QT-Brightek Chip LED Series

SMD 0603 BI-Color LED

Part No.: QBLP601-RIB

Table of Contents:

Introduction

Feature:

- Water clear lens
- Package in tape and reel
- Ultra bright 0603 LED package
- AlInGaP technology for red (R)
- InGaN technology for blue (IB)
- Viewing angle: 140 deg typ.

Description:

These ultra bright 0603 RIB bi-color 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.

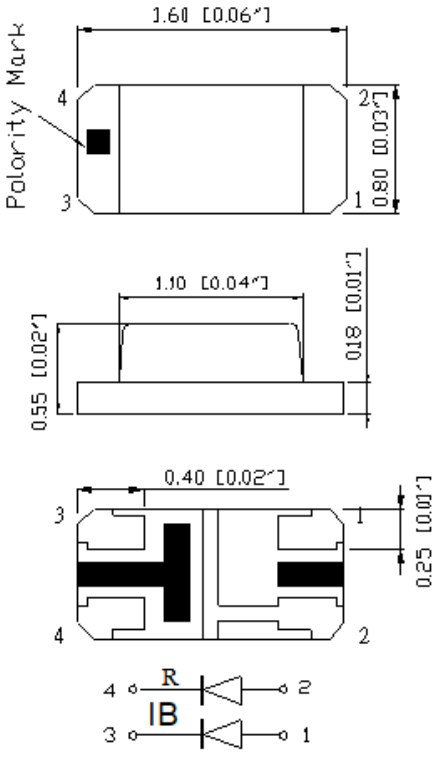
Application:

- 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)			I_V (mcd)	
			Typ.	Max	Min.	Typ.	Max.	Min.	Typ.
QBLP601-RIB	Red	20	2.0	2.5	625	630	635	63	110
	Blue	20	3.1	3.7	465	470	475	63	100

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 Red @ I_F=20mA

Bin	Min.	Max.	Unit
G2	63	100	mcd
H2	100	160	

Luminous Intensity I_V for Blue @ I_F=20mA

Bin	Min.	Max.	Unit
G2	63	100	mcd
H2	100	160	

Dominant Wavelength λ_D for Red @ I_F=20mA

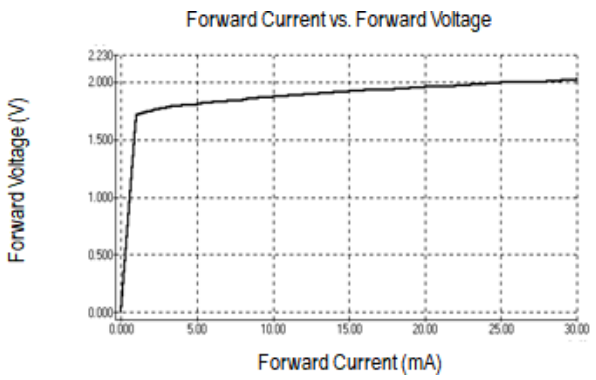
Bin	Min.	Max.	Unit
u	625	630	nm
v	630	635	

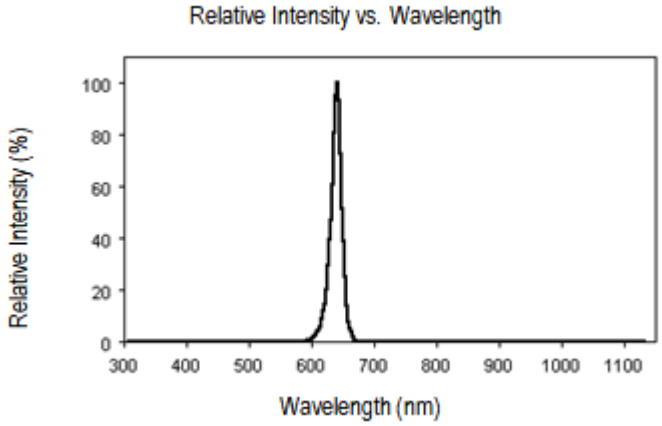
Dominant Wavelength λ_D for Blue @ I_F=20mA

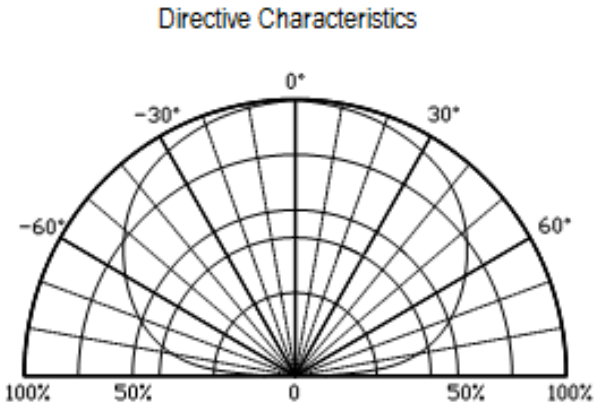
Bin	Min.	Max.	Unit
G	465	467.5	nm
H	467.5	470	
I	470	472.5	
J	472.5	475	

Characteristic Curves

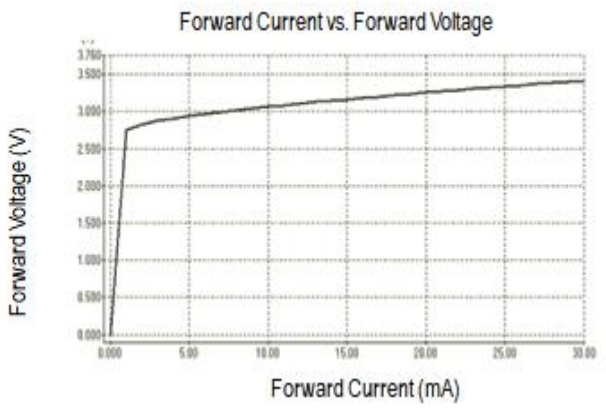
Red

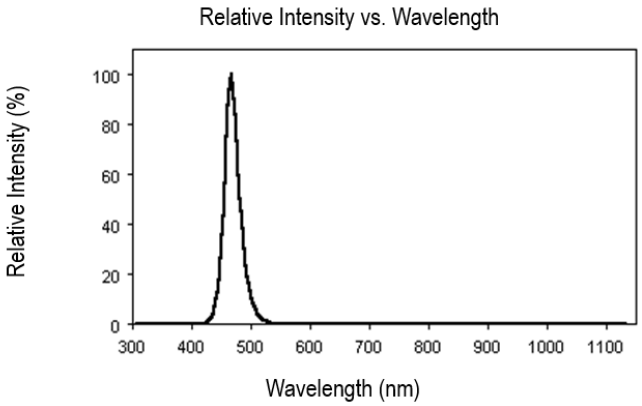


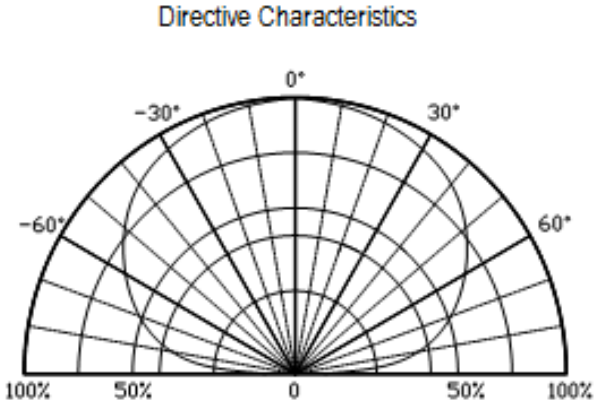




Blue

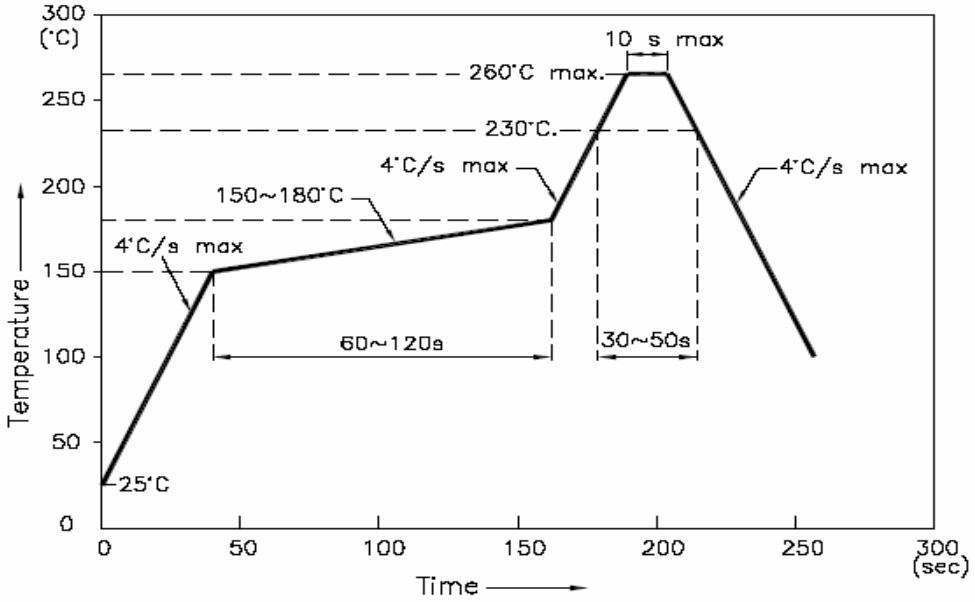

Forward Current vs. Forward Voltage
Forward Voltage (V)
Forward Current (mA)


Relative Intensity vs. Wavelength
Relative Intensity (%)
100
80
60
40
20
0
300
400
500
600
700
800
900
1000
1100
Wavelength (nm)

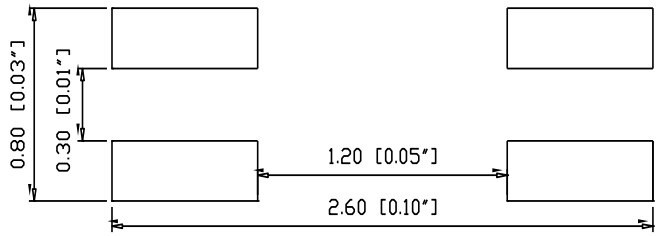

Directive Characteristics
0°
-30°
30°
-60°
60°
100%
50%
0
50%
100%

Solder Profile & Footprint

-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



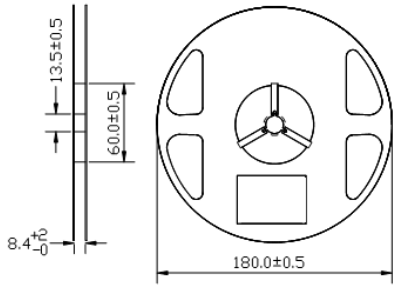
RECOMMEND PAD LAYOUT



Units: mm tolerance: +/- 0.1mm

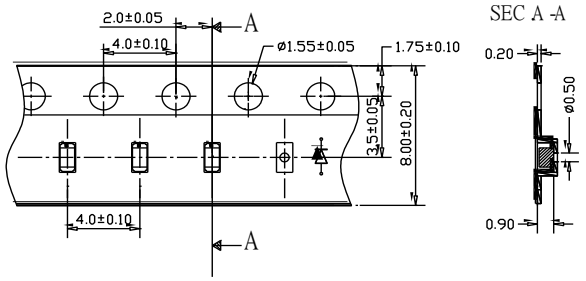
Packing

Reel Dimension:



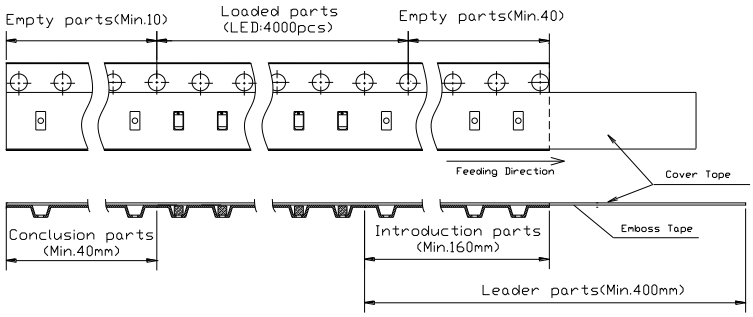
Unit: mm

Tape Dimension:

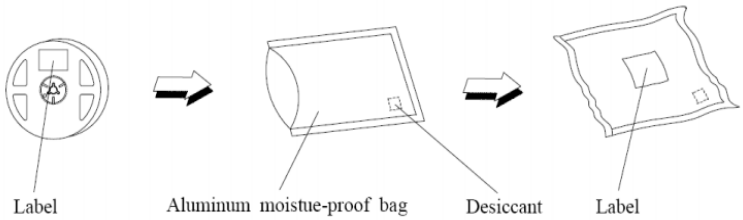


Unit: mm

Arrangement of Tape:



Packaging Specifications:



Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP601-RIB	QBLP601-RIB	Red (R): I_V=110mcd typ. @ 20mA / λ_D: 625nm to 635nm	4000pcs
		Blue (IB): I_V=100mcd typ. @ 20mA / λ_D: 465nm to 475nm	

Revision History

Description:	Revision #	Revision Date
New Release of QBLP601-RIB	V1.0	05/01/2019

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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.