

# QT-Brightek Chip LED Series

## SMD 0606 RGB LED

Part No.: QBLP600-RGB

**Table of Contents:**

Introduction .....	3
Electrical / Optical Characteristic (Ta=25 °C) .....	4
Absolute Maximum Rating .....	4
Characteristic Curves.....	6
Solder Profile & Footprint.....	7
Packing .....	8
Labeling .....	9
Ordering Information.....	9
Revision History .....	10
Disclaimer .....	10

## Introduction

**Feature:**

- Water clear lens
- Package in tape and reel
- Ultra bright 0606 LED package
- Common Anode
- InGaN technology for IB/IG
- AlInGaP technology for R

**Description:**

These 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:**

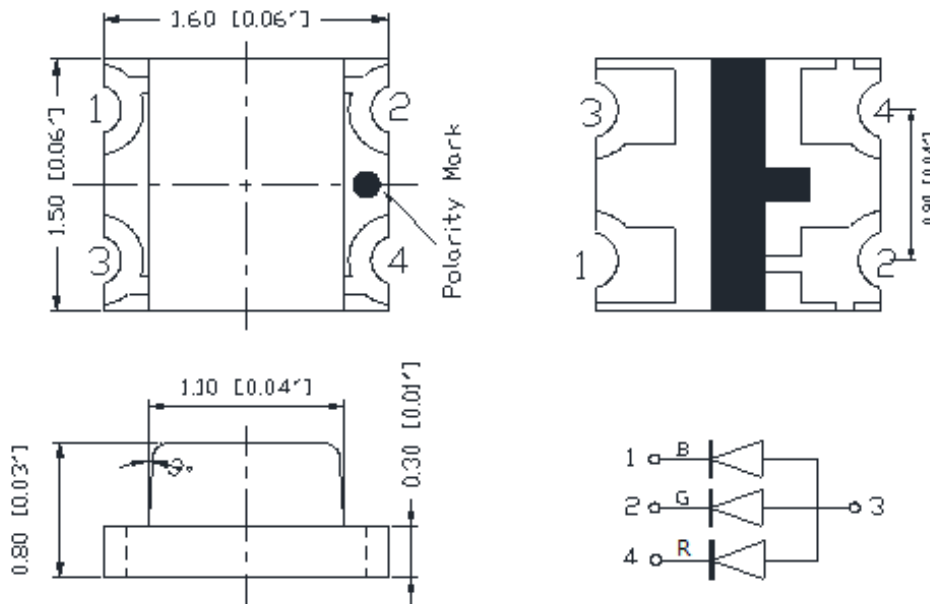
- Status indication
- Back lighting application

**Certification & Compliance:**

- 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)			I <sub>V</sub> (mcd)	
			Typ.	Max	Min	Typ.	Max	Min	Typ.
QBLP600-RGB	Red	20	2.0	2.5	615	620	630	80	125
	True Green	20	3.4	3.7	515	520	525	200	380
	Blue	20	3.1	3.7	465	470	475	40	75

**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>SO L</sub> (°C)**
InGaN (IB/IG)	111	30	125	5	-40 ~ + 80	-40 ~ +85	260
AllnGaP (R)	75	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  $I_V$  @  $I_F=20mA$** 

Bin	Min.	Max.	Unit
F	40	50	mcd
G	50	63	
H	63	80	
I	80	100	
J	100	125	
K	125	160	
L	160	200	
M	200	250	
N	250	320	
O	320	400	
P	400	500	
Q	500	630	

**Dominant Wavelength  $\lambda_D$  for Red @  $I_F=20mA$** 

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

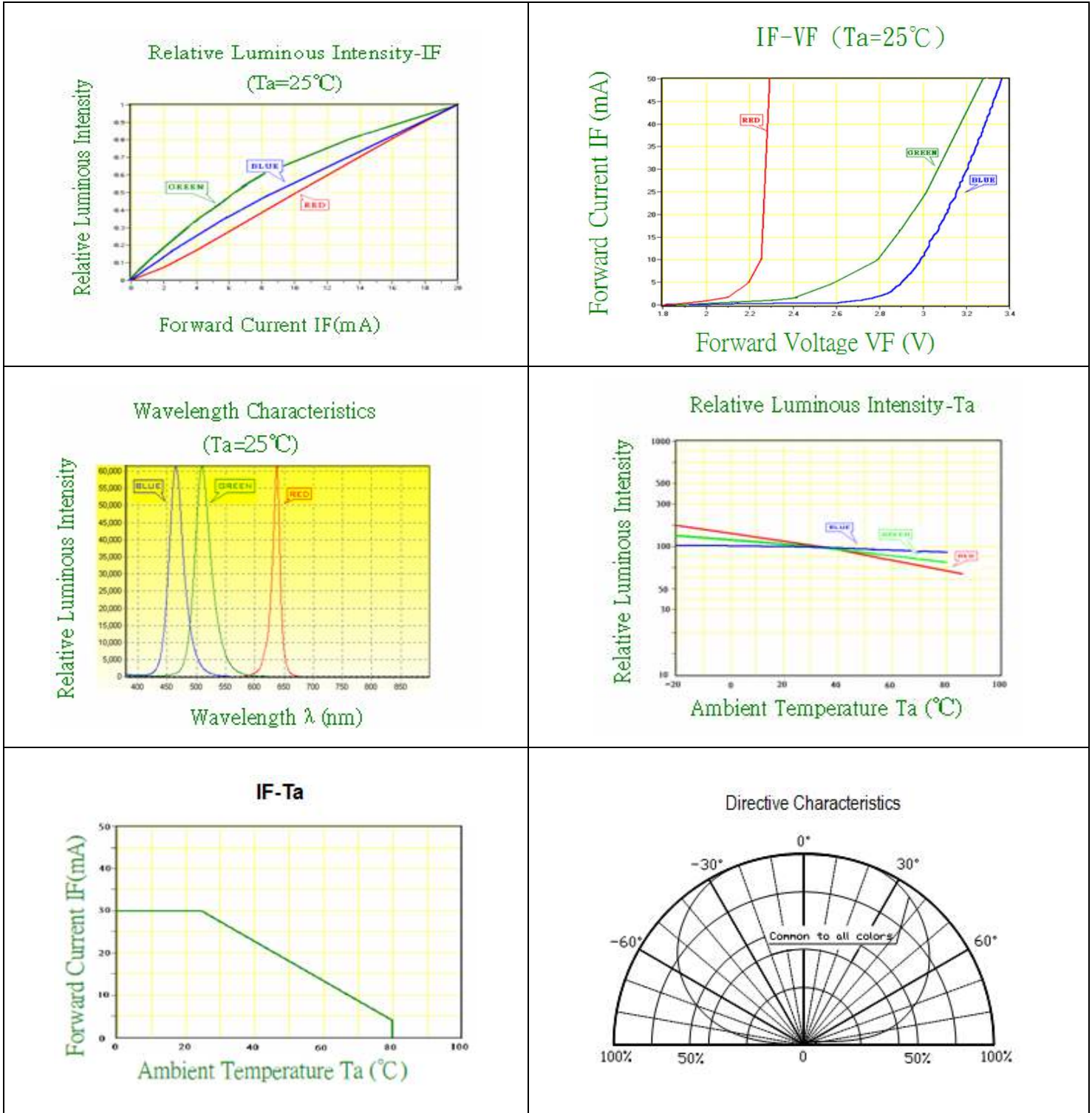
**Dominant Wavelength  $\lambda_D$  for Green @  $I_F=20mA$** 

Bin	Min.	Max.	Unit
S	515	517.5	nm
T	517.5	520	
U	520	522.5	
V	522.5	525	

**Dominant Wavelength  $\lambda_D$  for Blue @  $I_F=20mA$** 

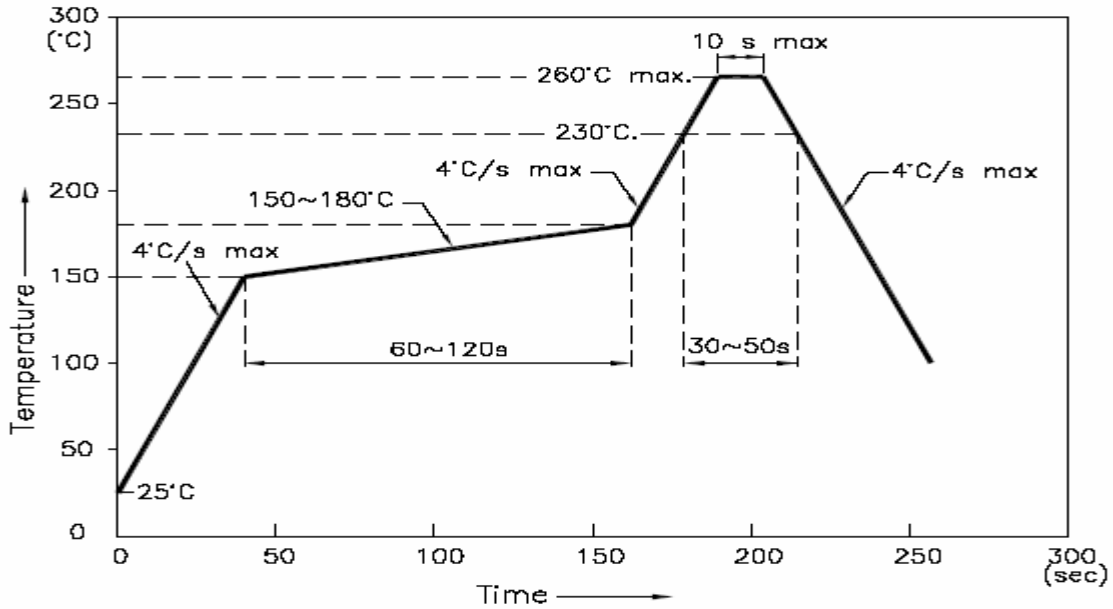
Bin	Min.	Max.	Unit
G	465	467.5	nm
H	467.5	470	
I	470	472.5	
J	472.5	475	

### Characteristic Curves

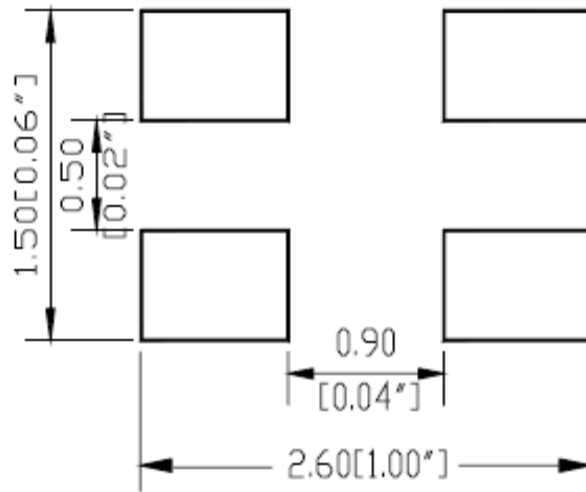


## Solder Profile & Footprint

- 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):



### Recommended Pad Layout

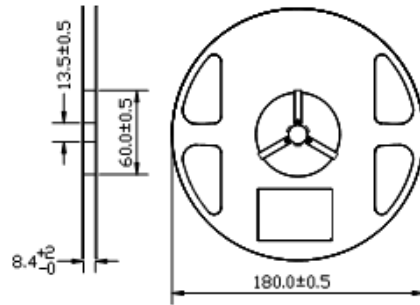


Units: mm

Tolerance: ± 0.1mm

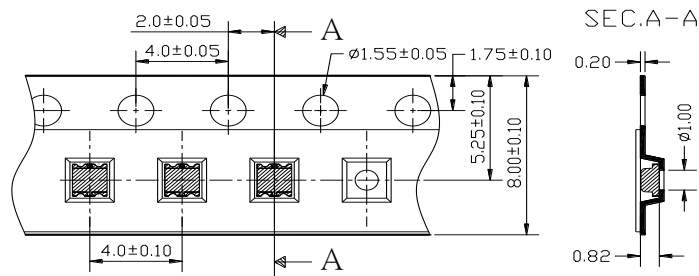
## Packing

Reel Dimension:



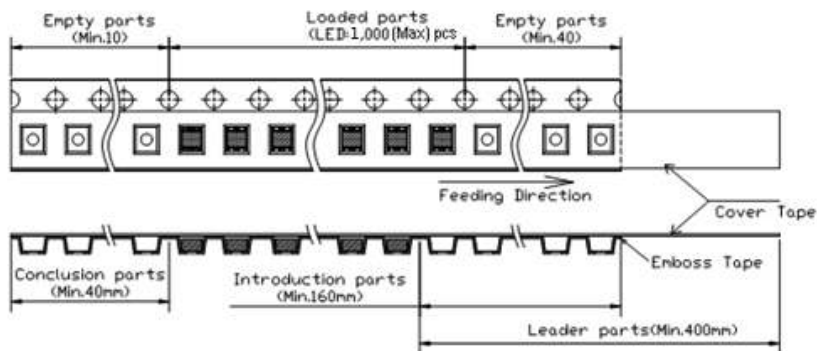
Unit: mm

Tape Dimension:

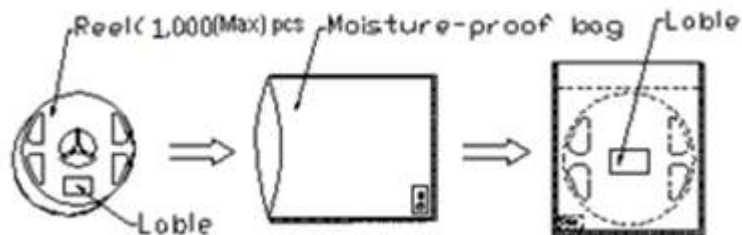


Unit: mm

Arrangement of Tape:



Packaging Specification:





**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
QBLP600-RGB	QBLP600-RGB	Red: Iv=125mcd typ. @ If=20mA, $\lambda_D=615\text{nm to }630\text{nm}$	1,000 units
		True Green: Iv=380mcd typ. @ If=20mA, $\lambda_D=515\text{nm to }525\text{nm}$	
		Blue: Iv=75mcd typ. @ If=20mA, $\lambda_D=465\text{nm to }475\text{nm}$	

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## Revision History

Description:	Revision #	Revision Date
New Release of QBLP600-RGB	V1.0	02/03/2011
Brightness Updates	V1.1	06/01/2011
Labeling update	V1.2	06/25/2011
Spec Update	V1.3	12/12/2011
Update format	V2.0	07/15/2013
Update packing spec and PCB drawing	V2.1	04/26/2016

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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.