute Maximum Ratings at Ta=25°C**

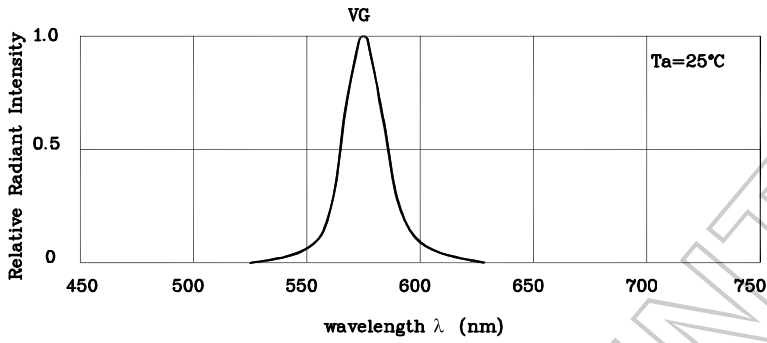
Parameter	Symbol	Value	Unit
Power dissipation	PD	75	mW
Junction temperature	Tj	5	°C
Reverse Voltage	VR	115	V
Operating Temperature	Top	-40 To +100	°C
Storage Temperature	Tstg	-40 To +110	°C
DC Forward Current [1]	IF	30	mA
Peak Forward Current [2]	IFM	150	mA
Electrostatic Discharge Threshold (HBM)		3000	V
Thermal Resistance (Junction/ambient) [1]	Rth j-a	590	°C/W

Notes:  
1. Rth(j-a) Results from mounting on PC board FR4 (pad size ≥ 16 mm<sup>2</sup> per pad),  
2. 1/10 Duty Cycle, 0.1ms Pulse Width.

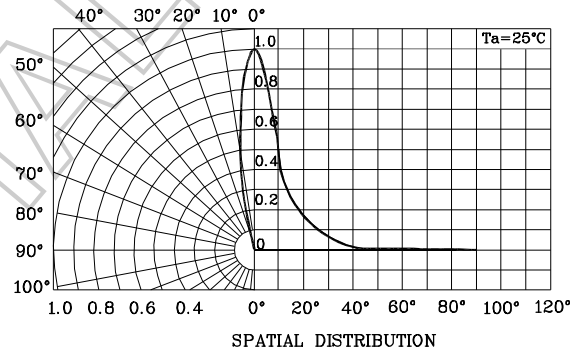
**Electrical / Optical Characteristics at Ta=25°C**

Parameter	Symbol	Value				Unit
		Code.	Min.	Typ.	Max.	
Wavelength at peak emission CIE127-2007* If=20mA	λ peak			574*		nm
Dominant Wavelength CIE127-2007* If=20mA	λ dom [1]	4*	565*		567*	nm
		5*	567*		569*	
		6*	569*		571*	
		7*	571*		573*	
Reverse Current (VR = 5V)	IR			20		uA
Spectral bandwidth at 50%FREL MAX If=20mA	Δλ			2.1	2.5	nm
Forward Voltage If=20mA	VF [2]				10	V
Temperature coefficient of Ipeak If=20mA, -10°C ≤ T ≤ 100°C	TC λ peak			0.12		nm/°C
Temperature coefficient of Idom If=20mA, -10°C ≤ T ≤ 100°C	TC λ dom			0.08		nm/°C
Temperature coefficient of VF If=20mA, -10°C ≤ T ≤ 100°C	TCv			-1.8		mV/°C

Notes:  
1. The dominant Wavelength (λ d) above is the setup value of the sorting machine. (Tolerance λ d : ±1nm.)  
\* Wavelength is in accordance with CIE127-2007 standards.

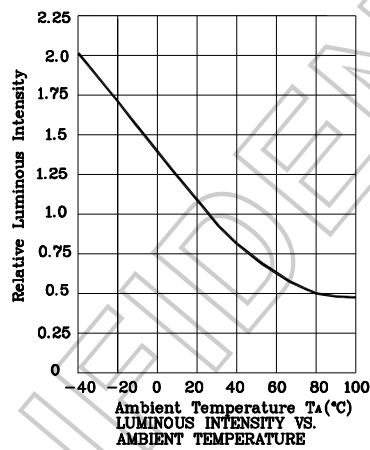
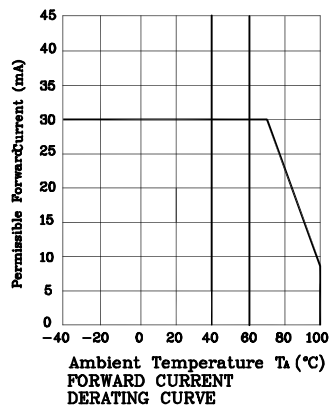
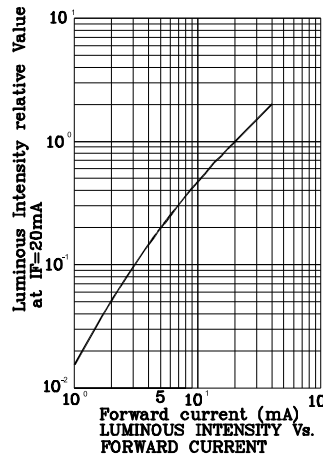
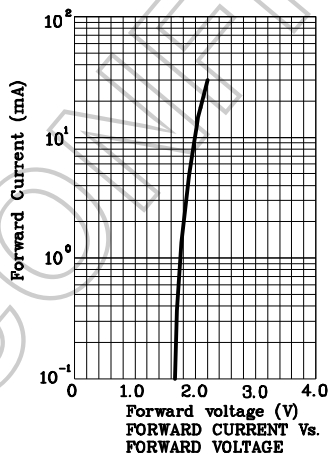


RELATIVE INTENSITY Vs. CIE WAVELENGTH



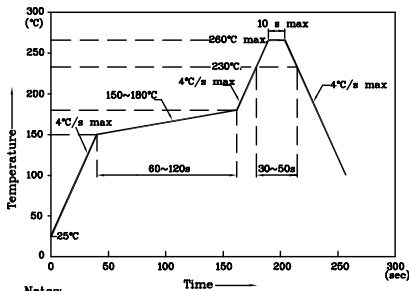
SPATIAL DISTRIBUTION

❖ VG



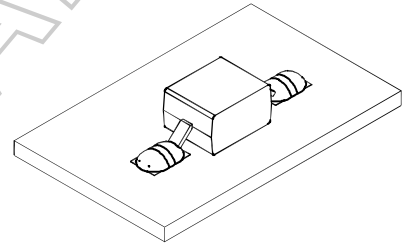
LED is recommended for reflow soldering and soldering profile is shown below.

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

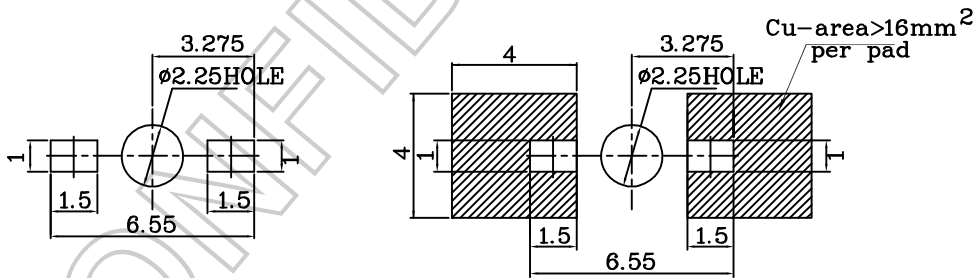


- Notes:
1. Maximum soldering temperature should not exceed 280°C
  2. Recommended reflow temperature: 145°C-280°C
  3. Do not put stress to the epoxy resin during high temperatures conditions

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

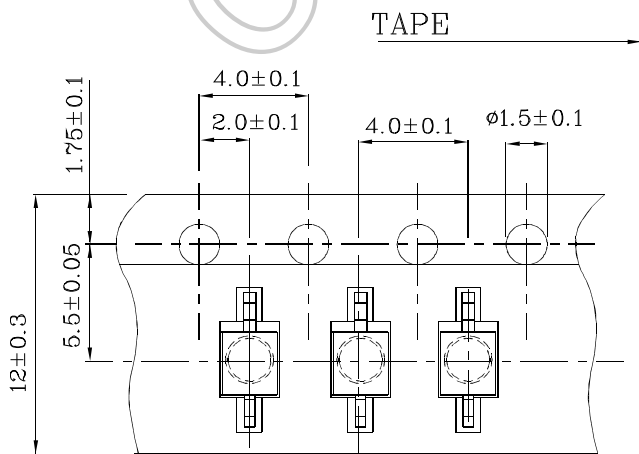


❖ Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)

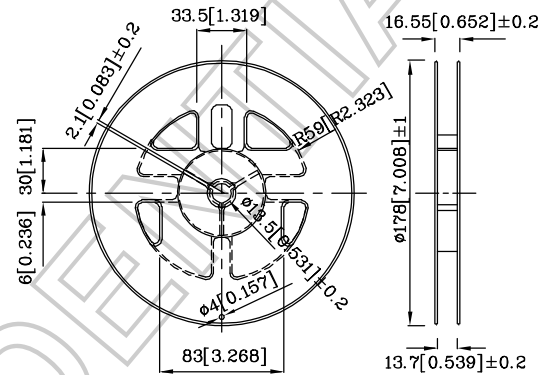


▨ Solder resist

❖ Tape Specification (Units : mm)



❖ Reel Dimension



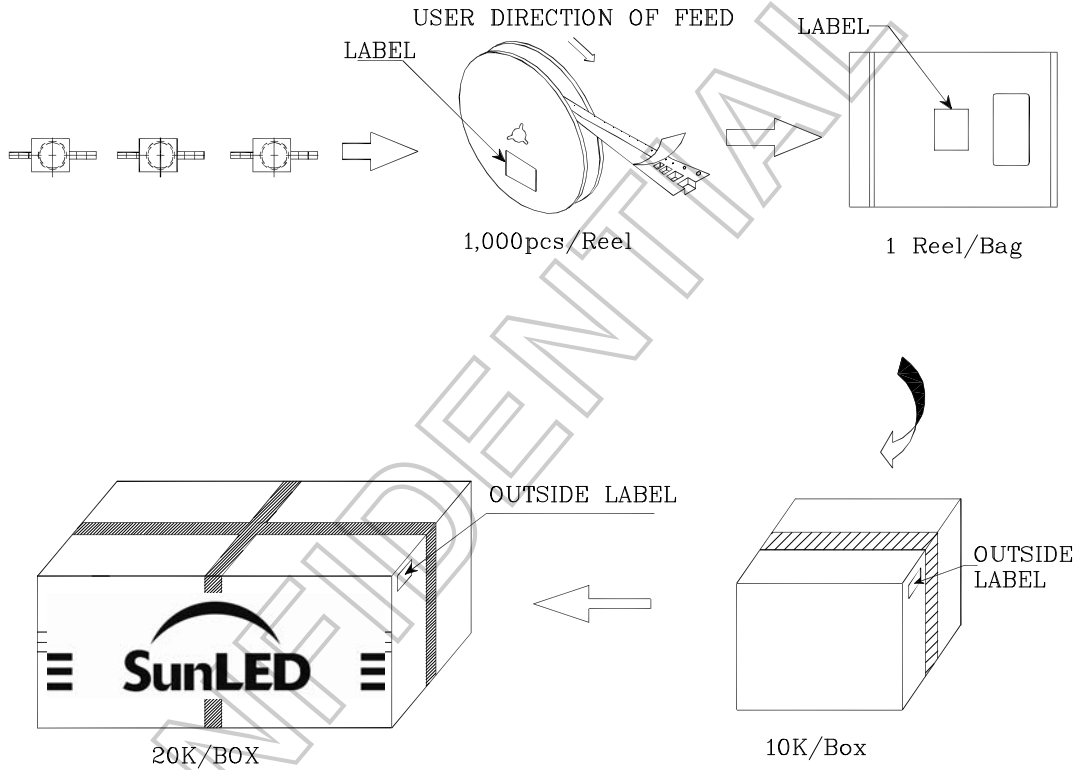

Remarks:

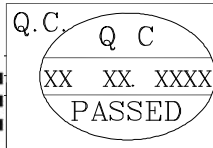

If special sorting is required (e.g. binning based on forward voltage, Luminous intensity / luminous flux, or wavelength), the typical accuracy of the sorting process is as follows:

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**

	
P/NO : XZxxx46x	
QTY : 1,000 pcs	CODE: XXX
S/N : XX	
LOT NO :	
 XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
RoHS Compliant	

**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 contents within this document may not be altered without prior consent by SunLED.
6. Additional technical notes are available at <http://www.SunLEDusa.com/TechnicalNotes.asp>

### Reliability Test Items And Conditions

The reliability of products shall be satisfied with items listed below

**Lot Tolerance Percent Defective (LTPD) : 10%**

No.	Test Item	Standards	Test Condition	Test Times / Cycles	Number of Damaged
1	Continuous operating test	-	Ta =25°C ,IF = maximum rated current*	1,000 h	0 / 22
2	High Temp. operating test	EIAJ ED-4701/100 (101)	Ta = 100°C IF = derated current at 100°C	1,000 h	0 / 22
3	Low Temp. operating test	-	Ta = -40°C, IF = maximum rated current*	1,000 h	0 / 22
4	High temp. storage test	EIAJ ED-4701/100 (201)	Ta = maximum rated storage temperature	1,000 h	0 / 22
5	Low temp. storage test	EIAJ ED-4701/100 (202)	Ta = -40°C	1,000 h	0 / 22
6	High temp. & humidity storage test	EIAJ ED-4701/100 (103)	Ta = 60°C, RH = 90%	1,000 h	0 / 22
7	High temp. & humidity operating test	EIAJ ED-4701/100 (102)	Ta = 60°C, RH = 90% IF = derated current at 60°C	1,000 h	0 / 22
8	Soldering reliability test	EIAJ ED-4701/100 (301)	Moisture soak : 30°C,70% RH, 72h Preheat : 150~180°C(120s max.) Soldering temp : 260°C(10s)	2 times	0 / 18
9	Thermal shock operating test	-	Ta = -40°C(15min) ~ 100°C(15min) IF = derated current at 100°C	1,000 cycles	0 / 22
10	Thermal shock test	-	Ta = -40°C(15min) ~ 100°C(15min)	1,000 cycles	0 / 22
11	Electric Static Discharge (ESD)	EIAJ ED-4701/100 (304)	C = 100pF , R2 = 1.5KΩ V = 3000V	Once each Polarity	0 / 22
12	Vibration test	-	a = 196m/s <sup>2</sup> , f = 100~2KHz , t = 48min for all xyz axes	4 times	0 / 22

\* : Refer to forward current vs. derating curve diagram

### Failure Criteria

Items	Symbols	Conditions	Failure Criteria
luminous Intensity	Iv	IF = 20mA	Testing Min. Value <Spec.Min.Value x 0.5
Forward Voltage	VF	IF = 20mA	Testing Max. Value ≥Spec.Max.Value x 1.2
Reverse Current	IR	VR = Maximum Rated Reverse Voltage	Testing Max. Value ≥Spec.Max.Value x 2.5
High temp. storage test	-	-	Occurrence of notable decoloration, deformation and cracking