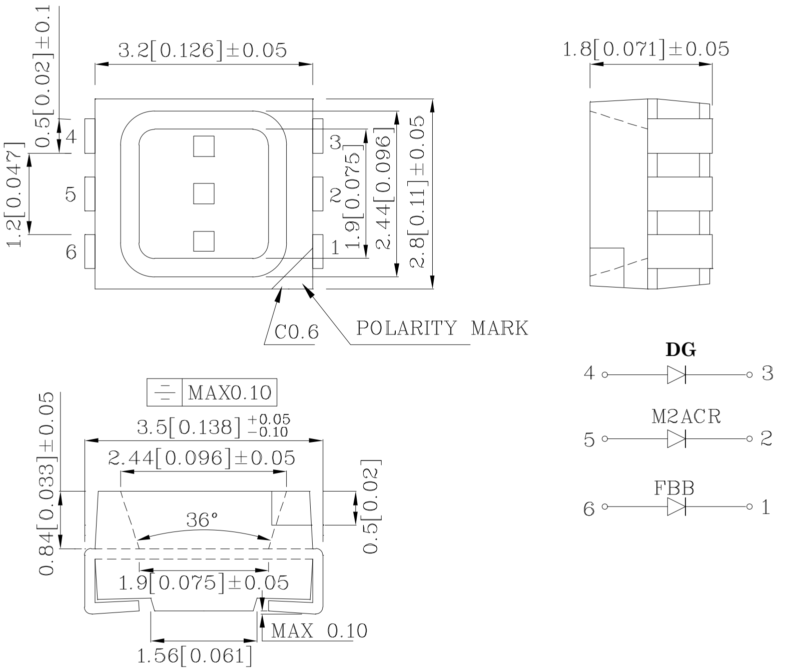
Features

- 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 ±0.2(0.008") unless otherwise noted.
3. Specifications are subject to change without notice.

Absolute Maximum Ratings (T_A=25°C)		**FBB (InGaN)**	**M2ACR (AlGaInP)**	**DG (InGaN)**	**Unit**
Reverse Voltage	V_R	5	5	5	V
Forward Current	I_F	30	50	30	mA
Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width	i_{FS}	100	150	150	mA
Power Dissipation	P_D	120	140	123	mW
Electrostatic Discharge Threshold (HBM)		250	-	450	V
Operating Temperature	T_A	-40 ~ +85			°C
Storage Temperature	Tstg				

Operating Characteristics (T_A=25°C)		**FBB (InGaN)**	**M2ACR (AlGaInP)**	**DG (InGaN)**	**Unit**
Forward Voltage (Typ.) (I_F=20mA)	V_F	3.3	2.2	3.3	V
Forward Voltage (Max.) (I_F=20mA)	V_F	4	2.8	4.1	V
Reverse Current (Max.) (V_R=5V)	I_R	50	10	50	uA
Wavelength of Peak Emission CIE127-2007*(Typ.) (I_F=20mA)	λ_P	465*	640*	515*	nm
Wavelength of Dominan Emission CIE127-2007*(Typ.) (I_F=20mA)	λ_D	470*	625*	525*	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I_F=20mA)	$\triangle\lambda$	22	25	30	nm
Capacitance (Typ.) (V_F=0V, f=1MHz)	C	100	27	45	pF

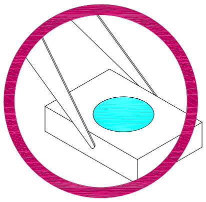
Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I_F=20mA) mcd		Wavelength CIE127-2007* λ_P nm	Viewing Angle 2θ 1/2
				min.	typ.		
XZFBBM2ACRDG45S-B	Blue	InGaN	Water Clear	200*	297*	465*	130°
	Red	AlGaInP		400*	557*	640*	
	Green	InGaN		400*	577*	515*	

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

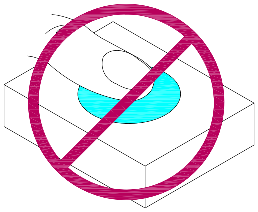
Handling Precautions

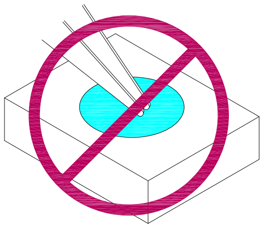
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using 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.

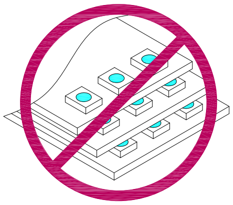


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

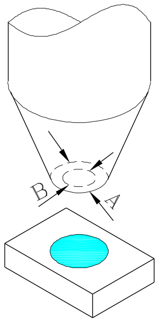




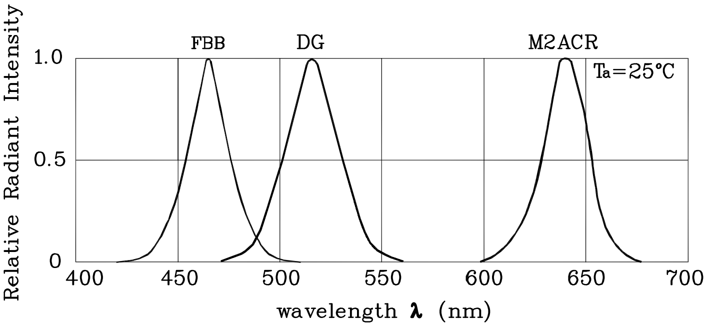
3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



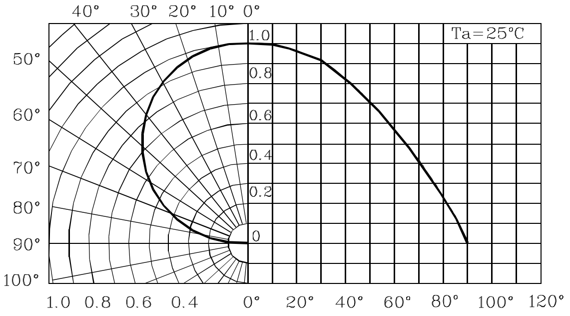
4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
4.3. The dimensions of the component must be accurately programmed in the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

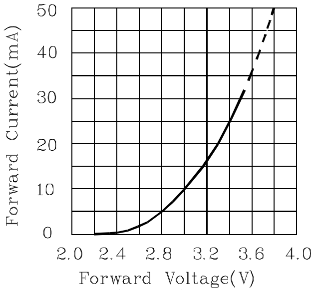


RELATIVE INTENSITY Vs. CIE WAVELENGTH

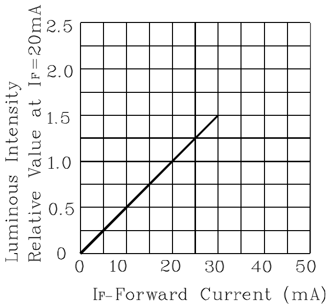


SPATIAL DISTRIBUTION

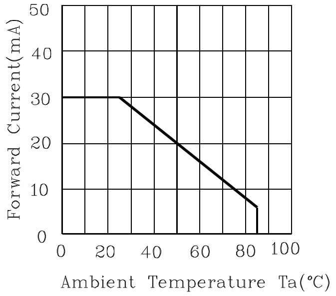
❖ FBB



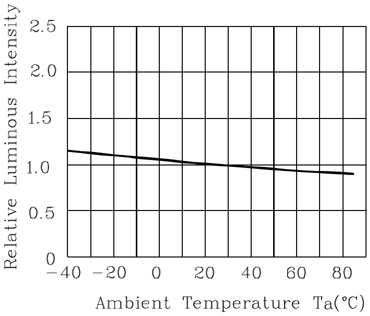
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

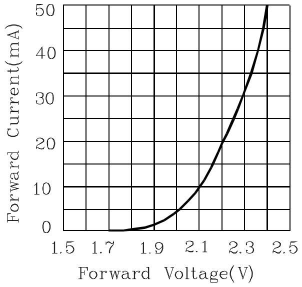


FORWARD CURRENT
DERATING CURVE

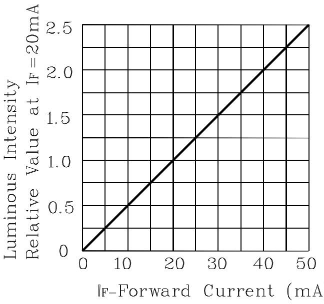


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

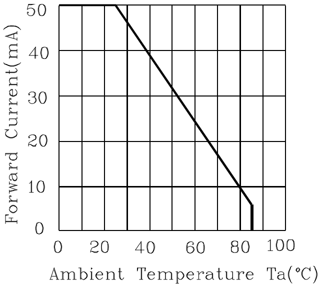
❖ M2ACR



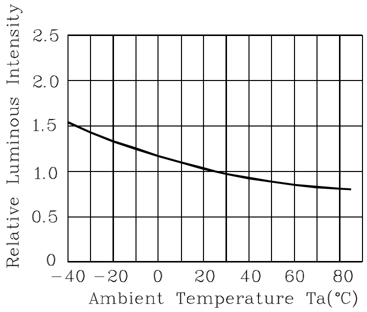
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

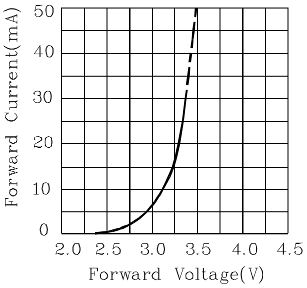


FORWARD CURRENT
DERATING CURVE

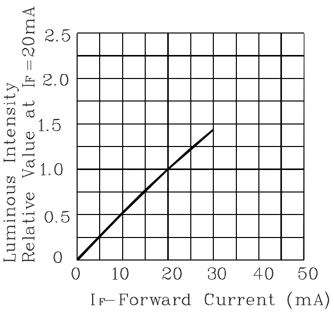


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

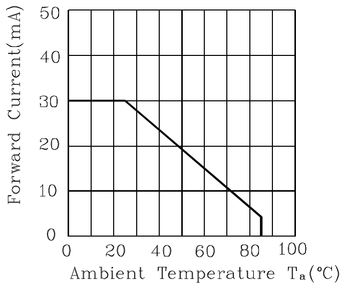
❖ DG



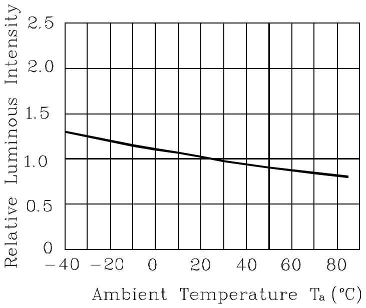
FORWARD CURRENT Vs
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



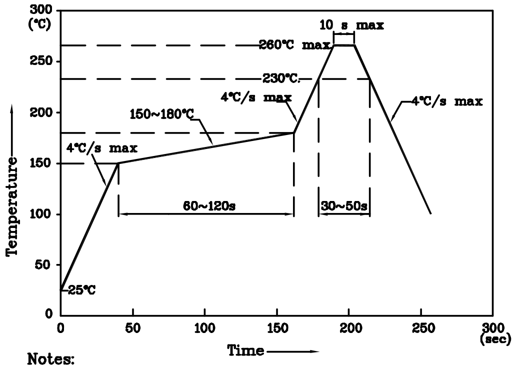
FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

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

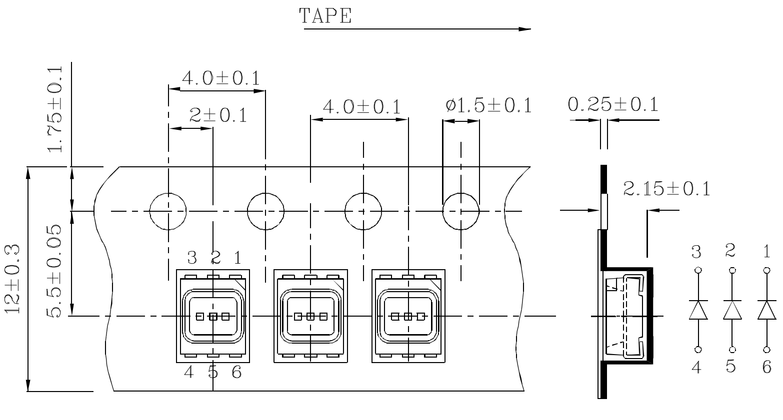
Reflow Soldering Profile for SMD Products (Pb−Free Components)



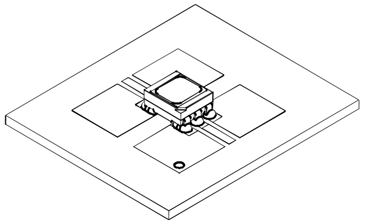
Notes:

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

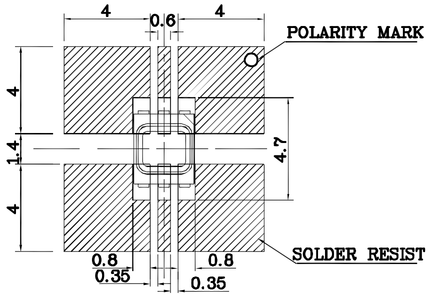
❖ Tape Specification (Units : mm)



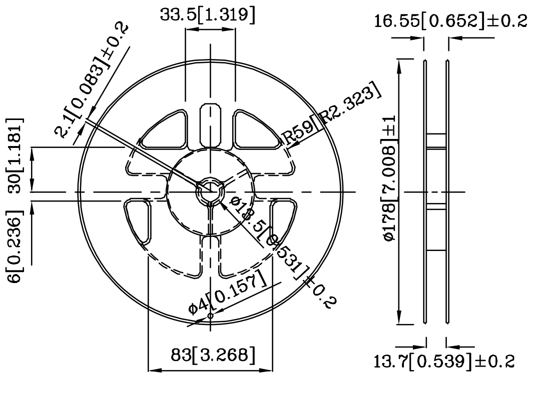
❖ The device has a single mounting surface. The device must be mounted according to the specifications.



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



❖ Reel Dimension



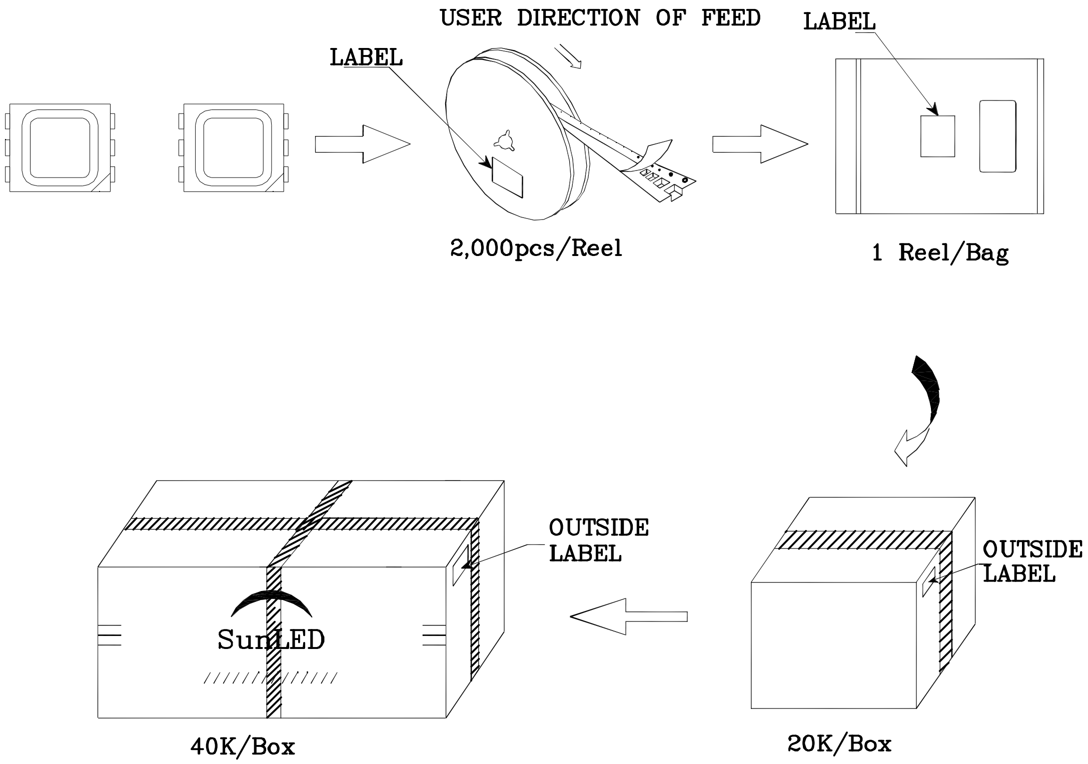
Remarks:

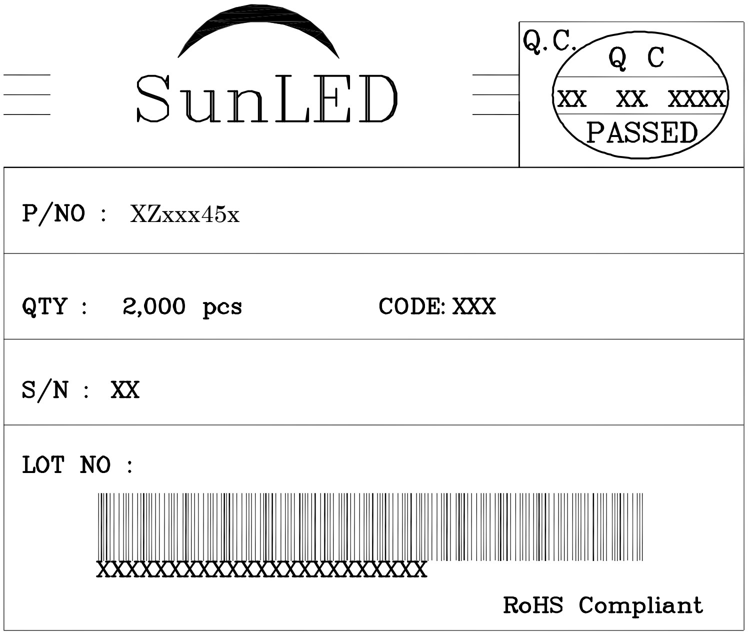
If special sorting is required (e.g. binning based on forward voltage, Luminous intensity / luminous flux, or wavelength), the typical accuracy of the sorting process is as follows:

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 : 2,000 pcs CODE: XXX

S/N : XX

LOT NO :

XXXXXXXXXXXXXXXXXXXXXXXX

RoHS Compliant