Part Number: XZCBMODG111S-B

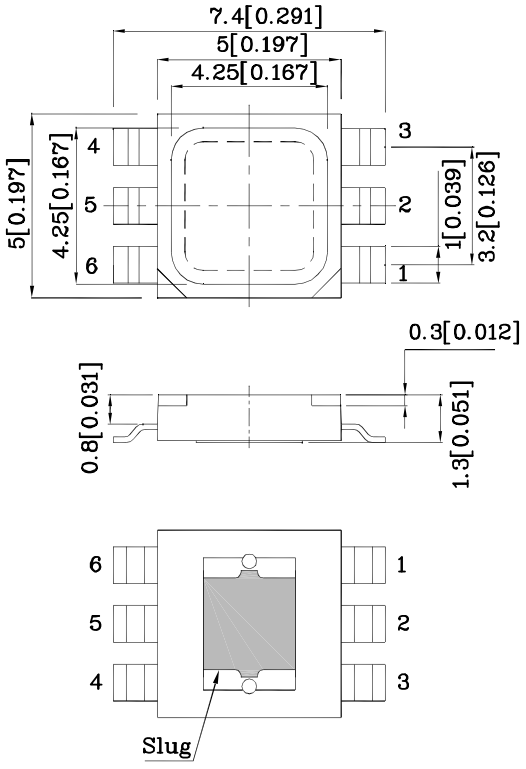
5.0mm x 5.0mm FULL-COLOR SURFACE MOUNT LED LAMP

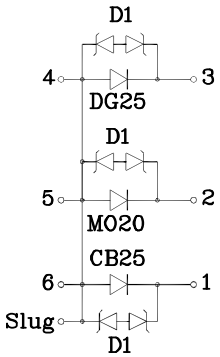
Features

- Ideal for indication light on hand held products
- Long life and robust package
- Variety of lens types and color choices available
- Package: 500pcs / reel
- Moisture sensitivity level : level 3
- RoHS compliant

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Package Schematics





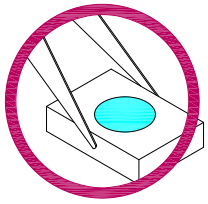
Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.15[±0.006]unless otherwise noted.
3. Specifications are subject to change without notice.

Apr 19,2011 XDSB3781 V2 Layout: Maggie L.

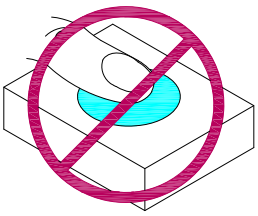
Handling Precautions

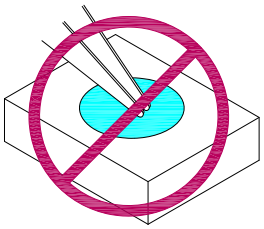
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using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

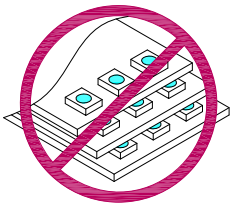


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

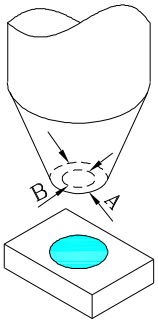




3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



4.1. The 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.
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.

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (I_F=150mA*120mA) mcd		Luminous Flux (I_F=150mA*120mA) mlm		Wavelength nm λP	Viewing Angle 2 θ 1/2 [2]
				min.	typ.	min.	typ.		
XZCBMODG111S-B	Blue	InGaN	Water Clear	700	1295	3500	5000	445	120°
	Reddish-Orange	AlGaInP		*7500	*9590	*7200	*10000	633	
	Green	InGaN		4700	6490	14000	20000	515	

Absolute Maximum Ratings at T_a=25°C

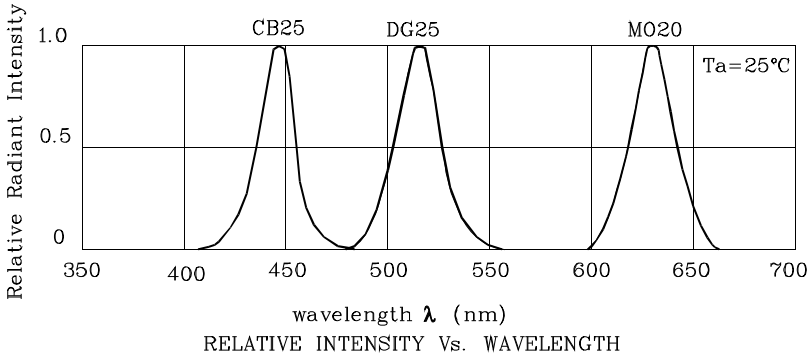
Parameter	Symbol	Device	Value	Unit	Test Conditions
Power dissipation	P_D	Blue	0.6	W	I_F=150mA I_F=120mA I_F=150mA
		Reddish-Orange	0.336		
		Green	0.6		
Junction temperature	TJ	Blue	110	°C	I_F=150mA I_F=120mA I_F=150mA
		Reddish-Orange	110		
		Green	110		
Operating Temperature	Top	Blue	-40 To +85	°C	I_F=150mA I_F=120mA I_F=150mA
		Reddish-Orange			
		Green			
Storage Temperature	Tstg	Blue	-40 To +85	°C	I_F=150mA I_F=120mA I_F=150mA
		Reddish-Orange			
		Green			
DC Forward Current [1]	I_F	Blue	150	mA	I_F=150mA I_F=120mA I_F=150mA
		Reddish-Orange	120		
		Green	150		
Peak Forward Current [2]	I_{FM}	Blue	300	mA	I_F=150mA I_F=120mA I_F=150mA
		Reddish-Orange	300		
		Green	300		
Thermal resistance	Rth j-a	Blue	220	°C/W	I_F=150mA I_F=120mA I_F=150mA
		Reddish-Orange	270		
		Green	200		
Thermal resistance	Rth j-s	Blue	25	°C/W	I_F=150mA I_F=120mA I_F=150mA
		Reddish-Orange	40		
		Green	33		
Reverse Current	I_R	Blue	10	uA	V_R=5V
		Reddish-Orange	10		
		Green	10		

Notes:
1. Results from mounting on Aluminum Board.
2. 1/10 Duty Cycle, 0.1ms Pulse Width.

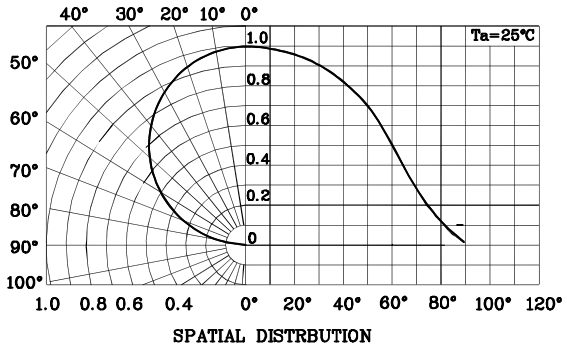
Electrical / Optical Characteristics at T_a=25°C

Parameter	Symbol	Device	Value			Unit
			Min.	Typ.	Max.	
Wavelength at peak emission IF=150mA	λpeak	Blue		445		nm
Wavelength at peak emission IF=120mA		Reddish-Orange		633		
Wavelength at peak emission IF=150mA		Green		515		
Dominant Wavelength IF=150mA	λdom [1]	Blue		450		nm
Dominant Wavelength IF=120mA		Reddish-Orange		624		
Dominant Wavelength IF=150mA		Green		525		
Spectral Line Half-width IF=150mA	Δλ1/2	Blue		20		nm
Spectral Line Half-width IF=120mA		Reddish-Orange		30		
Spectral Line Half-width IF=150mA		Green		30		
Forward Voltage IF=150mA	VF [2]	Blue	3.0	3.5	4.0	V
Forward Voltage IF=120mA		Reddish-Orange	2.0	2.3	2.8	
Forward Voltage IF=150mA		Green	3.0	3.5	4.0	
Reverse Voltage	VR	Blue		5		V
		Reddish-Orange		5		
		Green		5		
Temperature coefficient of λpeak IF=150mA, -10°C≤ T≤100°C	TCλpeak	Blue		0.12		nm/°C
Temperature coefficient of λpeak IF=120mA, -10°C≤ T≤100°C		Reddish-Orange		0.09		
Temperature coefficient of λpeak IF=150mA, -10°C≤ T≤100°C		Green		0.13		
Temperature coefficient of λdom IF=150mA, -10°C≤ T≤100°C	TCλdom	Blue		0.1		nm/°C
Temperature coefficient of λdom IF=120mA, -10°C≤ T≤100°C		Reddish-Orange		0.03		
Temperature coefficient of λdom IF=150mA, -10°C≤ T≤100°C		Green		0.11		
Temperature coefficient of VF IF=150mA, -10°C≤ T≤100°C	TCV	Blue		-2.3		mV/°C
Temperature coefficient of VF IF=120mA, -10°C≤ T≤100°C		Reddish-Orange		-2.7		
Temperature coefficient of VF IF=150mA, -10°C≤ T≤100°C		Green		-3.9		

Notes:
1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.2V.

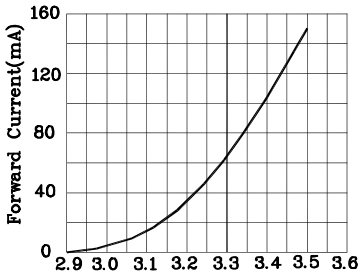


RELATIVE INTENSITY Vs. WAVELENGTH

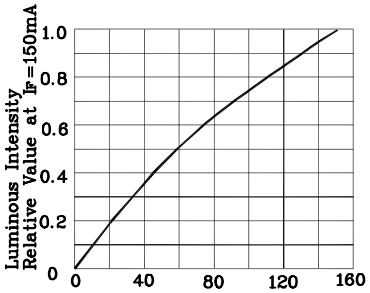


SPATIAL DISTRBUTION

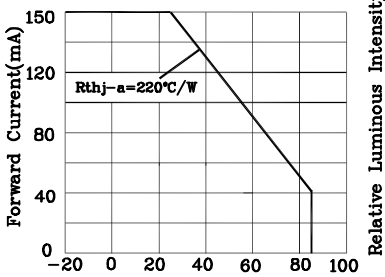
❖ CB25



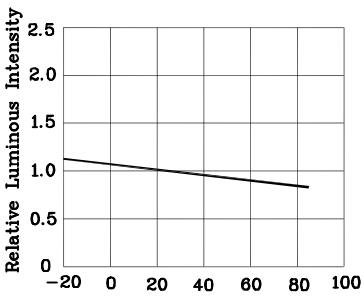
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

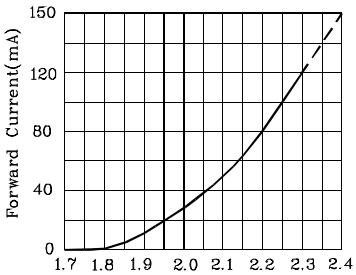


FORWARD CURRENT
DERATING CURVE

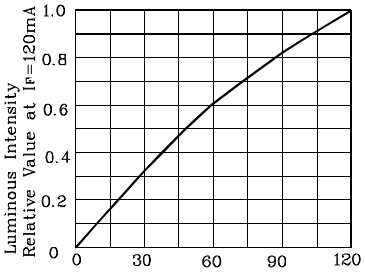


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

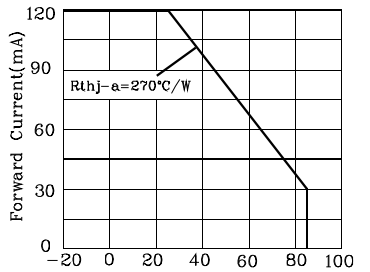
❖ MO20



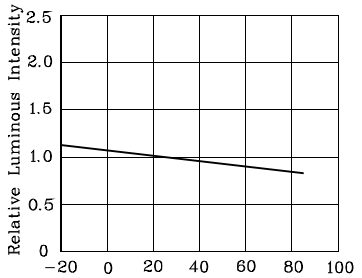
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

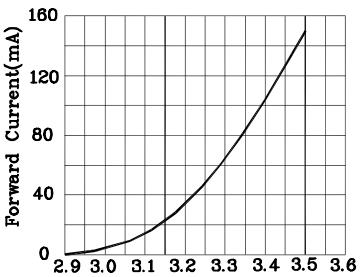


FORWARD CURRENT
DERATING CURVE

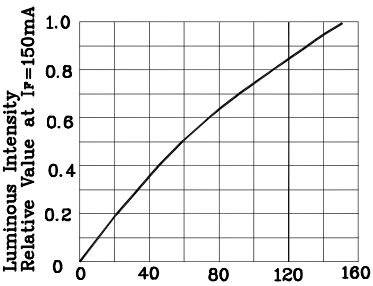


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

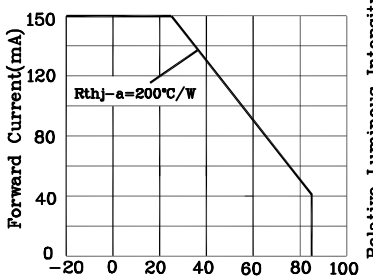
❖ DG25



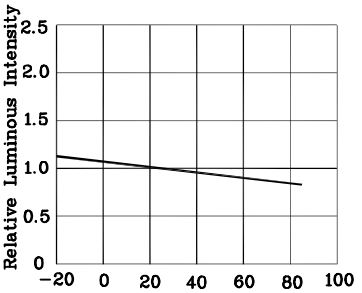
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



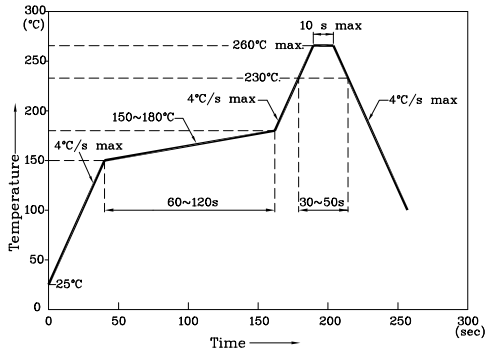
FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

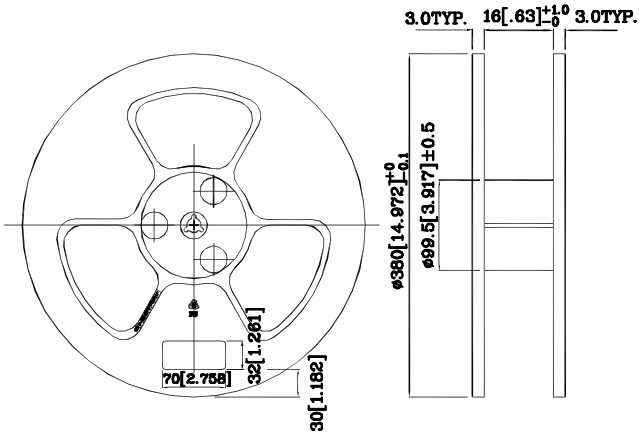
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

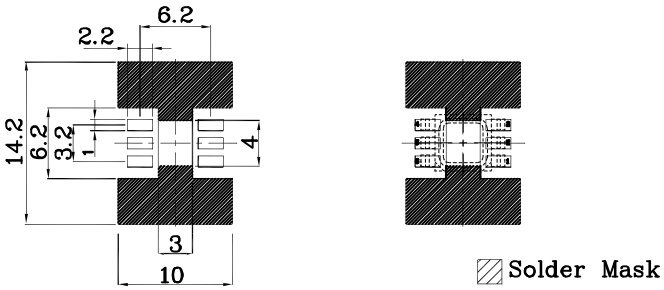


NOTES:
1. Maximum soldering temperature should not exceed 260°c.
2. Recommended reflow temperature: 145°c-260°c.
3. Do not put stress to the epoxy resin during high temperatures conditions.

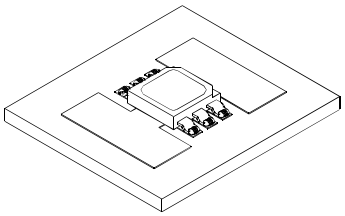
Reel Dimension



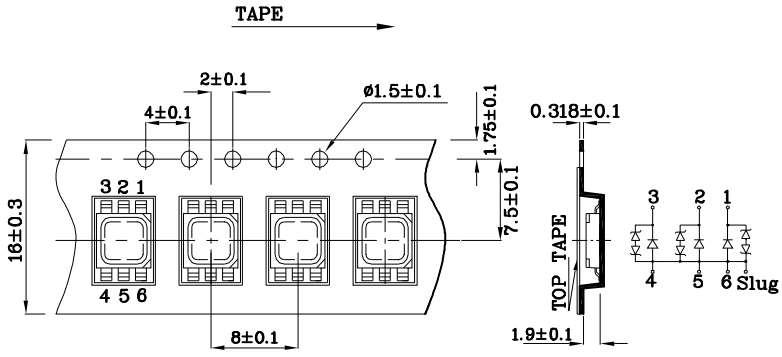
❖ **Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)**



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



❖ **Tape Specification (Units : mm)**



PACKING & LABEL SPECIFICATIONS