

## **OVAL SOLID STATE LAMP**

Part Number: WP5603QBDL/SD/G Blue



**ATTENTION** OBSERVE PRECAUTIONS FOR HANDLING **ELECTROSTATIC** DISCHARGE SENSITIVE **DEVICES** 

### **Features**

- Outstanding material efficiency.
- Reliable and rugged.
- RoHS compliant.

### Description

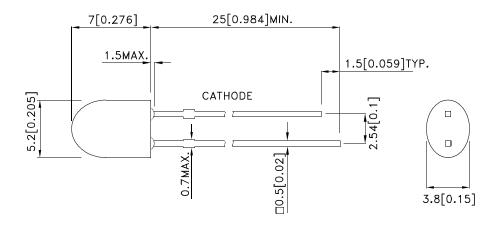
The Blue source color devices are made with InGaN Light Emitting Diode.

Static electricity and surge damage the LEDS.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

## **Package Dimensions**



- 1. All dimensions are in millimeters (inches).
- 2. Tolerance is  $\pm 0.25(0.01")$  unless otherwise noted.
- Lead spacing is measured where the leads emerge from the package.
   The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

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## **Selection Guide**

Part No.	Dice	Lens Type	lv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Тур.	201/2
WP5603QBDL/SD/G	Blue (InGaN)	Blue Semi Diffused	700	1200	80°(H) 40°(V)

### Notes:

- 1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value. 2. Luminous intensity/ luminous Flux: +/-15%.

## Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Тур.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue	461		nm	IF=20mA
λD [1]	Dominant Wavelength	Blue	465		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Blue	25		nm	IF=20mA
С	Capacitance	Blue	100		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Blue	3.3	4	V	IF=20mA
IR	Reverse Current	Blue		50	uA	VR = 5V

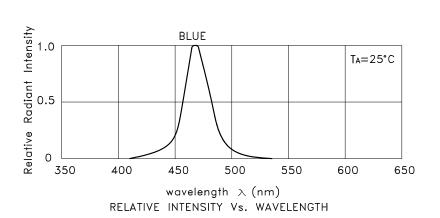
- 1.Wavelength: +/-1nm.
- 2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

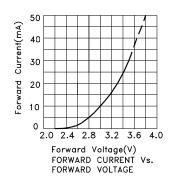
Parameter	Blue	Units	
Power dissipation	120	mW	
DC Forward Current	30	mA	
Peak Forward Current [1]	150	mA	
Reverse Voltage	5	V	
Operating/Storage Temperature	-40°C To +85°C		
Lead Solder Temperature [2]	245°C For 3 Seconds		
Lead Solder Temperature [3]	245°C For 5 Seconds		

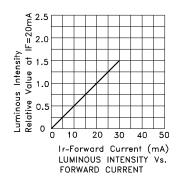
- 1. 1/10 Duty Cycle, 0.1ms Pulse Width.
  2. 2mm below package base.
  3. 5mm below package base.

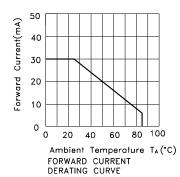
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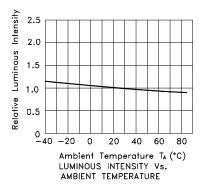


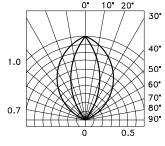
Blue WP5603QBDL/SD/G







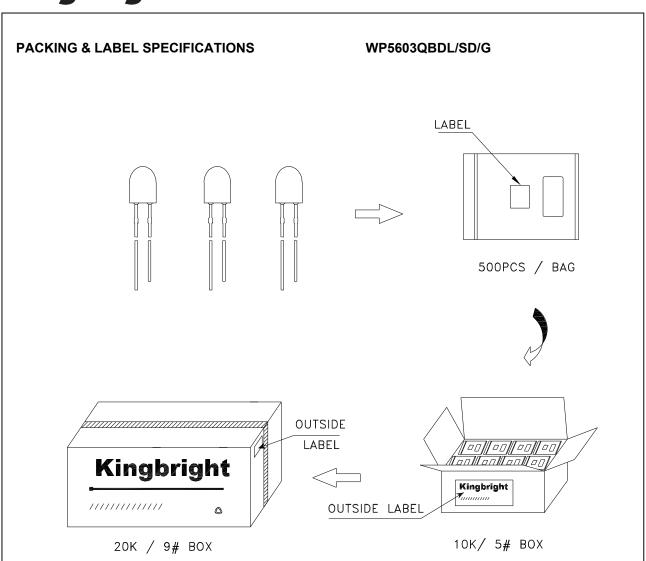


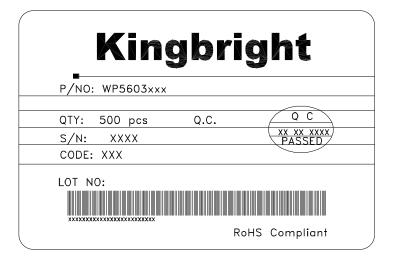


SPATIAL DISTRIBUTION

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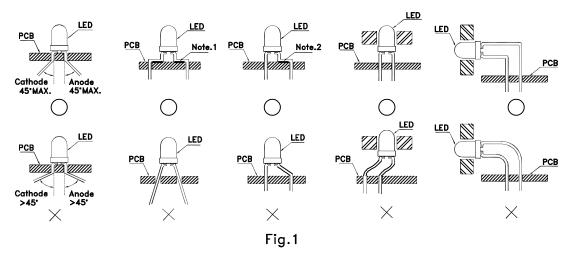




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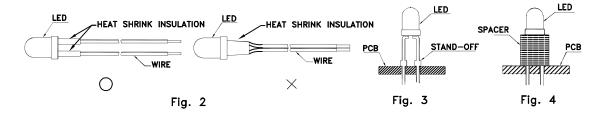
### **PRECAUTIONS**

1. The lead pitch of the LED must match the pitch of the mounting holes on the PCB during component placement. Lead—forming may be required to insure the lead pitch matches the hole pitch. Refer to the figure below for proper lead forming procedures. (Fig. 1)



"() " Correct mounting method "imes" Incorrect mounting method

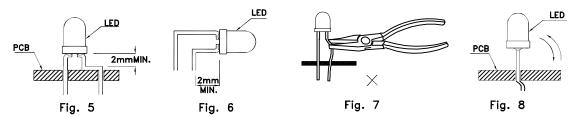
- 2. When soldering wire to the LED, use individual heat—shrink tubing to insulate the exposed leads to prevent accidental contact short—circuit. (Fig.2)
- 3.Use stand—offs (Fig.3) or spacers (Fig.4) to securely position the LED above the PCB.



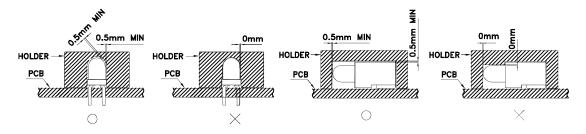
- 4. Maintain a minimum of 2mm clearance between the base of the LED lens and the first lead bend. (Fig. 5 and 6)
- 5. During lead forming, use tools or jigs to hold the leads securely so that the bending force will not be transmitted to the LED lens and its internal structures. Do not perform lead forming once the component has been mounted onto the PCB. (Fig. 7)

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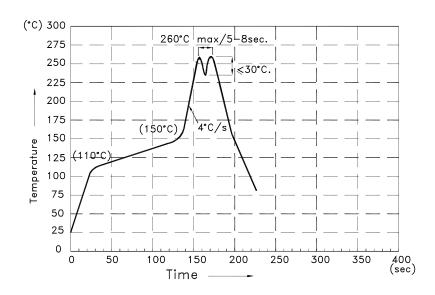
6. Do not bend the leads more than twice. (Fig. 8)



7. During soldering, component covers and holders should leave clearance to avoid placing damaging stress on the LED during soldering.



- 8. The tip of the soldering iron should never touch the lens epoxy.
- 9. Through—hole LEDs are incompatible with reflow soldering.
- 10. If the LED will undergo multiple soldering passes or face other processes where the part may be subjected to intense heat, please check with Kingbright for compatibility.
- 11. Recommended Wave Soldering Profile for Kingbright Thru—Hole Products



### NOTES:

- 1.Recommend the wave temperature 245°C $\sim$ 260°C.The maximum soldering temperature should be less than 260°C.
- 2.Do not apply stress on epoxy resins when temperature is over  $85^{\circ}\text{C}.$
- 3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
- 4.During wave soldering, the PCB top-surface temperature should be kept below 105°C.
- 5.No more than once.

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