SunLED
www.SunLEDusa.com

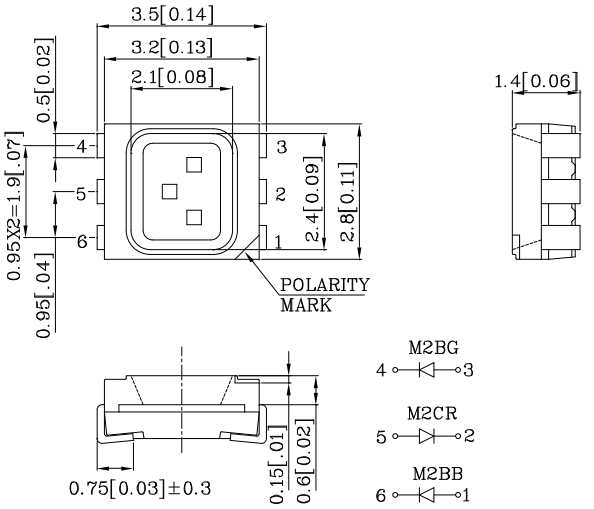
Part number: XZM2BBCRBG45S-A

3.5x2.8mm SURFACE MOUNT SMD CHIP LED

PRELIMINARY SPEC

Features

- OUTSTANDING MATERIAL EFFICIENCY.
- LOW POWER CONSUMPTION.
- ONE BLUE , ONE ORANGE AND ONE GREEN CHIPS IN ONE PACKAGE.
- CAN PRODUCE ANY COLOR IN VISIBLE SPECTRUM, INCLUDING WHITE LIGHT.
- SUITABLE FOR ALL SMT ASSEMBLY AND SOLDER PROCESS.
- AVAILABLE ON TAPE AND REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 4.
- PACKAGE: 1500PCS / REEL .
- RoHS COMPLIANT.



ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE DEVICES

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)		**M2BB (InGaN)**	**M2CR (AlInGaP)**	**M2BG (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	100	mA
Power Dissipation	P_T	111	140	111	mW
Operating Temperature	T_A	-40 ~ +85			°C
Storage Temperature	Tstg	-40 ~ +85			
Electrostatic Discharge Threshold (HBM)		1000	-	1000	V

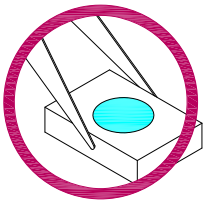
Operating Characteristics (T_A=25°C)		**M2BB (InGaN)**	**M2CR (AlInGaP)**	**M2BG (InGaN)**	**Unit**
Forward Voltage (Typ.) (I_F=20mA)	V_F	3.2	2.2	3.2	V
Forward Voltage (Max.) (I_F=20mA)	V_F	3.7	2.8	3.7	V
Reverse Current (Max.) (V_R=5V)	I_R	10	10	10	uA
Wavelength Of Peak Emission (Typ.) (I_F=20mA)	λ P	458	640	525	nm
Wavelength Of Dominant Emission (Typ.) (I_F=20mA)	λ D	465	630	535	nm
Spectral Line Full Width At Half-Maximum (Typ.) (I_F=20mA)	Δλ	22	25	39	nm
Capacitance (Typ.) (V_F=0V, f=1MHz)	C	110	27	65	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (IF=20mA) mcd		Wavelength nm λ P	Viewing Angle 2θ 1/2
				min.	typ.		
XZM2BBCRBG45S-A	Blue	InGaN	Water Clear	110	317	458	120°
	Red	AlInGaP		900	1690	640	
	Green	InGaN		650	1195	525	

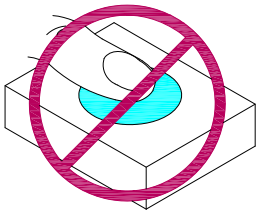
Handling Precautions

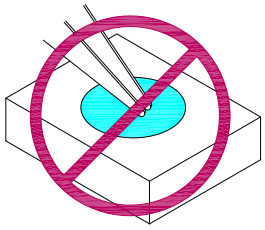
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might leads to damage and premature failure of the LED.

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

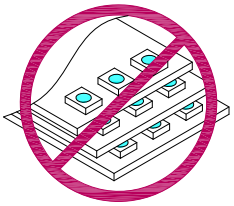


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

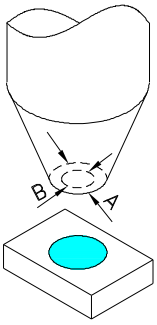


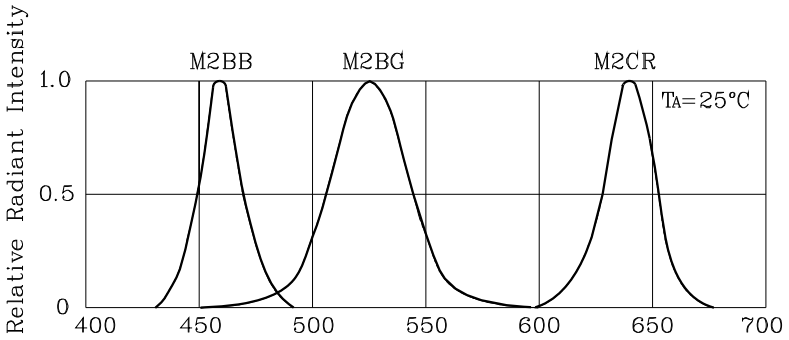


3. Do not stack together assembled PCBs containing exposed LEDs. Outside impact may scratch the silicone lens or damage the internal circuitry.



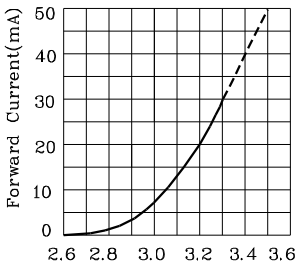
4. The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible.
5. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
6. The dimensions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



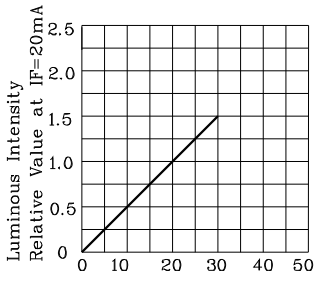


RELATIVE INTENSITY Vs. WAVELENGTH

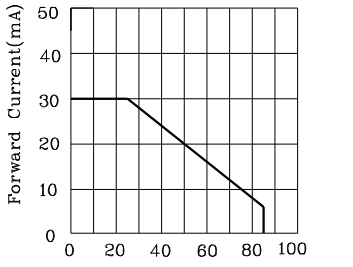
❖ M2BB



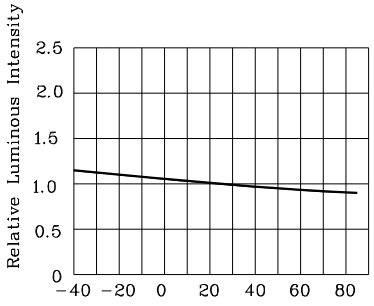
FORWARD CURRENT Vs.
FORWARD VOLTAGE



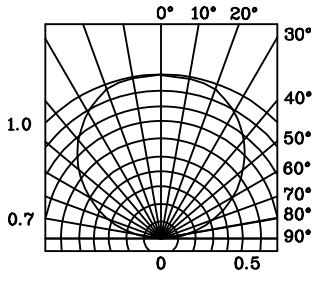
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

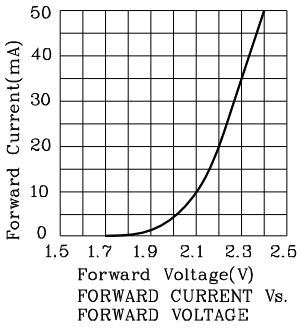


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

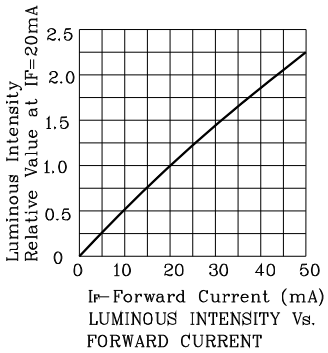


SPATIAL DISTRIBUTION

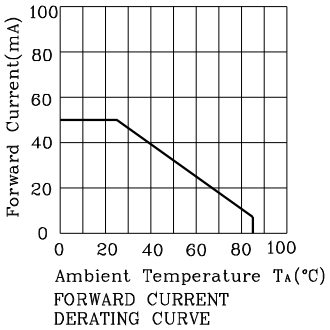
❖ M2CR



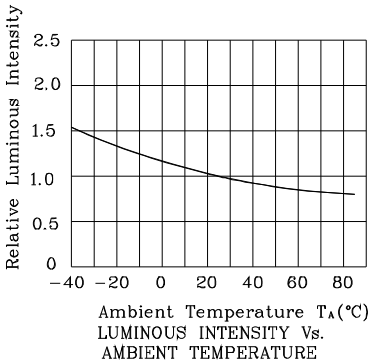
FORWARD CURRENT Vs.
FORWARD VOLTAGE



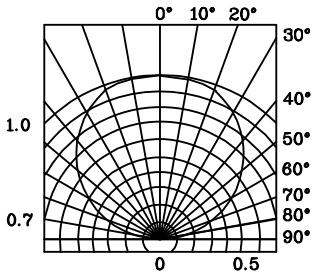
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

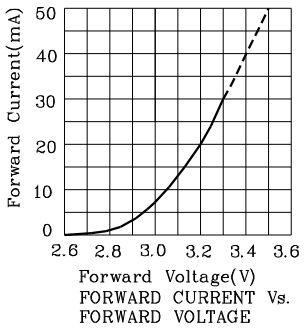


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

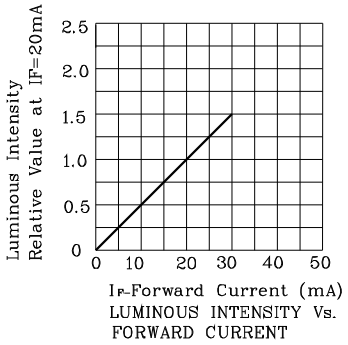


SPATIAL DISTRIBUTION

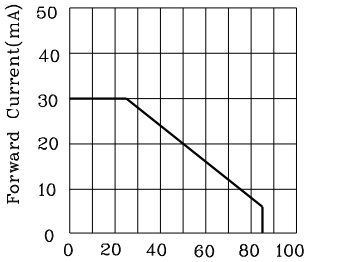
❖ M2BG



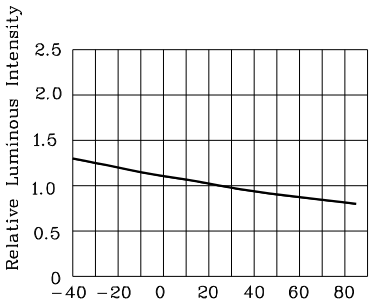
FORWARD CURRENT Vs.
FORWARD VOLTAGE



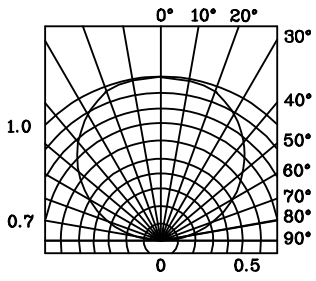
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

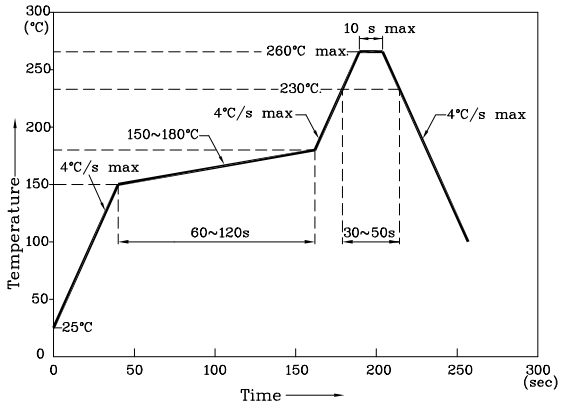


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



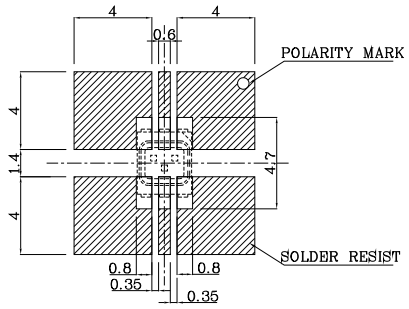
SPATIAL DISTRIBUTION

Reflow Soldering Profile For Lead-free SMT Process.

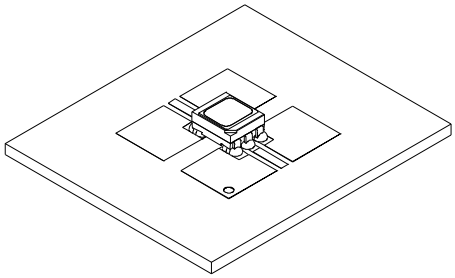


NOTES:
1. Maximum soldering temperature should not exceed 260°c.
2. Recommended reflow temperature: 145°c~260°c.
3. Do not put stress to the epoxy resin during high temperatures conditions.

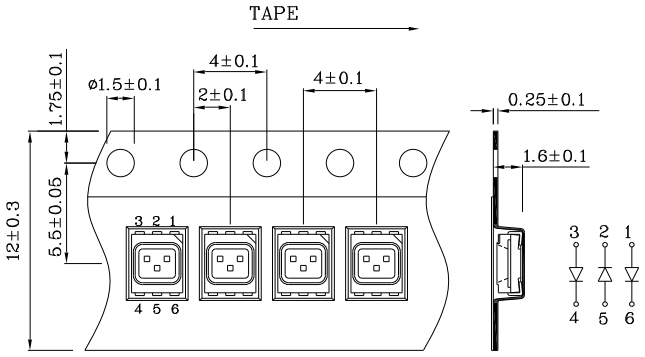
❖ Recommended Soldering Pattern (Units : mm;Tolerance: ±0.1)



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



❖ Tape Specification (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
Note: Accuracy may depend on the sorting parameters.

PACKING & LABEL SPECIFICATIONS XZM2BBCRBG45S-A