

**QT-Brightek PLCC6 Series**

**PLCC6 Mid Power RGB LED**

**Part No.: QBHP688-RGB3H**

**RGB3: Black Face with Water Clear Lens**

**H:150mA**

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**Table of Contents:**

Introduction .....	3
Electrical / Optical Characteristic (Ta=25 °C) .....	4
Absolute Maximum Rating Per Chip .....	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 PLCC6 RGB LED
- InGaN technology for IB/IG
- AlInGaP technology for R
- Viewing Angle: 120 deg typ.
- Black Face

### Description:

This ultra bright PLCC6 RGB LED has a height profile of 1.00mm. Combination of high brightness output and direct drive capability, these LEDs are ideal for architecture lighting, status indication, and color mixing applications.

### Application:

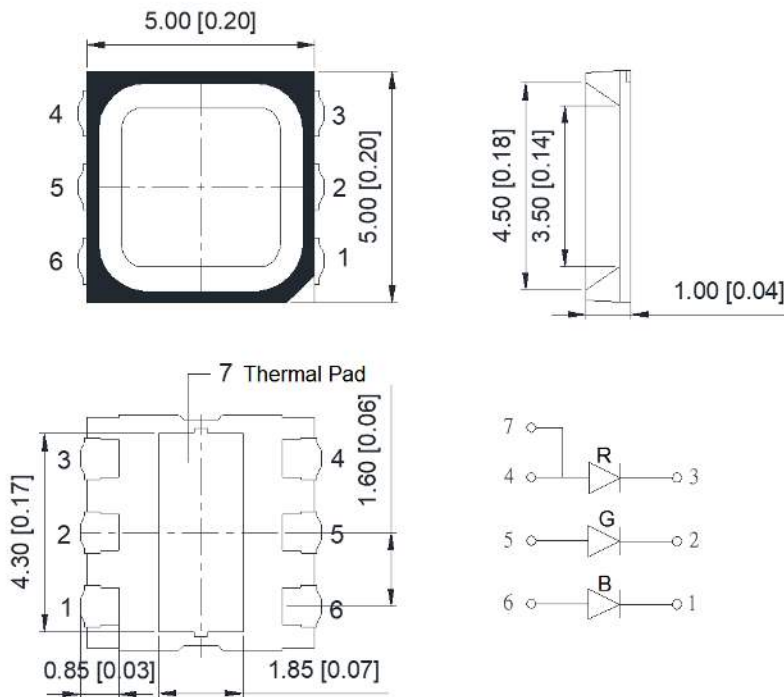
- Back lighting application
- Architecture lighting
- Decoration lighting

### Certification & Compliance:

- TS16949
- ISO9001
- IEC60529
- RoHS Compliant



### Dimension:



\*Note: Thermal pad (Pin 7) is connected to the anode of Red (Pin 4)

Units: mm / tolerance = +/-0.2mm

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

Product	Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)			λ <sub>D</sub> (nm)			Φ <sub>V</sub> (lm)		
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min	Typ.	Max.
QBHP688-RGB3H	Red	150	1.9	2.4	2.7	615	620	630	8	12.5	18
	True Green	150	2.8	3.5	3.7	520	525	530	20	28	35
	Blue	150	2.8	3.1	3.7	460	465	470	5	8	12

**Absolute Maximum Rating Per Chip**

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 (R)	432	160	125	5	-40 to +80	-40 to +85	260
InGaN (IB/IG)	592	160	125	5	-40 to +80	-40 to +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>=150mA**

Bin	Min.	Max.	Unit
□	1.9	2.7	V

**Forward Voltage V<sub>F</sub> for InGaN @ I<sub>F</sub>=150mA**

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

**Luminous Flux Φ<sub>v</sub> for Red (R) @ I<sub>F</sub>=150mA**

Bin	Min.	Max.	Unit
1	8	11	lm
2	11	14	
3	14	18	

**Luminous Flux Φ<sub>v</sub> for True Green (IG) @ I<sub>F</sub>=150mA**

Bin	Min.	Max.	Unit
1	20	25	lm
2	25	30	
3	20	35	

**Luminous Flux  $\Phi_V$  for Blue (IB) @  $I_F=150mA$** 

Bin	Min.	Max.	Unit
1	5	7	lm
2	7	10	
3	10	12	

**Dominant Wavelength  $\lambda_D$  for Red (R) @  $I_F=150mA$** 

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

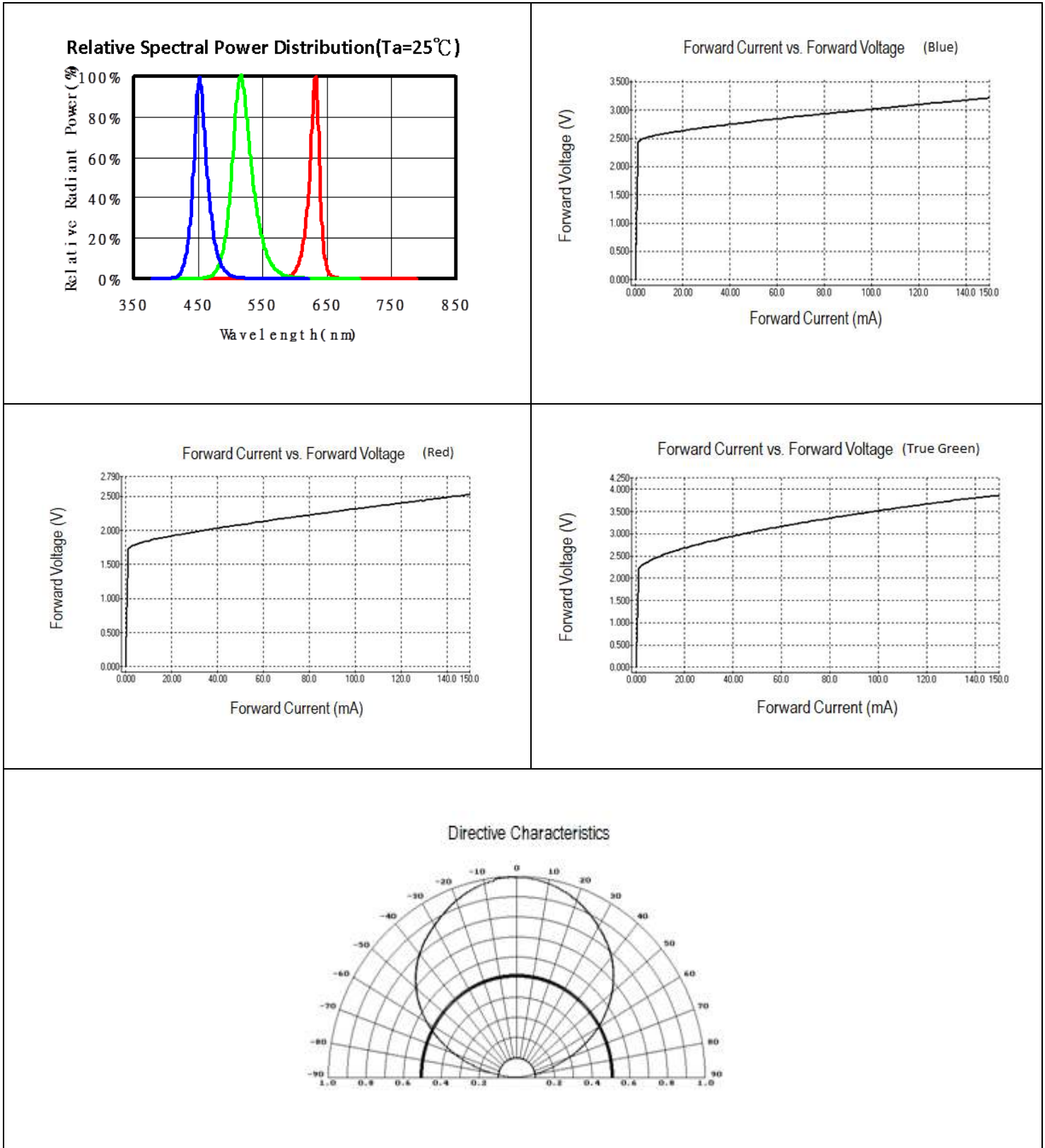
**Dominant Wavelength  $\lambda_D$  for True Green (IG) @  $I_F=150mA$** 

Bin	Min.	Max.	Unit
U	520	522.5	nm
V	522.5	525	
W	525	527.5	
X	527.5	530	

**Dominant Wavelength  $\lambda_D$  for Blue (IB) @  $I_F=150mA$** 

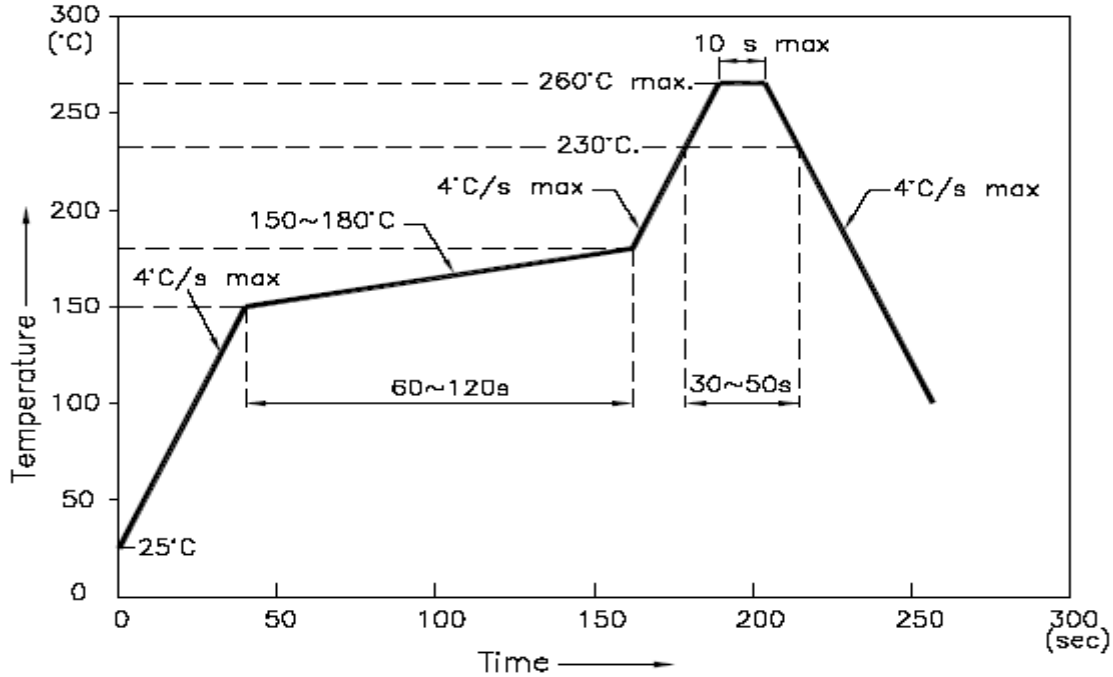
Bin	Min.	Max.	Unit
E	460	462.5	nm
F	462.5	465	
G	465	467.5	
H	467.5	470	

## Characteristic Curves

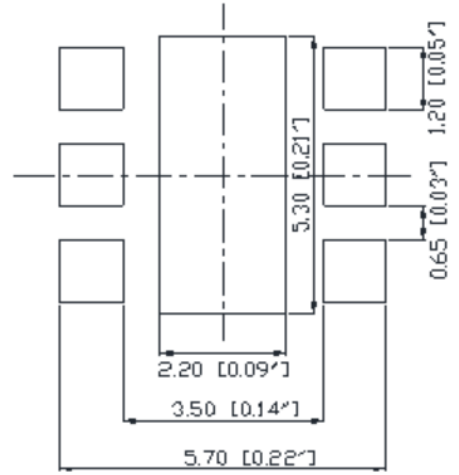


## Solder Profile & Footprint

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



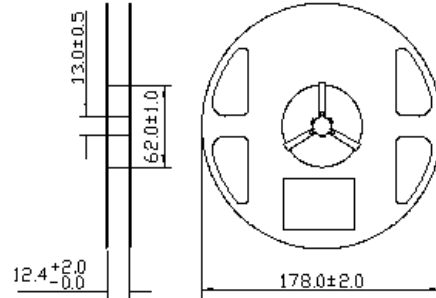
### Recommend Pad Layout



Units: mm

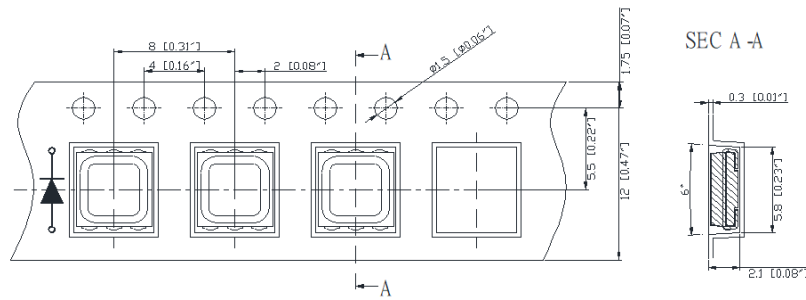
## Packing

Reel Dimension:



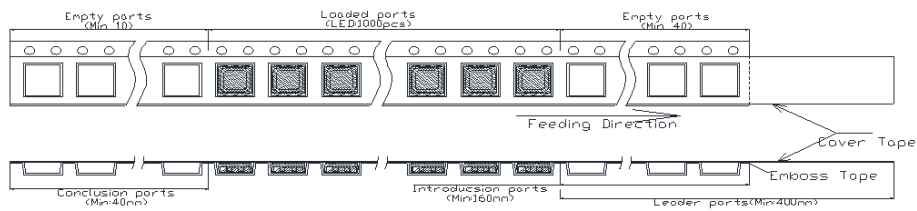
Unit: mm

Tape Dimension:

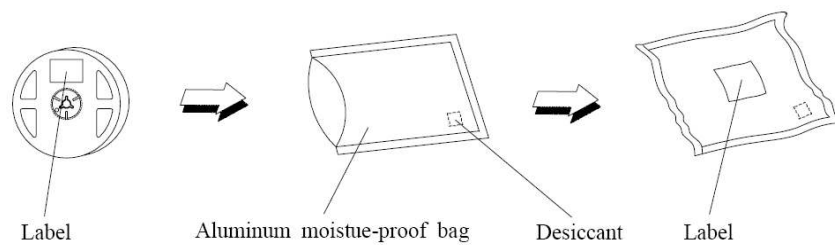


Unit: mm

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
QBLP688-RGB3H	QBLP688-RGB3H	Red: $\Phi_v=12.5\text{lm typ. @ } 150\text{mA} / \lambda_D =615\text{nm to } 630\text{nm}$	1000 units
		True Green: $\Phi_v =28\text{lm typ.} / \lambda_D =520\text{nm to } 530\text{nm}$	
		Blue: $\Phi_v=8\text{lm typ.} / \lambda_D =460\text{nm to } 470\text{nm}$	

## Revision History

Description:	Revision #	Revision Date
New Release of QBHP688-RGB3H	V1.0	10/08/2020
Leadframe Dimension Update	V1.1	08/03/2021
Update pad layout instruction	V1.2	04/26/2022

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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.