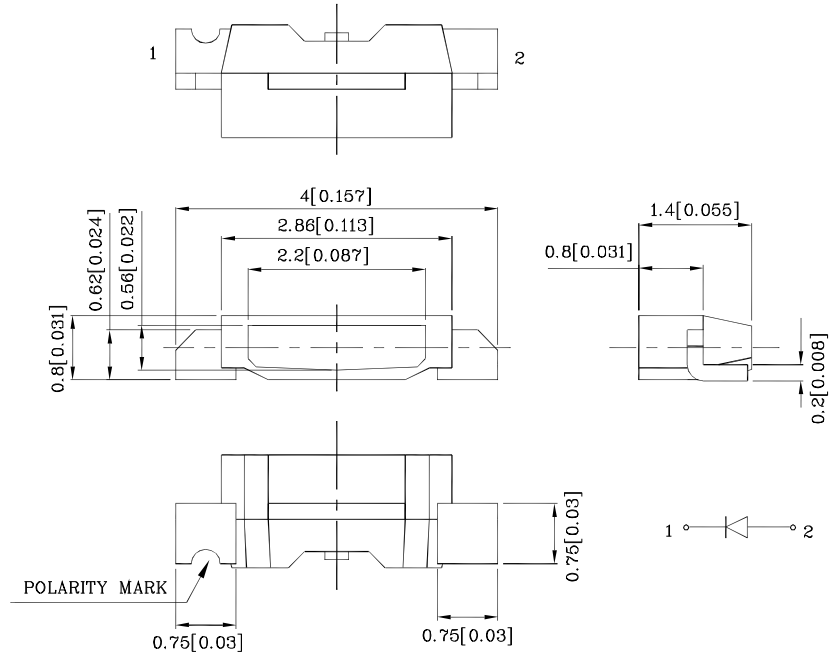# SunLED
www.SunLEDusa.com

Features

- Ideal for indication light on hand held products
- Long life and robust package
- Standard Package: 2,000pcs/ Reel
- 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 ±0.1(0.004") unless otherwise noted.
3. Specifications are subject to change without notice.

Absolute Maximum Ratings (T$_A$=25°C)		M2DG (InGaN)	Unit
Reverse Voltage	V$_R$	5	V
Forward Current	I$_F$	30	mA
Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width	i$_{FS}$	100	mA
Power Dissipation	P$_D$	120	mW
Operating Temperature	T$_A$	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +85	
Electrostatic Discharge Threshold (HBM)		450	V

Operating Characteristics (T$_A$=25°C)		M2DG (InGaN)	Unit
Forward Voltage (Typ.) (I$_F$=20mA)	V$_F$	3.2	V
Forward Voltage (Max.) (I$_F$=20mA)	V$_F$	4	V
Reverse Current (Max.) (V$_R$=5V)	I$_R$	50	uA
Wavelength of Peak Emission CIE127-2007*(Typ.) (I$_F$=20mA)	λP	520*	nm
Wavelength of Dominant EmissionCIE127-2007*(Typ.) (I$_F$=20mA)	λD	525*	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I$_F$=20mA)	△λ	35	nm
Capacitance (Typ.) (V$_F$=0V, f=1MHz)	C	100	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I$_F$=20mA) mcd		Wavelength CIE127-2007* nm λP	Viewing Angle 2θ 1/2
				min.	typ.		
XZM2DG89S-1	Green	InGaN	Water Clear	700*	1195*	520*	120°

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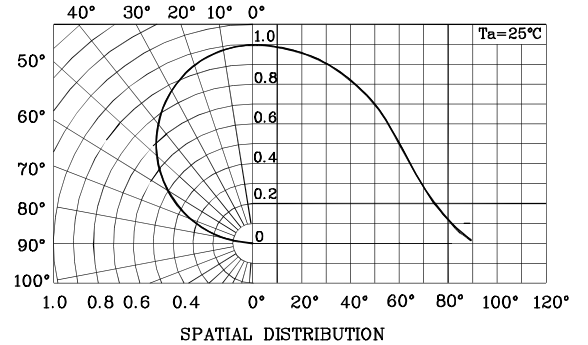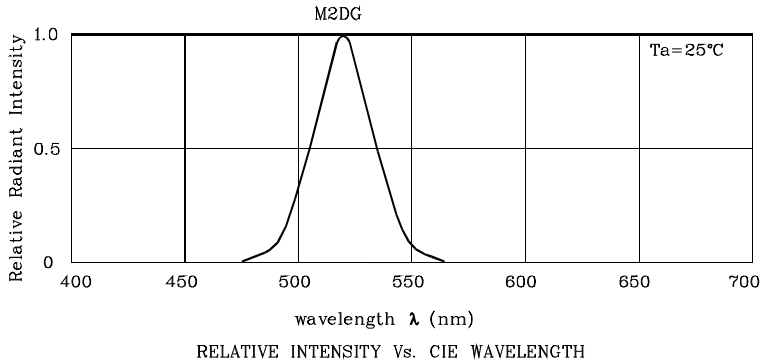
Handling Precautions

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.
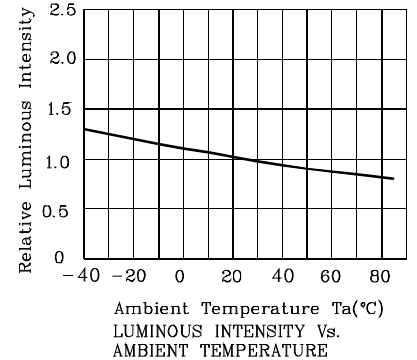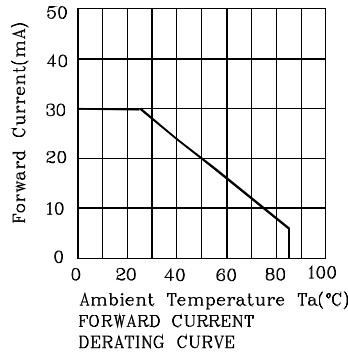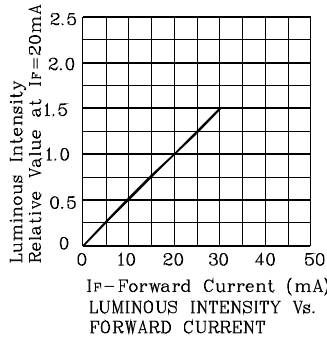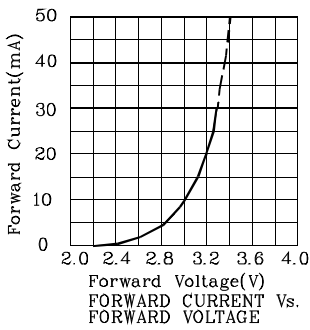
1. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.
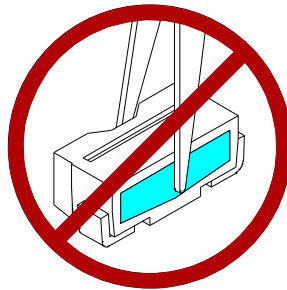
2. As silicone encapsulation is permeable to gases, some corrosive substances such as H_2S might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

M2DG

RELATIVE INTENSITY Vs. CIE WAVELENGTH

SPATIAL DISTRIBUTION

❖ **M2DG**

FORWARD CURRENT Vs.
FORWARD VOLTAGE

I$_F$–Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT

Ambient Temperature Ta(℃)
FORWARD CURRENT
DERATING CURVE

Ambient Temperature Ta(℃)
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

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

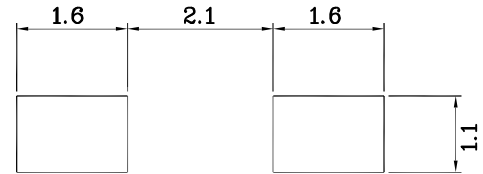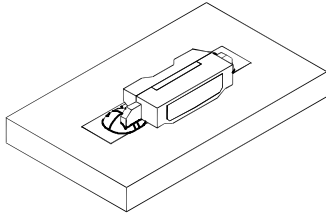Reflow Soldering Profile for SMD Products (Pb–Free Components)
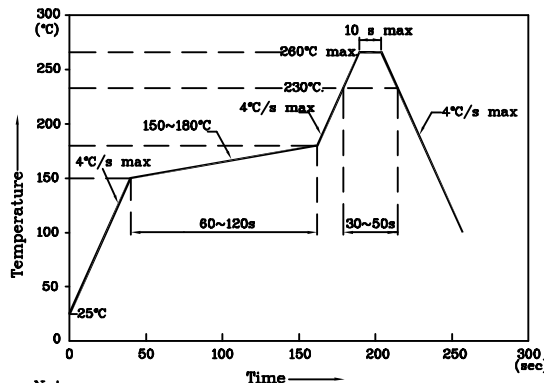
Notes:
1. Maximum soldering temperature should not exceed 260℃
2. Recommended reflow temperature: 145℃–260℃
3. Do not put stress to the epoxy resin during
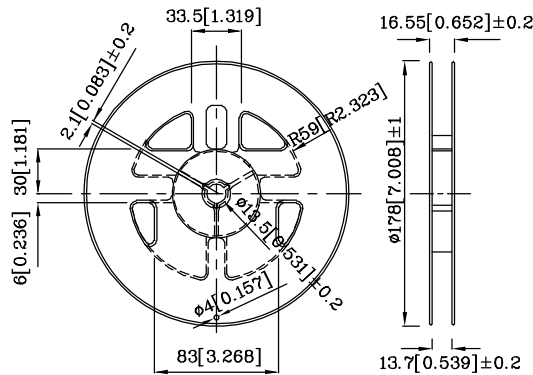   high temperatures conditions

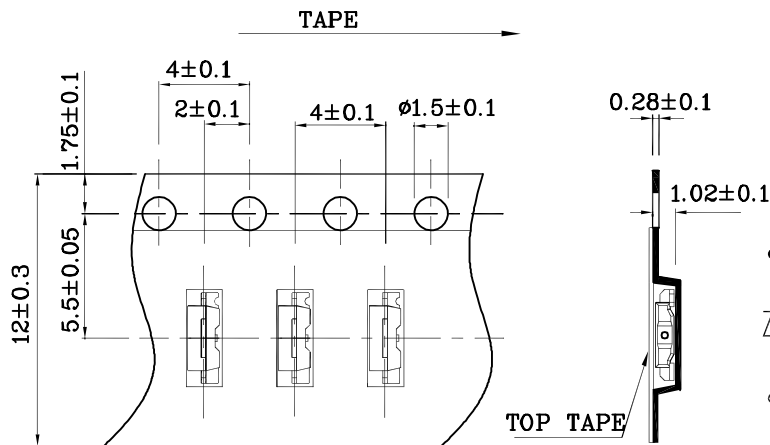❖ **The device has a single mounting surface. The device must be mounted according to the specifications.**

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

1.6   2.1   1.6

1.1

❖ **Reel Dimension**

33.5[1.319]   16.55[0.652]±0.2

2.1[0.083]±0.2   R59[R2.323]

30[1.181]   Ø13.5[0.531]±0.2

6[0.236]   Ø178[7.008]±1

Ø4[0.157]

83[3.268]   13.7[0.539]±0.2

❖ **Tape Specification (Units : mm)**

TAPE

4±0.1
2±0.1   4±0.1   Ø1.5±0.1   0.28±0.1

1.75±0.1   1.02±0.1
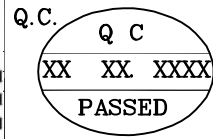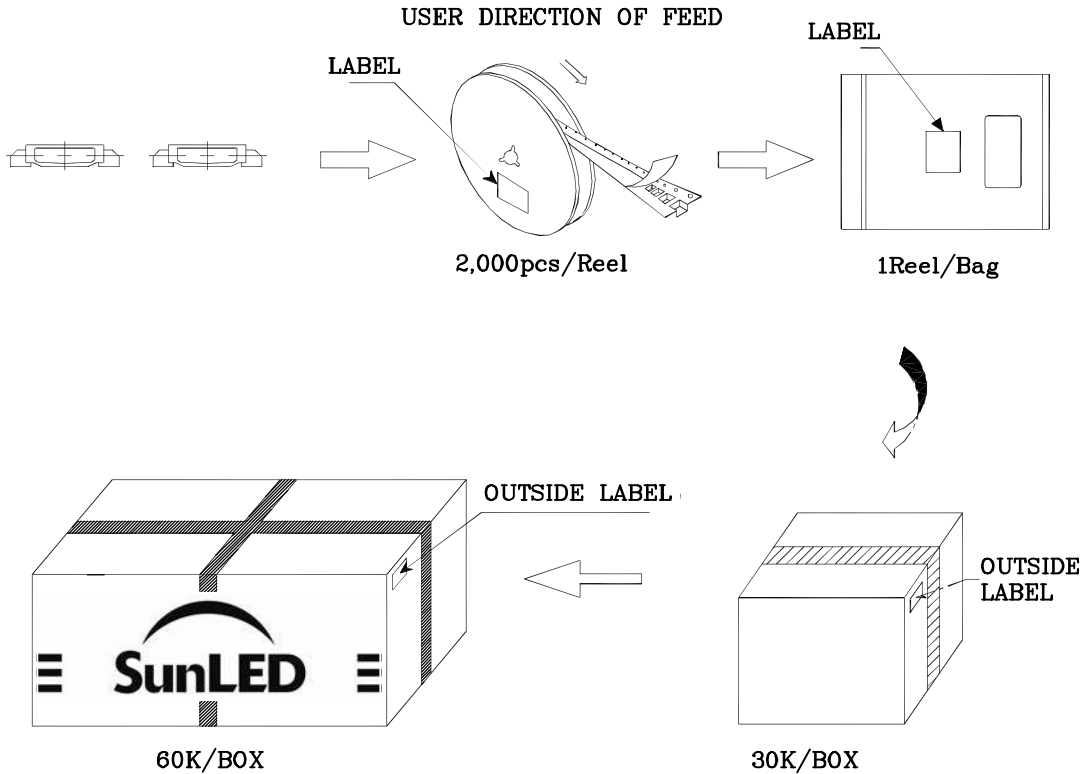
12±0.3   5.5±0.05

TOP TAPE

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

USER DIRECTION OF FEED

LABEL

LABEL

2,000pcs/Reel

1Reel/Bag

OUTSIDE LABEL

OUTSIDE LABEL

60K/BOX

30K/BOX

Q.C.

Q C

XX XX. XXXX

PASSED

P/NO : XZxx89x

QTY : 2,000 pcs   CODE: XXX

S/N : XX

LOT NO:

XXXXXXXXXXXXXXXXXXXXXX

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