

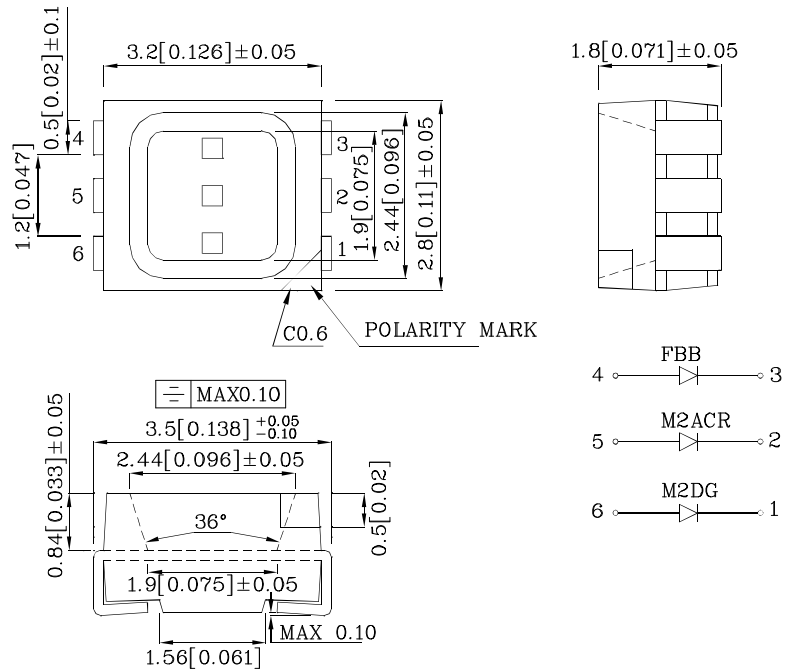
### Features

- Ideal for indication light on hand held products
- Long life and robust package
- Variety of lens types and color choices available
- 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 <sub>A</sub> =25°C)		M2DG (InGa N)	M2ACR (AlGaIn P)	FBB (InGa N)	Unit
Reverse Voltage	V <sub>R</sub>	5	5	5	V
Forward Current	I <sub>F</sub>	30	50	30	mA
Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width	i <sub>FS</sub>	100	150	100	mA
Power Dissipation	P <sub>D</sub>	120	140	120	mW
Electrostatic Discharge Threshold (HBM)		450	-	250	V
Operating Temperature	T <sub>A</sub>	-40 ~ +85			°C
Storage Temperature	T <sub>stg</sub>				

Operating Characteristics (T <sub>A</sub> =25°C)		M2DG (InGa N)	M2ACR (AlGaIn P)	FBB (InGa N)	Unit
Forward Voltage (Typ.) (I <sub>F</sub> =20mA)	V <sub>F</sub>	3.2	2.2	3.3	V
Forward Voltage (Max.) (I <sub>F</sub> =20mA)	V <sub>F</sub>	4	2.8	4	V
Reverse Current (Max.) (V <sub>R</sub> =5V)	I <sub>R</sub>	50	10	50	uA
Wavelength of Peak Emission CIE127-2007*(Typ.) (I <sub>F</sub> =20mA)	λ <sub>P</sub>	520*	640*	465*	nm
Wavelength of Dominant Emission CIE127-2007*(Typ.) (I <sub>F</sub> =20mA)	λ <sub>D</sub>	525*	625*	470*	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I <sub>F</sub> =20mA)	Δλ	35	25	22	nm
Capacitance (Typ.) (V <sub>F</sub> =0V, f=1MHz)	C	100	27	100	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I <sub>F</sub> =20mA) mcd		Wavelength CIE127-2007* λ <sub>P</sub> nm	Viewing Angle 2θ 1/2
				min.	typ.		
XZM2DGACRFBB45S-B	Green	InGaN	Water Clear	1000*	1590*	520*	130°
	Red	AlGaInP		400*	557*	640*	
	Blue	InGaN		200*	297*	465*	

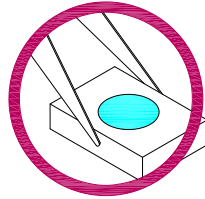
\*Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.

## Handling Precautions

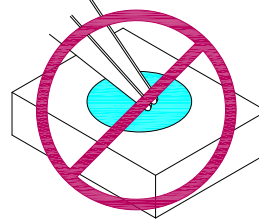
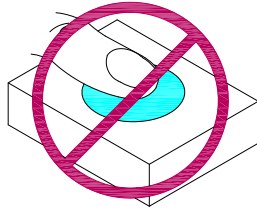
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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.

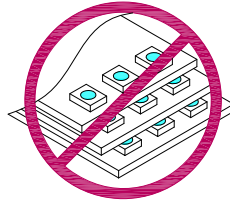
1. Handle the component along the side surfaces by using forceps or appropriate tools.



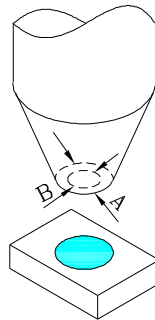
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



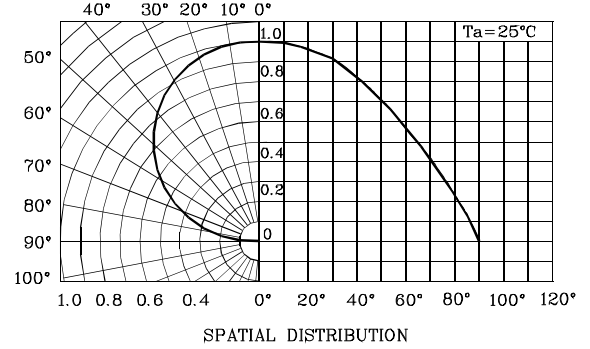
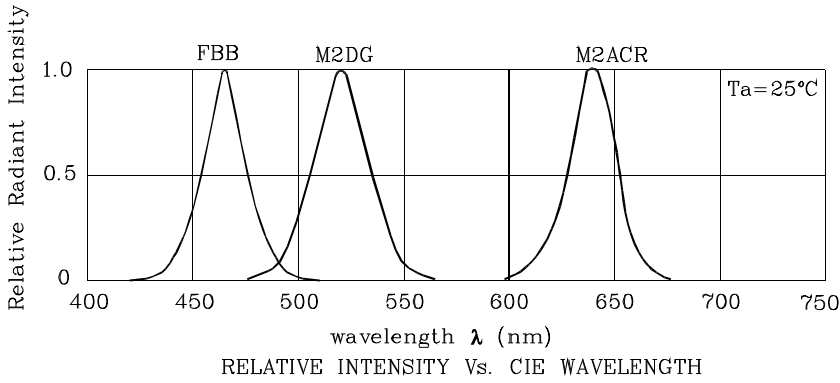
3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



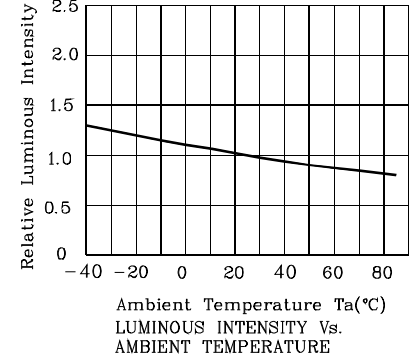
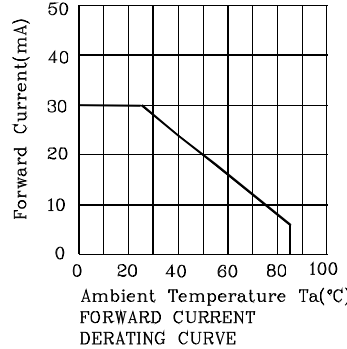
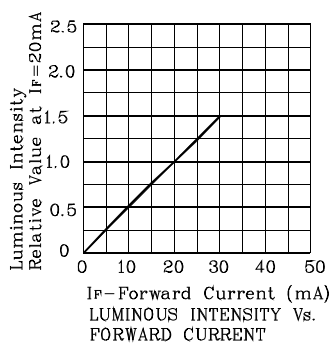
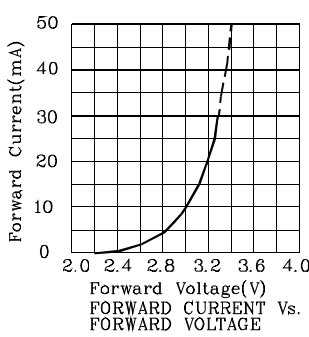
- 4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
- 4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
- 4.3. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



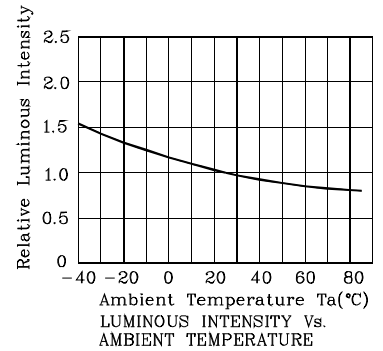
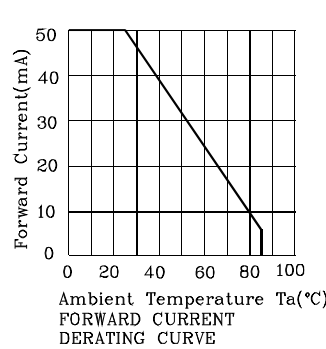
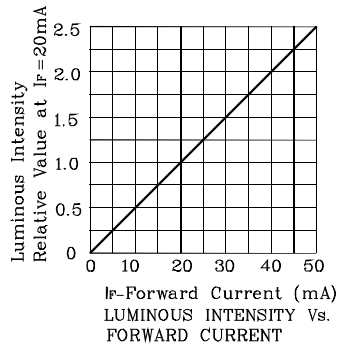
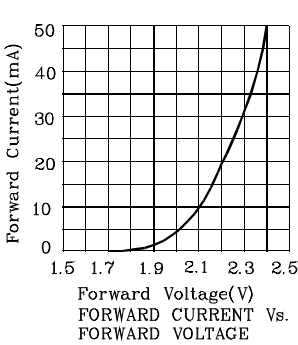
5. As silicone encapsulation is permeable to gases, some corrosive substances such as H<sub>2</sub>S might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.



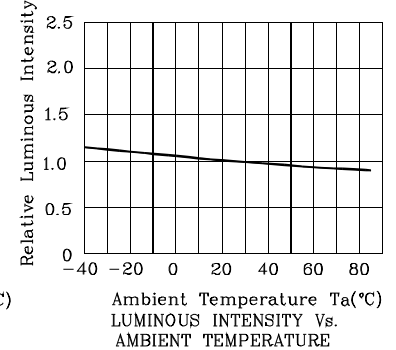
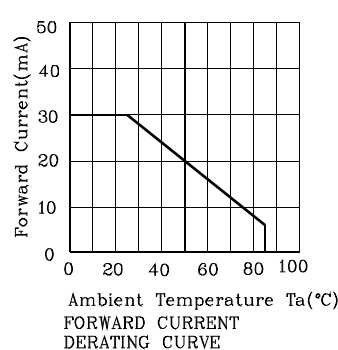
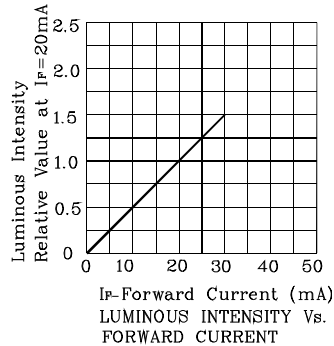
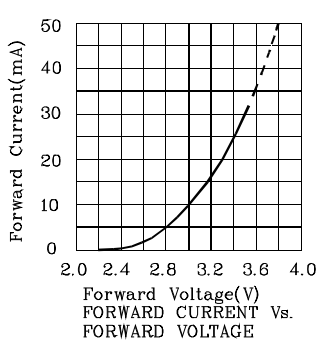
❖ **M2DG**



❖ **M2ACR**



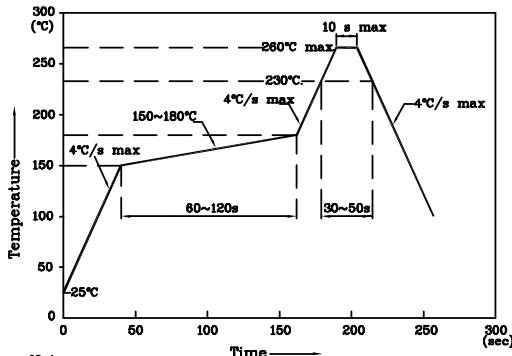
❖ **FBB**



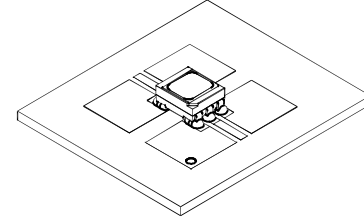
LED is recommended for reflow soldering and soldering profile is shown below.

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

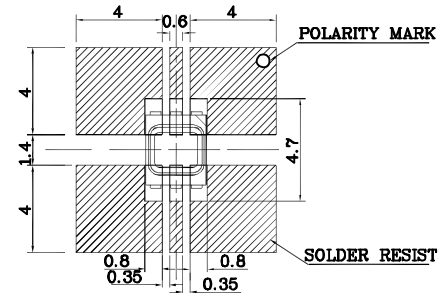
Reflow Soldering Profile for SMD Products (Pb-Free Components)



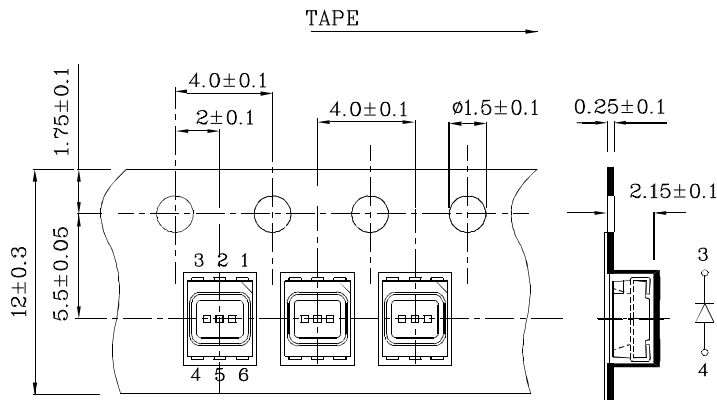
- Notes:
1. Maximum soldering temperature should not exceed 260°C
  2. Recommended reflow temperature: 145°C-260°C
  3. Do not put stress to the epoxy resin during high temperatures conditions



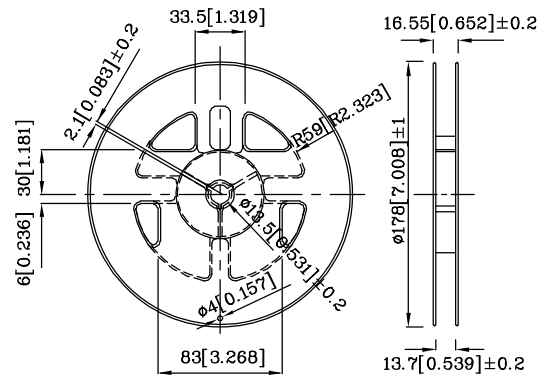
❖ Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



❖ Tape Specification (Units : mm)



❖ Reel Dimension



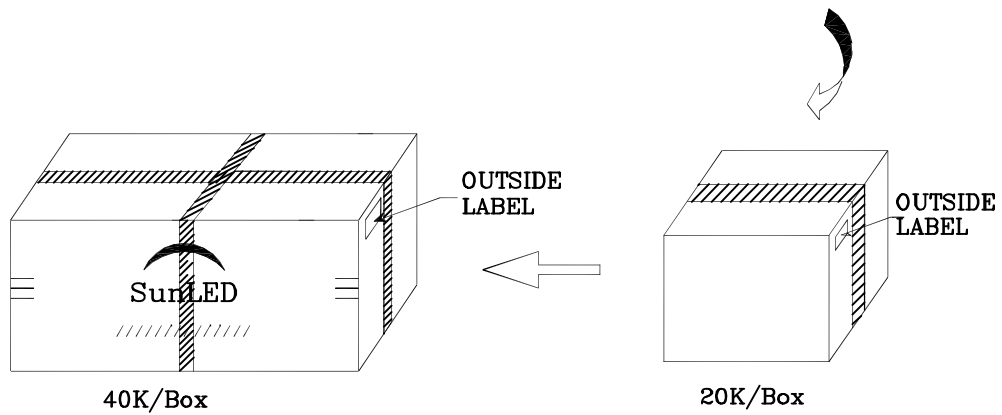
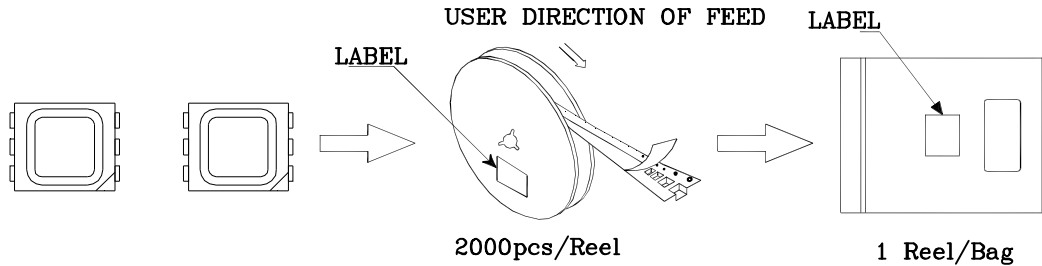

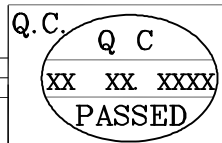
Remarks:


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**

P/NO : XZxxx45x	
QTY : 2000 pcs	CODE: XXX
S/N : XX	
LOT NO :	
 XXXXXXXXXXXXXXXXXXXXXXXXXX	
RoHS Compliant	