



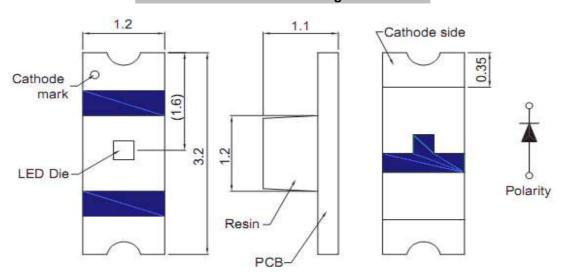




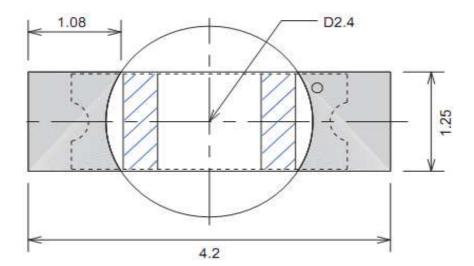
#### **Applications**

- Interior automotive lighting
   Optical indicators
- Communication Products
  - Backlighting
    - Toys

#### **Technical Drawing**



### **Recommended Soldering Pattern**



#### Notes:

All dimensions in mm tolerance is  $\pm 0.1$ mm unless otherwise noted.

# SMT Top View LED Blue

Part No.: **M11B9013** 

DRW:	Wang	CHKD	Wung	MATL:	Chui	DATE	03.12.2009
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### **Absolute Maximum Ratings**

Ta=25°C

Item	Symbol	InGaN	Unit
Power Dissipation	$P_{D}$	78	mW
DC Forward Current	I <sub>F</sub>	20	mA
Plused Forward Current	I <sub>FP</sub> *	80	mA
Reverse Voltage	$V_R$	5	V
Operating Temperature	T <sub>OP</sub>	-30 to 80	°C
Storage Temperature	$T_{ST}$	-40 to 85	°C

<sup>\* 0.1</sup> msec pulse, 10% duty cycle

## **Electrical / Optical Characteristics**

I<sub>F</sub>=5mA Ta=25°C

Ermitting Color		Blue						
Material		InGaN						
Forward Voltage	typ.	2.8	$V_{F}$					
Forward voilage	max.	3.15	$V_{F}$					
Wavelength	λD	472	nm					
	λP	470	nm					
typ.	Δλ	40	nm					
Color Temperature	min.		K					
Color remperature	max.		K					
Luminous Intensity *	min.	9	mcd					
Luminous intensity	typ.	25	mcd					
Reverse Current	max.		μA					
Viewing Angle	2Θ1/2	140						

<sup>\*</sup> Per NIST standards

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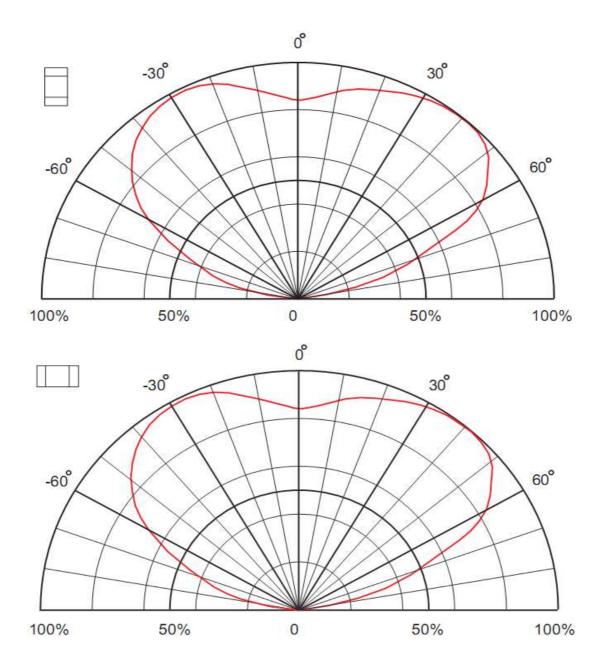








### **Directive Characteristics**



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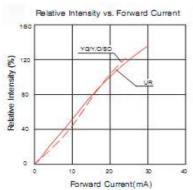


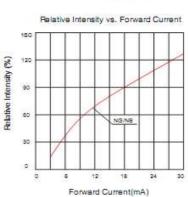


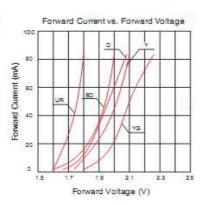


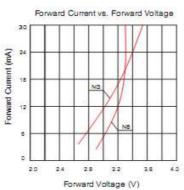


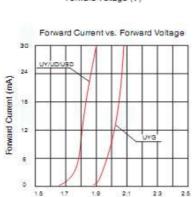
#### **Curvs**



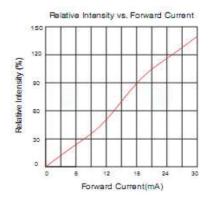


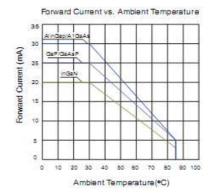






Forward Voltage (V)





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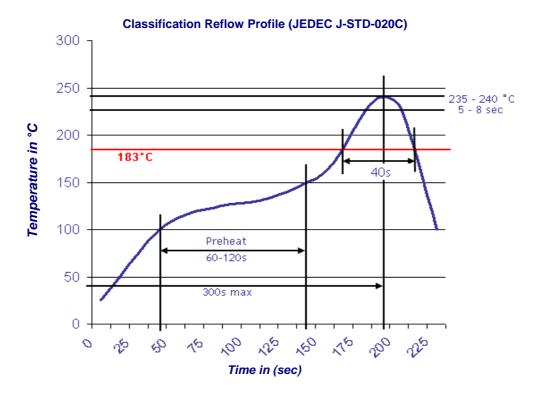






### **Solder Condition**

#### Lead Free Solder



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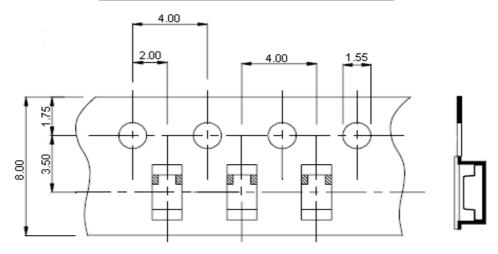




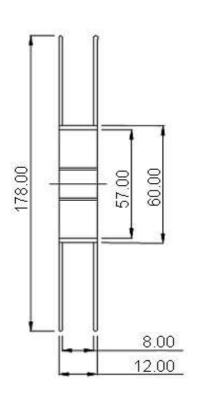


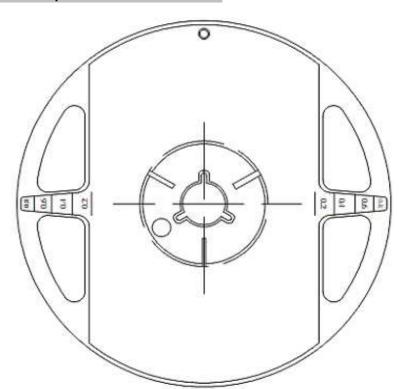


## **Packing Specifications**



### **Reel Specifications**

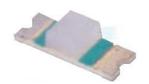




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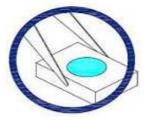




#### **Handling Precautions**

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although ist 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 th 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 surfance. 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.



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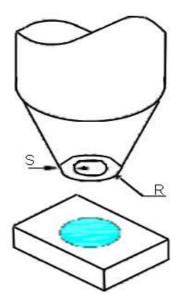








- 4. The outer diameter of the TOP LED pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible.
- 5. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
- 6.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



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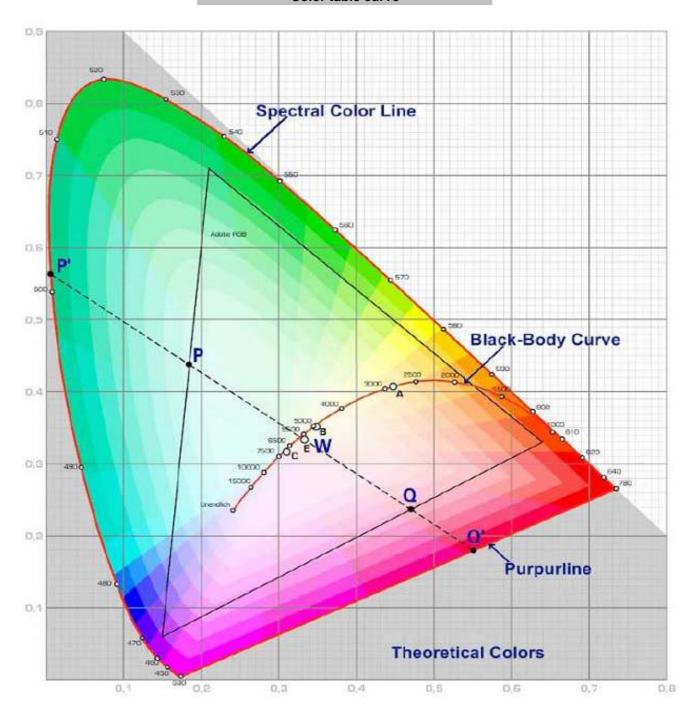








#### Color table curve



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