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.

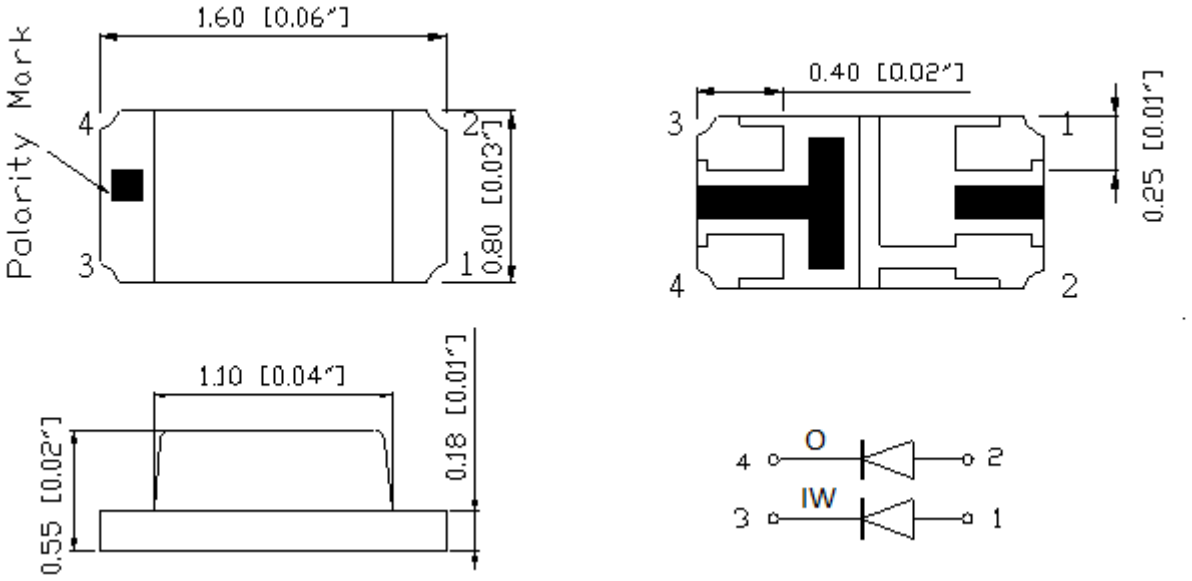
Application:

- 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_F (mA)	V_F (V)		λ_D (nm) / CCT Coordinate			I_V (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_d (mW)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)	T_{SOL} (°C)**
AlInGaP	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_F for AlInGaP @ I_F=20mA

Bin	Min.	Max.	Unit
□	1.7	2.5	V

Forward Voltage V_F for InGaN @ I_F=20mA

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

Luminous Intensity I_V for Orange @ I_F=20mA

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

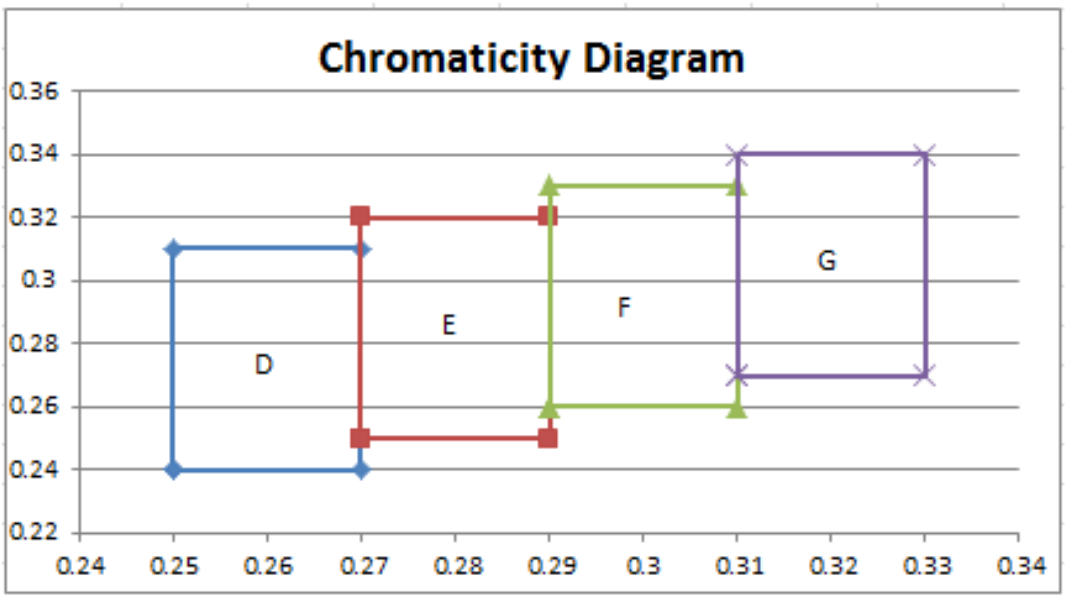
Luminous Intensity I_V for White @ I_F=20mA

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

Dominant Wavelength λ_D for Orange @ I_F=20mA

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

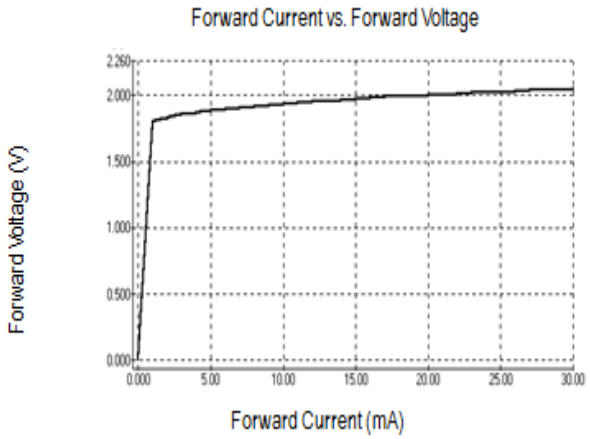
CIE Chromaticity Diagram

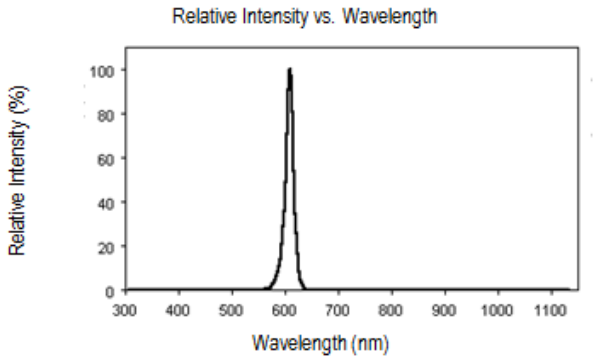


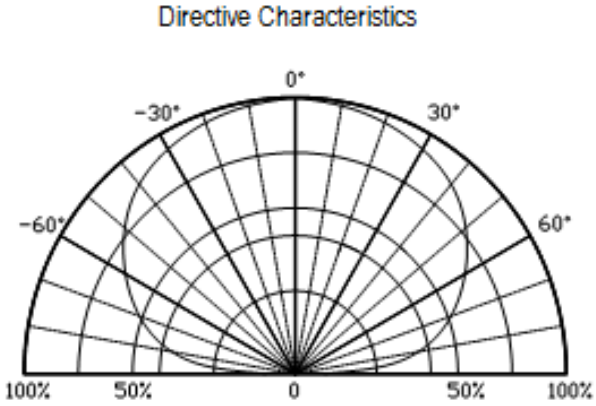
D		E		F		G	
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27
0.25	0.31	0.27	0.32	0.29	0.33	0.31	0.34
0.27	0.31	0.29	0.32	0.31	0.33	0.33	0.34
0.27	0.24	0.29	0.25	0.31	0.26	0.33	0.27
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27

Characteristic Curves

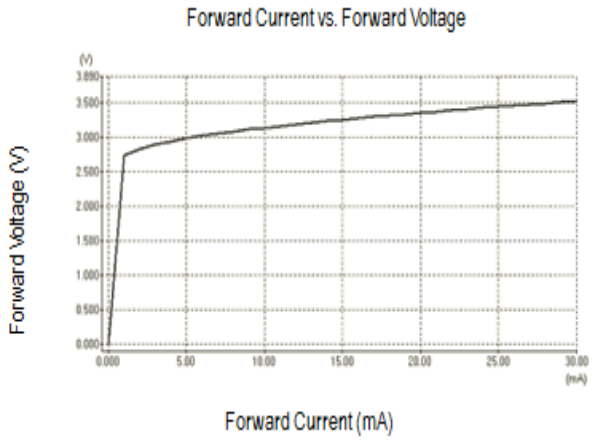
AlInGaP

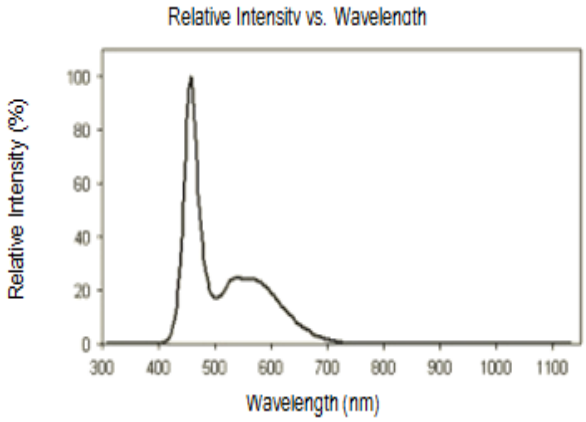


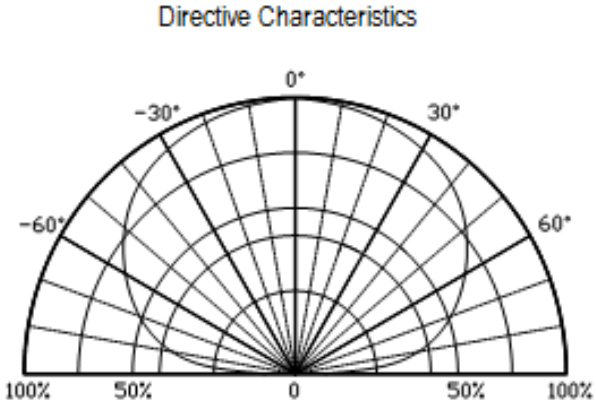




InGaN

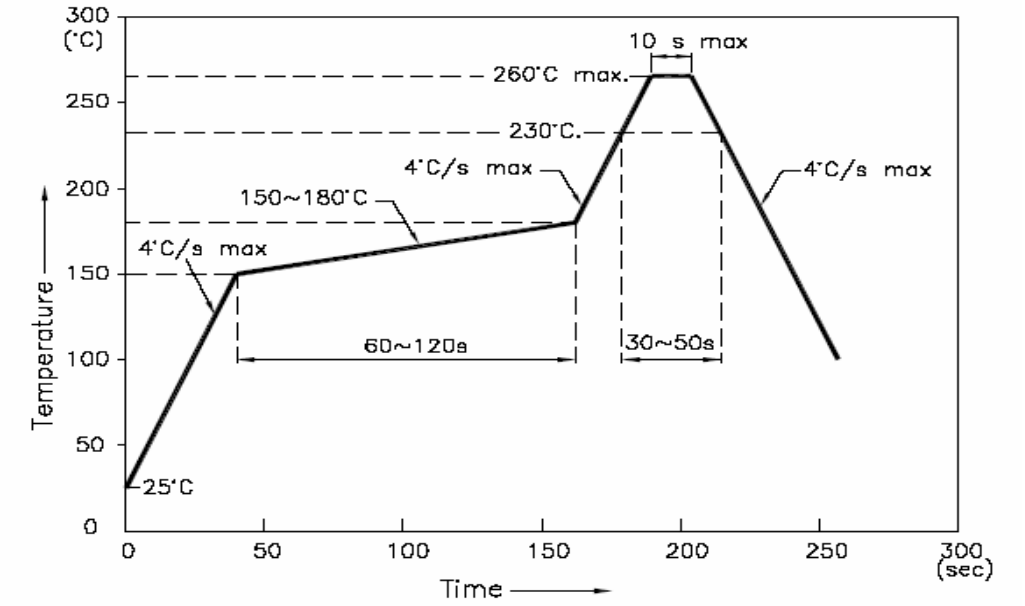

Forward Current vs. Forward Voltage
Forward Voltage (V)
Forward Current (mA)


Relative Intensity vs. Wavelength
Relative Intensity (%)
Wavelength (nm)

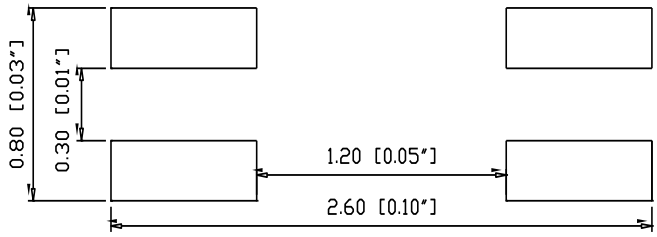

Directive Characteristics
0°
-30°
30°
-60°
60°
100%
50%
0
50%
100%

Solder Profile & Footprint

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



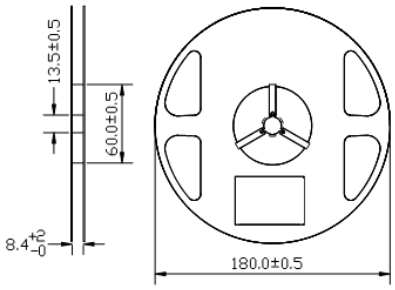
RECOMMEND PAD LAYOUT



Units: mm tolerance: +/- 0.1mm

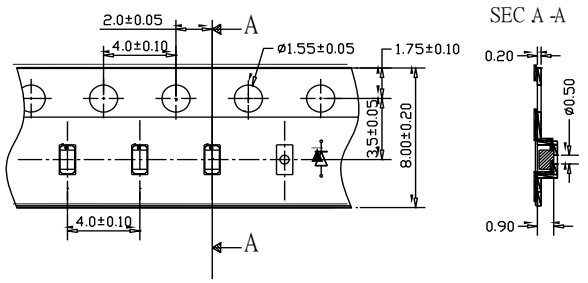
Packing

Reel Dimension:



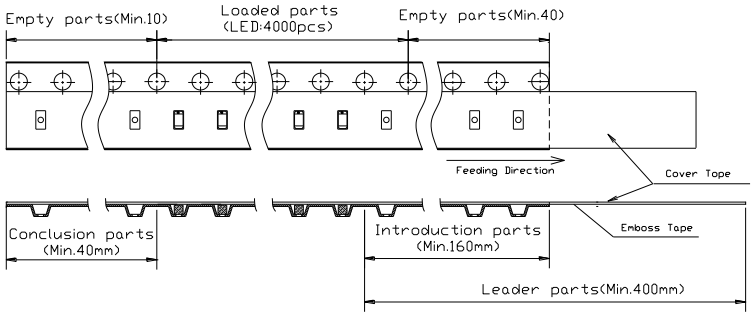
Unit: mm

Tape Dimension:

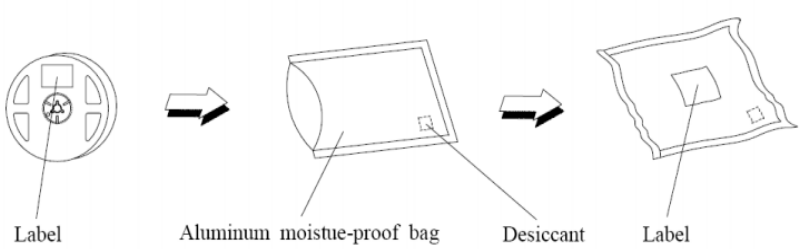


Unit: mm

Arrangement of Tape:



Packaging Specifications:



Labeling



Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP601-OIW	QBLP601-OIW	Orange: I_V=100mcd typ. @ 20mA / λ_D: 600nm to 610nm	4000pcs
		White: I_V=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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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.