

Part Number: WP7677C2QBC/D



Technical Data



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Descriptions

- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded

Features:

- *High Luminance output.
- *Design for High Current Operation.
- *Uniform Color.
- *Low Power Consumption.
- *Low Thermal Resistance.
- *Low Profile.
- *Packaged in tubes for use with automatic insertion equipment.
- *Soldering methods: Wave soldering.
- *RoHS Compliant.

Benefits:

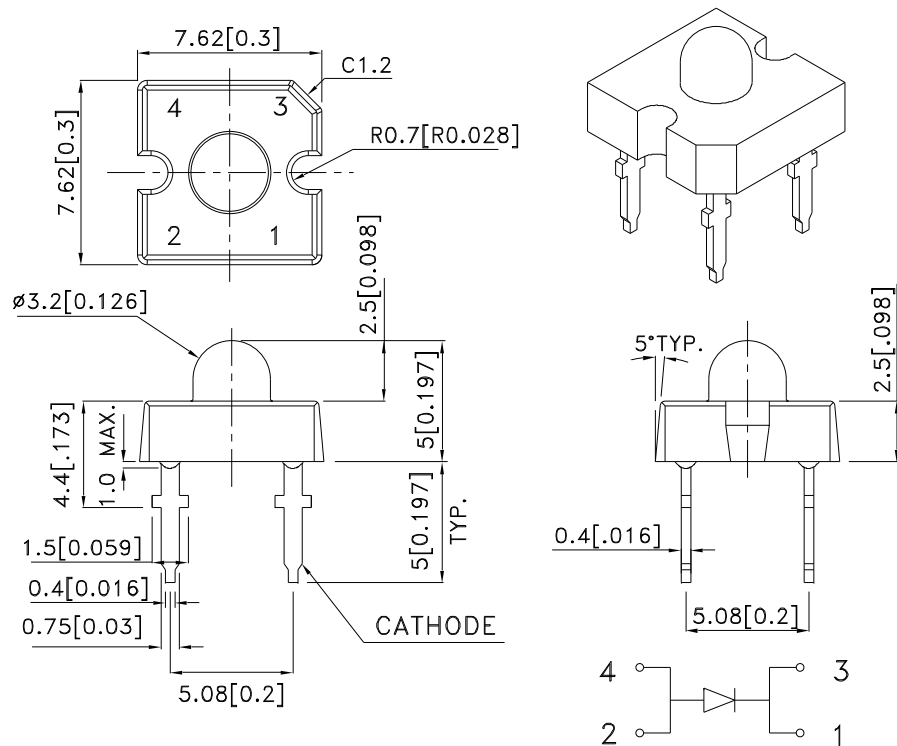
- *Outstanding Material Efficiency.
- *Electricity savings.
- *Maintenance savings.
- *Reliable and Rugged.

Typical Applications:

- *Automotive Exterior Lighting.
- *Electronic Signs and Signals.
- *Specialty Lighting.



Outline Drawings



Notes:

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

Absolute Maximum Ratings at TA=25°C

PARAMETER	QB-D	UNITS
DC Forward Current	30	mA
Power dissipation	126	mW
Reverse Voltage	5	V
Operating Temperature	-40 To +85	°C
Storage Temperature	-55 To +85	°C
Lead Solder Temperature[1]	260°C For 5 Seconds	

1. 1.5mm[0.06inch] below seating plane.
NO Reflow soldering.

Selection Guide

Part No.	LED COLOR	Iv(cd)[1] @30mA		$\Phi_v(lm)[1]$ @30mA Typ.	Viewing Angle[2] 2 $\theta_{1/2}$ Typ.
		Min.	Typ.		
WP7677C2QBC/D	Blue (InGaN)	1.1	1.8	0.5	30°

Notes:

- 1.Luminous intensity is measured with an integrating sphere after the device has stabilized; Luminous Intensity / luminous flux: +/-15%.
LEDs are binned according to their Luminous intensity.
2. $\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
3. Luminous Intensity / luminous flux value is traceable to the CIE127-2007 compliant national standards.

Optical Characteristics at TA=25°C If=30mA R θ_j -a=200°C/W

DEVICE TYPE	PEAK WAVELENGTH λ_{PEAK} (nm) TYP.	DOMINANT[1] WAVELENGTH λ_{DOM} (nm) TYP.	SPECTRAL LINE WAVELENGTH $\Delta\lambda_{1/2}(nm)$ TYP.
QB-D	460	465	25

Notes:

- 1.The dominant wavelength is derived from the CIE Chromaticity Diagram and represents the perceived color of the device; Wavelength: +/-1nm.
- 2.Wavelength value is traceable to the CIE127-2007 compliant national standards.

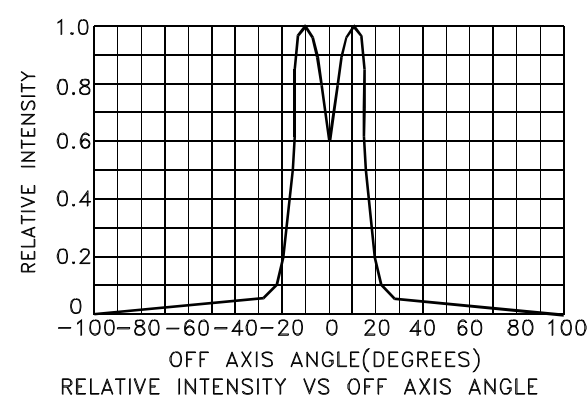
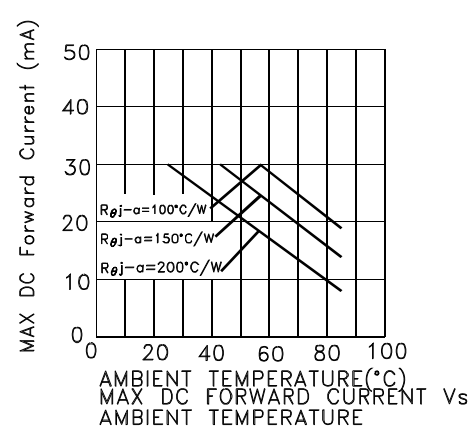
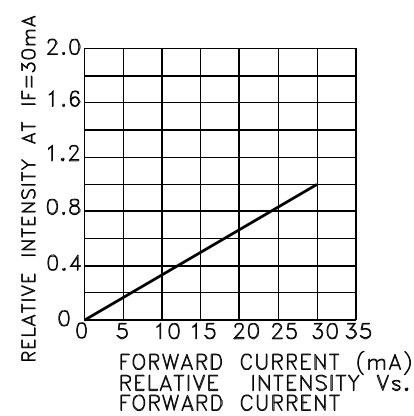
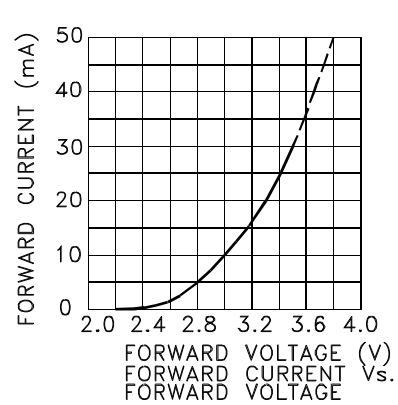
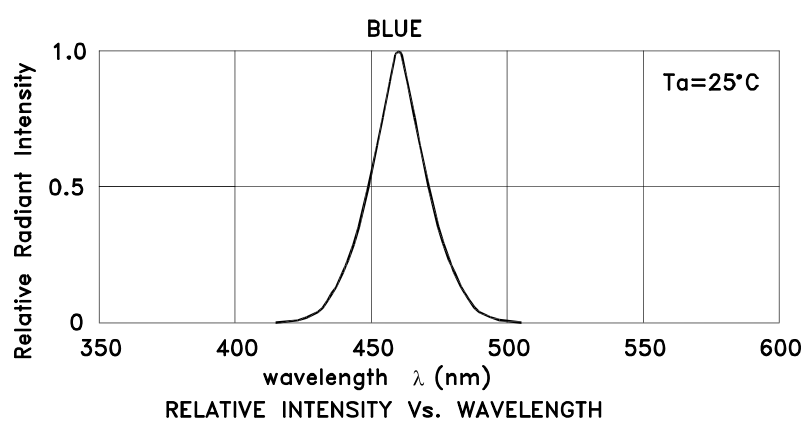
Electrical Characteristics at TA=25°C

DEVICE TYPE	FORWARD VOLTAGE [1] V _F (VOLTS) @ If=30mA		REVERSE CURRENT I _R (uA) @ V _R =5V	CAPACITANCE C (pF) @ V _F =0V F=1MHZ	THERMAL RESISTANCE R θ_j -pin °C/W
	TYP.	MAX.	MAX.	TYP.	TYP.
QB-D	3.5	4.2	50	100	180

Note:

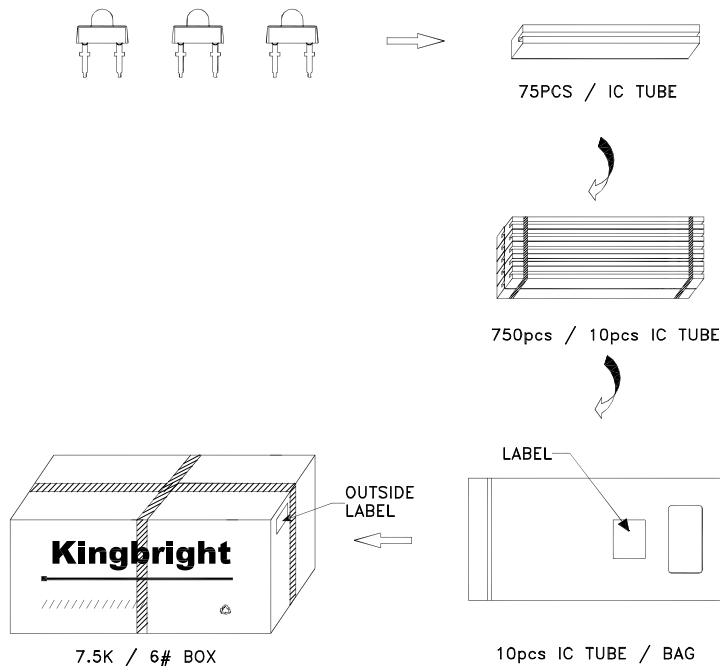
1. Forward Voltage: +/-0.1V.
2. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Figures



PACKING & LABEL SPECIFICATIONS

WP7677C2QBC/D



Kingbright	
P/NO: WP7677C2XXX	
QTY: 750 pcs	Q.C. Q C XX XX XXXX PASSED
S/N: XXXX	
CODE: XXX	
LOT NO:	
RoHS Compliant	

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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)

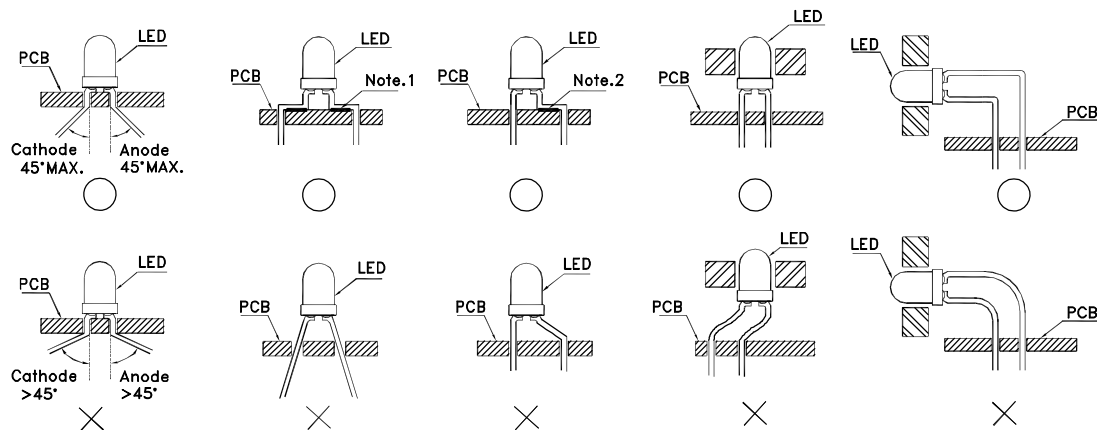


Fig.1

”○” Correct mounting method ”×” 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.

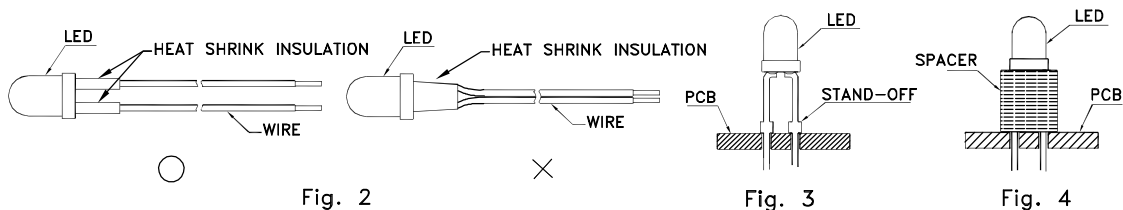


Fig. 2

Fig. 3

Fig. 4

4. Maintain a minimum of 3mm 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)

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

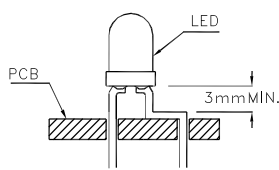


Fig. 5

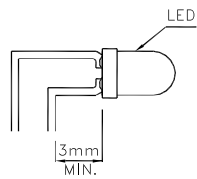


Fig. 6

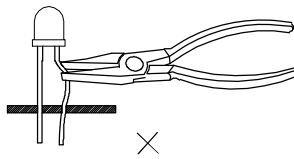


Fig. 7

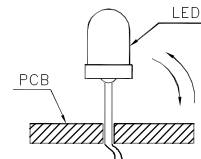
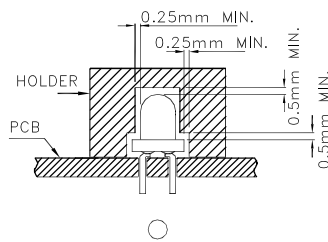
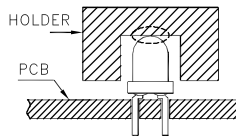


Fig. 8

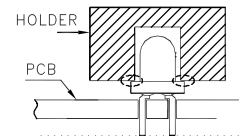
7. During soldering, component covers and holders should leave clearance to avoid placing damaging stress on the LED during soldering.



○



×



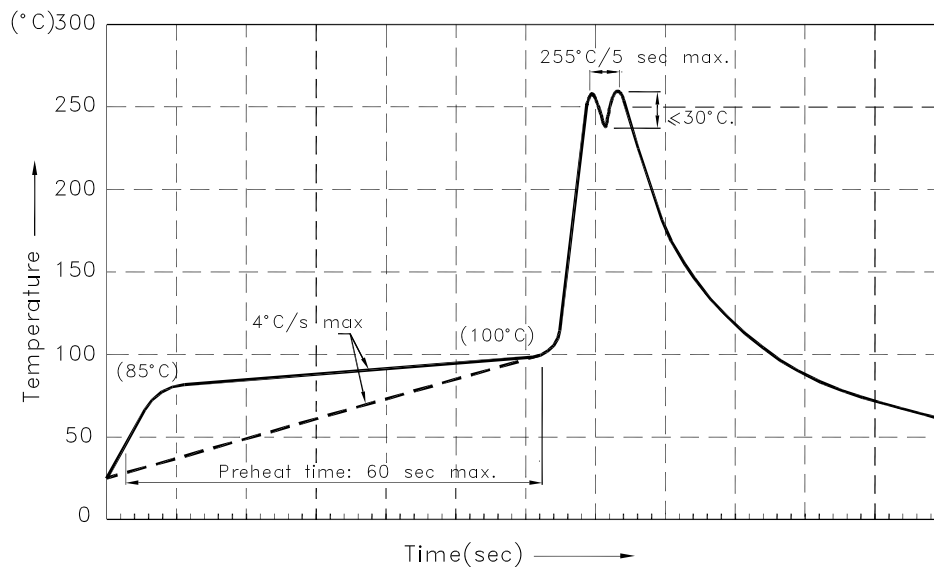
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8. The tip of the soldering iron should never touch the lens epoxy.

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 Profiles:



Notes:

1. Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
2. Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85°C.
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
6. No more than one wave soldering pass.