QT-Brightek Chip LED Series

4-SMD RGB LED

Part No.: QBLP600-RGB-3083

3mA Sorting

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Introduction

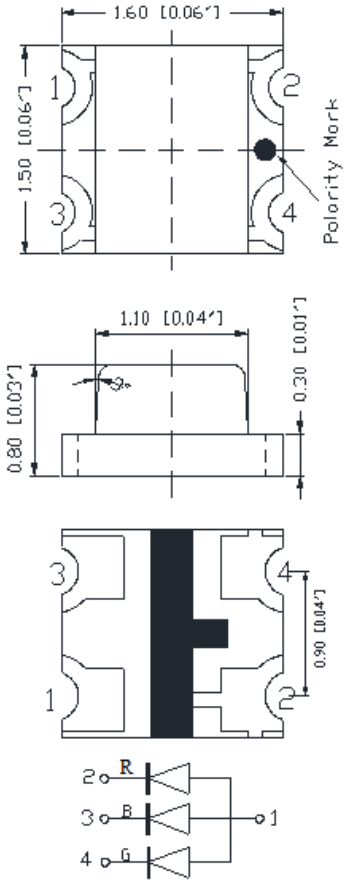
Feature:
- Clear lens
- Package in tape and reel
- Ultra bright 0606 LED package
- Common Anode
- InGaN technology for B/G
- AlInGaP technology for R
- Viewing angle: 140 deg typ.

Description:
This ultra bright 0606 RGB LEDs have a height profile of 0.80mm. 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:
- 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)			λ_P (nm)	I_V (mcd)		
			Typ.	Max	Min	Typ.	Max	Typ.	Min	Typ.	Max.
QBLP600-RGB-3083	Red	3	1.8	2.5	615	620	630	630	16	30	50
	Green	3	2.7	3.4	525	530	535	520	80	130	250
	Blue	3	2.8	3.4	460	465	470	460	8.0	15	25

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 (R)	75	30	125	5	-40 ~ +80	-40 ~ +85	260
InGaN (IB/IG)	102	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 Red (R) @ I_F=3mA

Bin	Min.	Max.	Unit
☐	1.7	2.5	V

Forward Voltage V_F for Green (G) & Blue (B) @ I_F=3mA

Bin	Min.	Max.	Unit
e	2.5	2.8	V
f	2.8	3.1	
g	3.1	3.4	

Luminous Intensity I_V for Red (R) @ I_F=3mA

Bin	Min.	Max.	Unit
B	16	20	mcd
C	20	25	
D	25	32	
E	32	40	
F	40	50	

Luminous Intensity I_V for Green (G) @ I_F=3mA

Bin	Min.	Max.	Unit
I	80	100	mcd
J	100	125	
K	125	160	
L	160	200	
M	200	250	

Luminous Intensity I_V for Blue (B) @ I_F=3mA

Bin	Min.	Max.	Unit
9	8.0	12.5	mcd
A	12.5	16	
B	16	20	
C	20	25	

Dominant Wavelength λ_D for Red (R) @ I_F=3mA

Bin	Min.	Max.	Unit
s	615	620	nm
t	620	625	
u	625	630	

Dominant Wavelength λ_D for Green (G) @ I_F=3mA

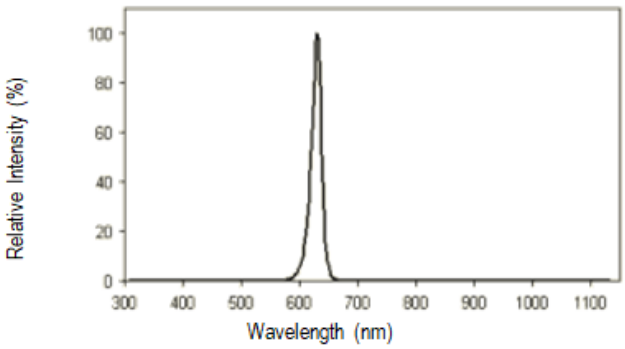
Bin	Min.	Max.	Unit
W	525	527.5	nm
X	527.5	530	
Y	530	532.5	
Z	532.5	535	

Dominant Wavelength λ_D for Blue (B) @ I_F=3mA

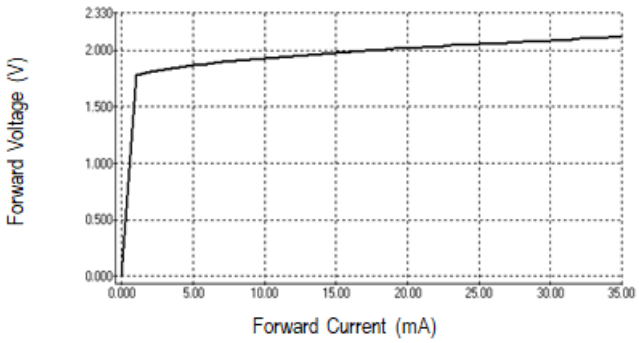
Bin	Min.	Max.	Unit
E	460	462.5	nm
F	462.5	465	
G	465	467.5	
H	467.5	470	

Characteristic Curves

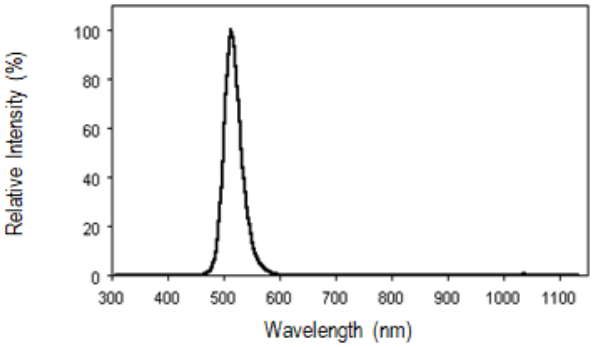
Relative Intensity vs. Wavelength (Red)



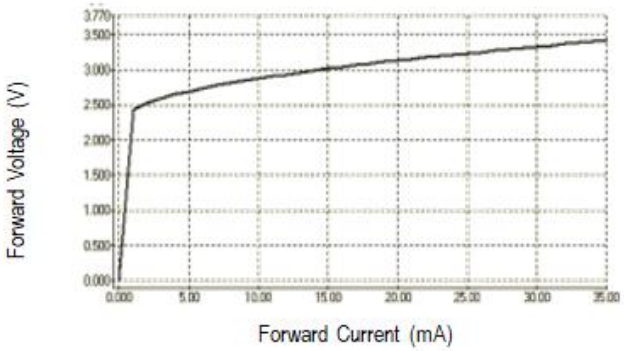
Forward Current vs. Forward Voltage (Red)



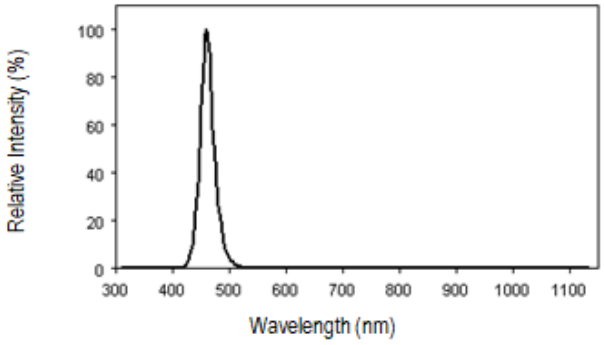
Relative Intensity vs. Wavelength (Green)



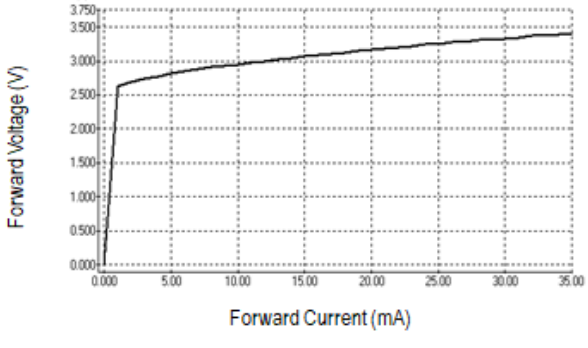
Forward Current vs. Forward Voltage (Green)

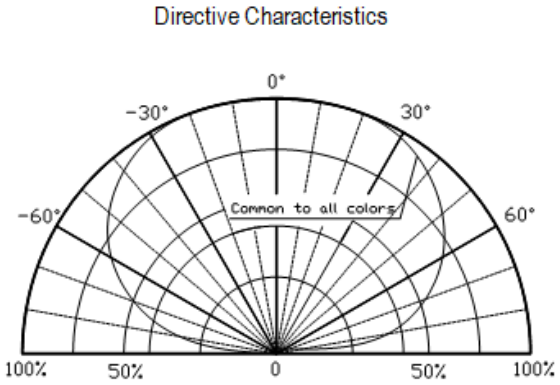


Relative Intensity vs. Wavelength (Blue)



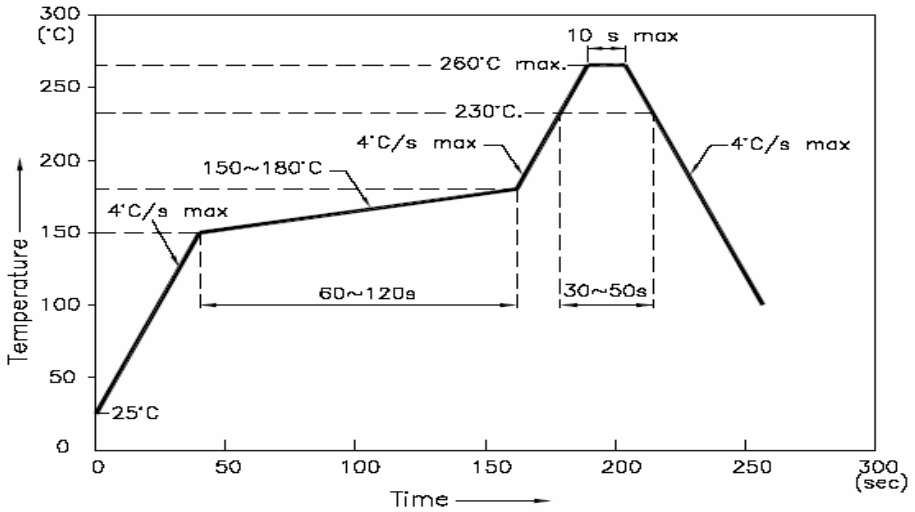
Forward Current vs. Forward Voltage (Blue)



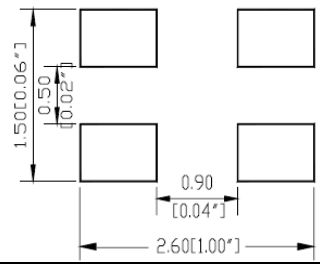


Solder Profile & Footprint

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



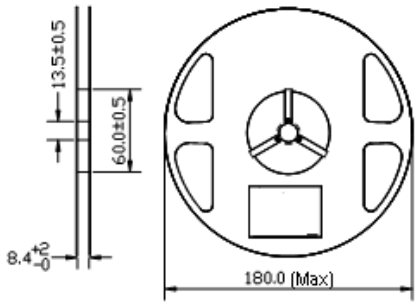
Recommended Pad Layout



Units: mm

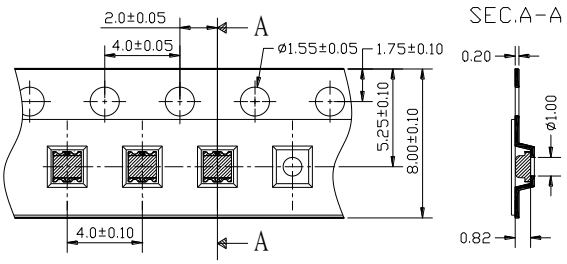
Packing

Reel Dimension:



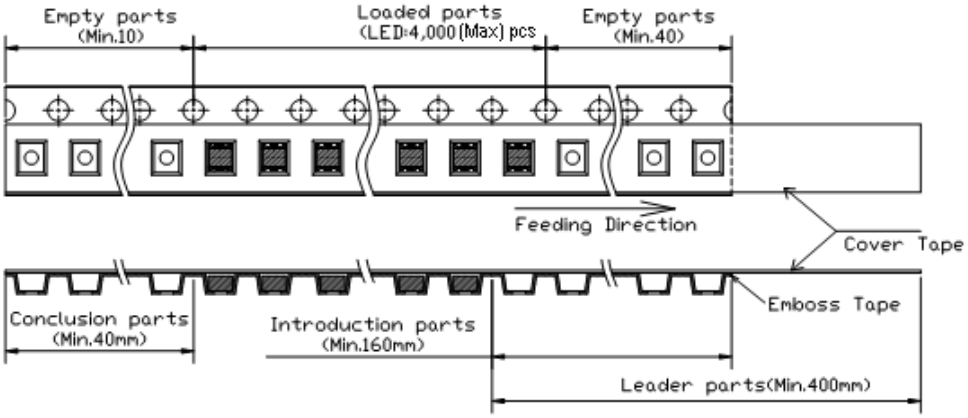
Unit: mm

Tape Dimension:

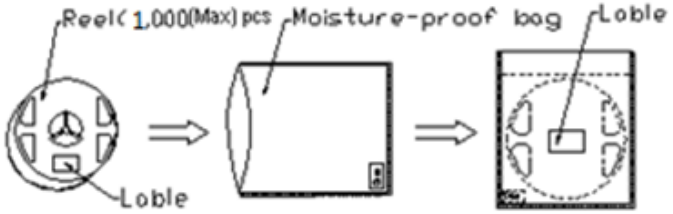


Unit: mm

Arrangement of Tape:



Packaging Specification:



Labeling

Ordering Information

Orderable Part #	Spec Range	Quantity per reel
QBLP600-RGB-3083	Red (R): Iv=30mcd typ. @ I_F=3mA, λ_D=615nm to 630nm	1,000 units
	Green (G): Iv=130mcd typ. @ I_F=3mA, λ_D=525nm to 535nm	
	Blue (B): Iv=15mcd typ. @ I_F=3mA, λ_D=460nm to 470nm	

Revision History

Description:	Revision #	Revision Date
New Release of QBLP600-RGB-3083	V1.0	03/09/2020
Fix typo on the bin chart	V1.1	06/06/2023

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.