

# **QT-Brightek Chip LED Series**

**SMD 0603 BI-Color LED**

**Part No.: QBLP601-OIW**

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## Introduction

### Feature:

- Yellow Diffused Lens
- Package in tape and reel
- Ultra bright 0603 LED package
- AlInGaP technology for Red
- InGaN technology for White
- 140° View Angle

### Description:

These ultra bright 0603 OIW LEDs have a height profile of 0.55mm. Combination of high brightness output and small footprint, these LEDs are ideal for keypad backlighting, status indication, and color mixing applications.

### Application:

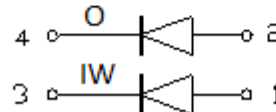
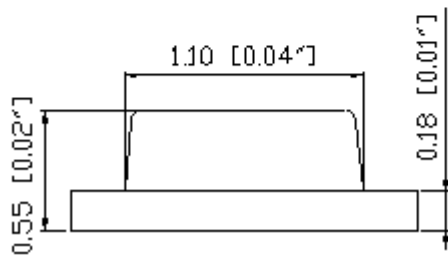
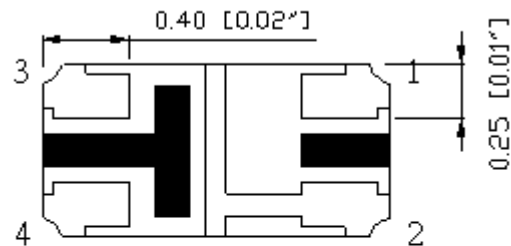
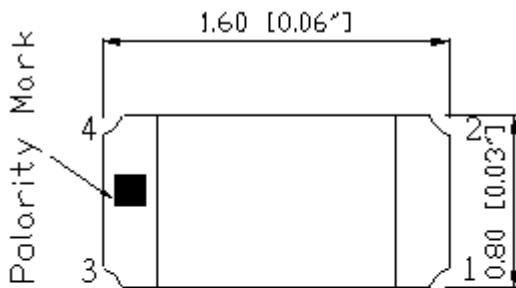
- Status indication
- Back lighting application

### Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



### Dimension:



Units: mm / tolerance = +/-0.1mm

### Electrical / Optical Characteristic (Ta=25 °C)

Product	Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ <sub>D</sub> (nm) / CCT Coordinate			I <sub>v</sub> (mcd)	
			Typ.	Max	Min.	Typ.	Max.	Min.	Typ.
QBLP600-OIW	Orange	20	2.0	2.5	600	605	610	40	63
	White	20	3.1	3.7	-	X=0.28 Y=0.29	-	100	160

### Absolute Maximum Rating

Material	P <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> (mA)*	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)	T <sub>SOL</sub> (°C)**
AllnGaP	75	30	125	5	-40 ~ +80	-40 ~ +85	260
InGaN	111	30	125	5	-40 ~ +80	-40 ~ +85	260

\*Duty 1/8 @ 1kHz

\*\*IR Reflow for no more than 10 sec @ 260 °C

### Forward Voltage V<sub>F</sub> for AllnGaP @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
□	1.7	2.5	V

### Forward Voltage V<sub>F</sub> for InGaN @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
f	2.8	3.1	V
g	3.1	3.4	
h	3.4	3.7	

### Luminous Intensity I<sub>v</sub> for Orange @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
F2	40	63	mcd
G2	63	100	

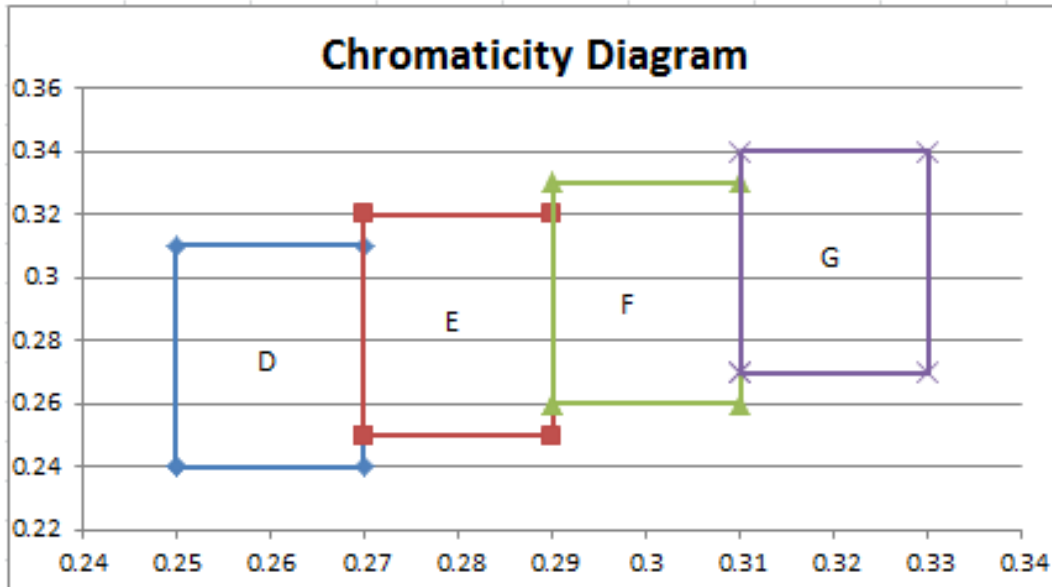
### Luminous Intensity I<sub>v</sub> for White @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
H2	100	160	mcd
I2	160	250	

### Dominant Wavelength λ<sub>D</sub> for Orange @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
p	600	605	nm
q	605	610	

### CIE Chromaticity Diagram

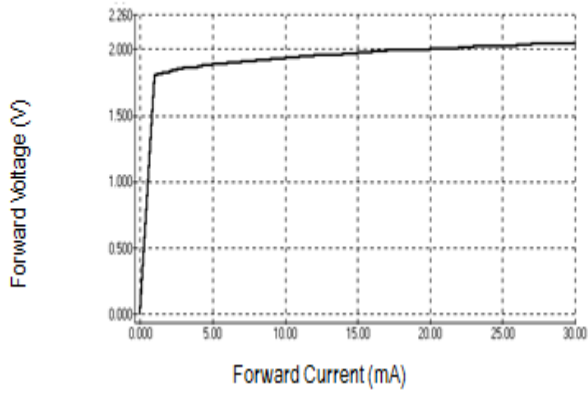


D		E		F		G	
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27
0.25	0.31	0.27	0.32	0.29	0.33	0.31	0.34
0.27	0.31	0.29	0.32	0.31	0.33	0.33	0.34
0.27	0.24	0.29	0.25	0.31	0.26	0.33	0.27
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27

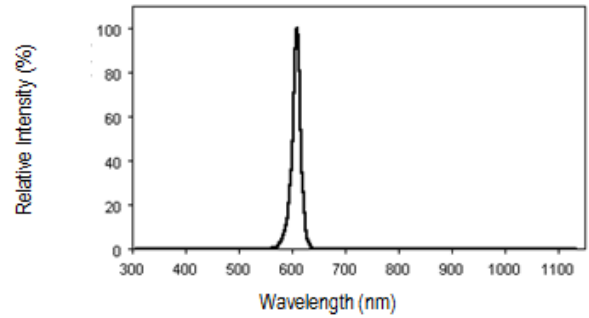
## Characteristic Curves

AllnGaP

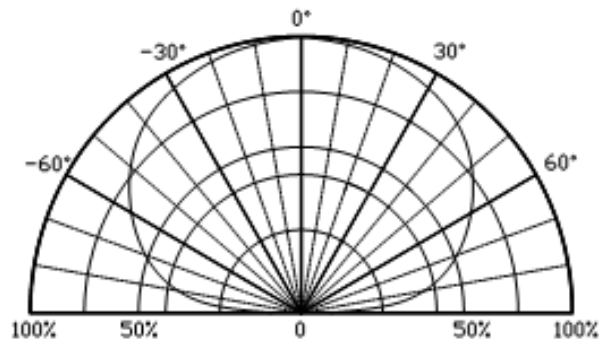
Forward Current vs. Forward Voltage



Relative Intensity vs. Wavelength

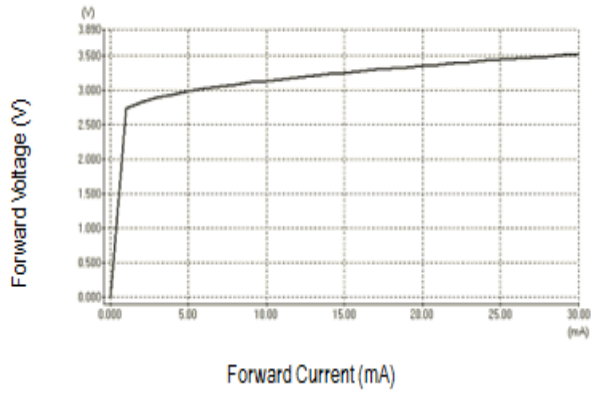


Directive Characteristics

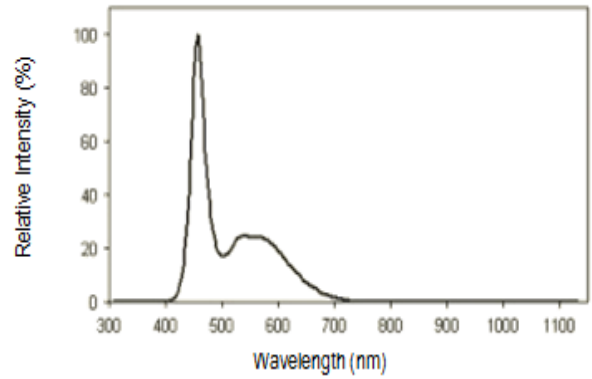


## InGaN

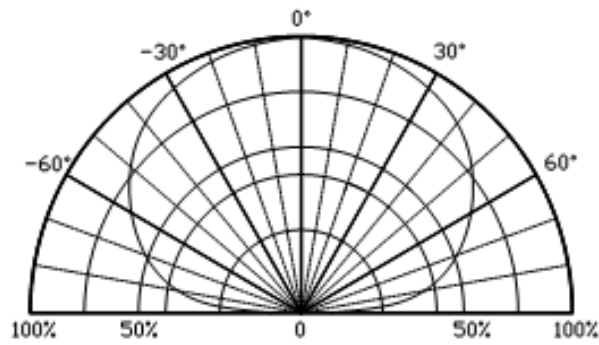
Forward Current vs. Forward Voltage



Relative Intensity vs. Wavelength

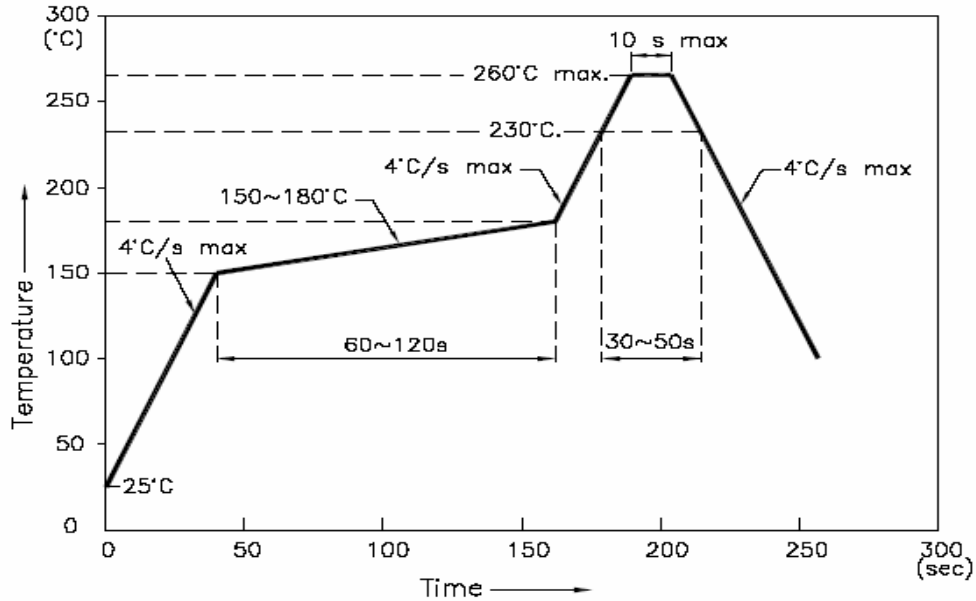


Directive Characteristics

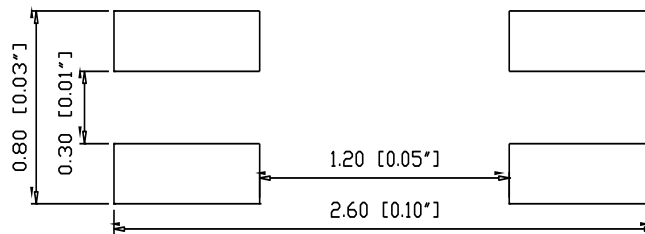


## Solder Profile & Footprint

- Recommended tin solder specifications: melting temperature in the range of 178~192 °C
- The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



### RECOMMEND PAD LAYOUT



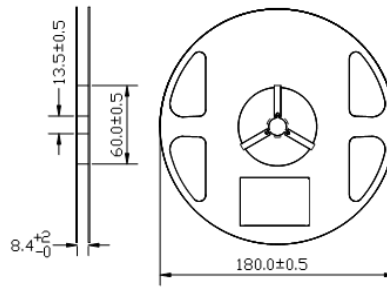
Units: mm

tolerance: +/- 0.1mm



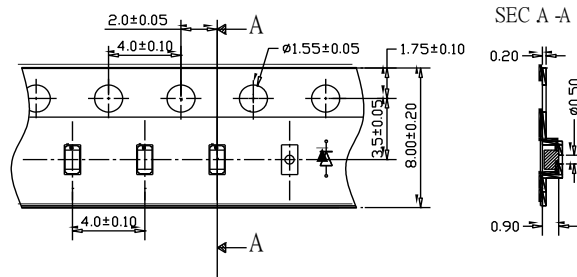
## Packing

### Reel Dimension:



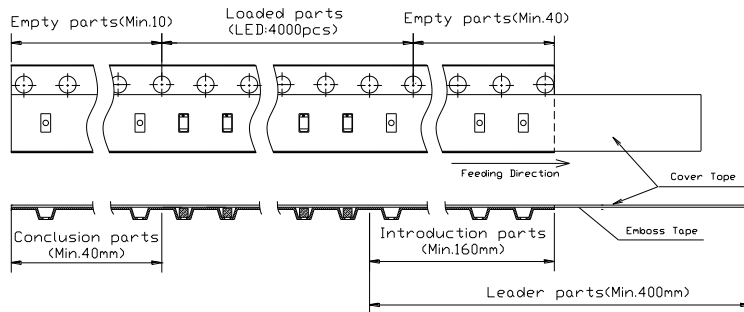
Unit: mm

### Tape Dimension:

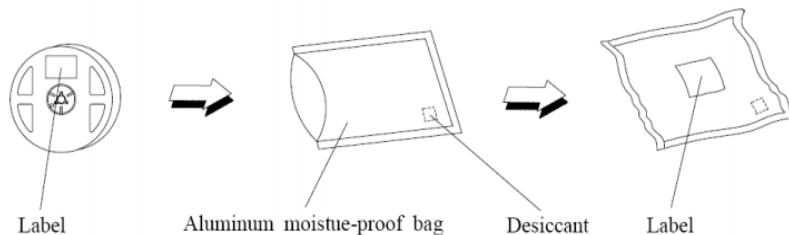


Unit: mm

### Arrangement of Tape:



### Packaging Specifications:



**Labeling**

Part No: \_\_\_\_\_

Customer P/N: \_\_\_\_\_

Item: \_\_\_\_\_

Q'ty: \_\_\_\_\_

Vf: \_\_\_\_\_

Iv: \_\_\_\_\_

WI: \_\_\_\_\_

Date: \_\_\_\_\_

**Made in China****Ordering Information**

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP601-OIW	QBLP601-OIW	Orange: I <sub>v</sub> =100mcd typ. @ 20mA / λ <sub>D</sub> : 600nm to 610nm	4000pcs
		White: I <sub>v</sub> =250mcd typ. @ 20mA / CCT Coordinate: (X=0.28, Y=0.29) typ.	

## Revision History

Description:	Revision #	Revision Date
New Release of QBLP601-OIW	V1.0	04/21/2015
Add Packing spec	V1.1	08/01/2016
Amend Brightness	V1.2	06/04/2019

## Disclaimer

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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.