

**QT-Brightek PLCC6 Series**

**PLCC6 RGB LED**

**Part No.: QBLP679E-RGB**

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## Introduction

### Feature:

- Diffused lens
- Package in tape and reel
- Ultra bright PLCC6 RGB LED
- Direct Drive
- InGaN technology for IB/IG
- AlInGaP technology for R
- 120 degree viewing angle
- Black Face

### Description:

This ultra bright PLCC6 RGB LED has a height profile of 1.60mm. Combination of high brightness output and direct drive capability, these LEDs are ideal for architecture lighting, status indication, and color mixing applications.

### Application:

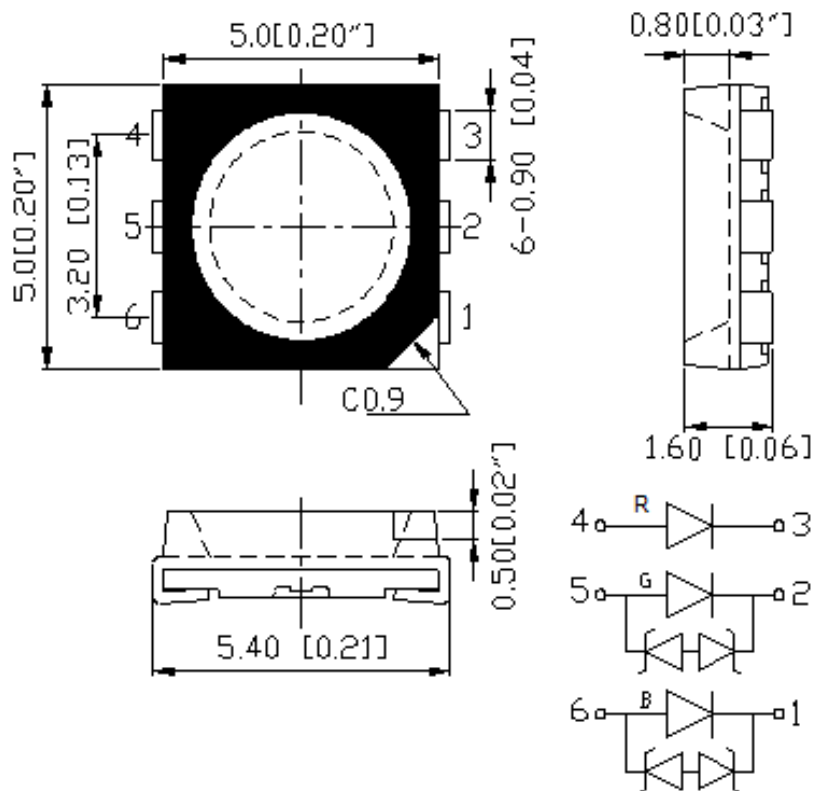
- Status indication
- Back lighting application
- Architecture lighting

### Certification & Compliance:

- TS16949
- ISO9001
- IEC60529
- RoHS Compliant



### Dimension:



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)			I <sub>V</sub> (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min	Typ.
QBLP679E-RGB	Red	20	2.0	2.5	615	620	630	500	840
	True Green	20	3.3	3.7	520	525	530	1000	1500
	Blue	20	3.2	3.7	465	470	475	200	285

### 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>SOL</sub> (°C)**	ESD (V)
InGaN (IB/IG)	111	30	125	5	-40 to +80	-40 to +85	260	HBM 12000
AllnGaP (R)	75	30	125	5	-40 to +80	-40 to +85	260	HBM 8000

\*Duty 1/8 @ 1KHz

\*\*IR Reflow for no more than 10 sec @ 260 °C

### Luminous Intensity I<sub>V</sub> for Red @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
Q	500	630	mcd
R	630	800	
S	800	1000	
T	1000	1250	
U	1250	1600	

### Luminous Intensity I<sub>V</sub> for True Green @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
T	1000	1250	mcd
U	1250	1600	
V	1600	2000	
W	2000	2500	

### Luminous Intensity I<sub>V</sub> for Blue @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
M	200	250	mcd
N	250	320	
O	320	400	
P	400	500	

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

Bin	Min.	Max.	Unit
A	615	620	nm
B	620	625	
C	625	630	

**Dominant Wavelength  $\lambda_D$  for True Green @  $I_F=20\text{mA}$** 

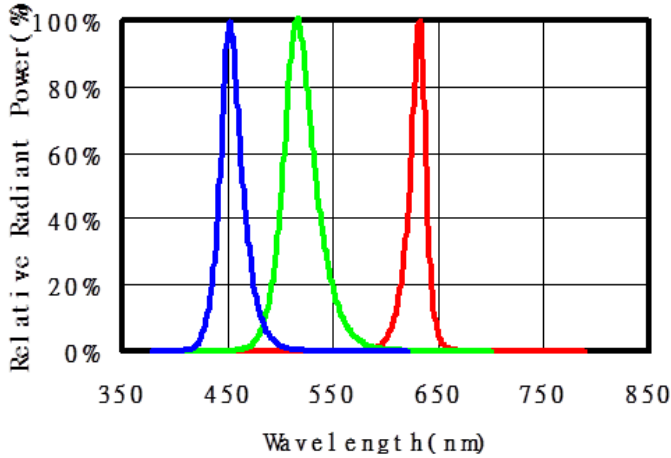
Bin	Min.	Max.	Unit
B	520	525	nm
C	525	530	

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

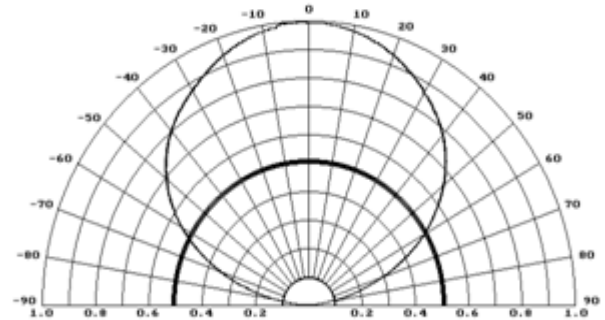
Bin	Min.	Max.	Unit
B	465	470	nm
C	470	475	

**Characteristic Curves**

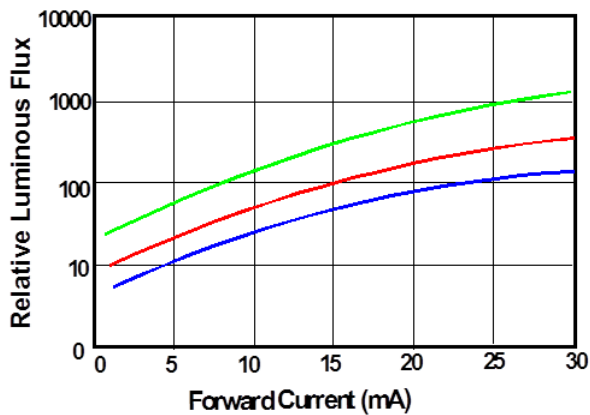
**Relative Spectral Power Distribution(Ta=25°C)**



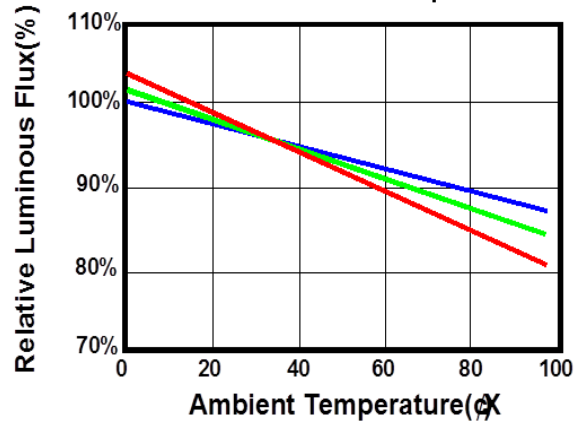
**Directive Characteristics**



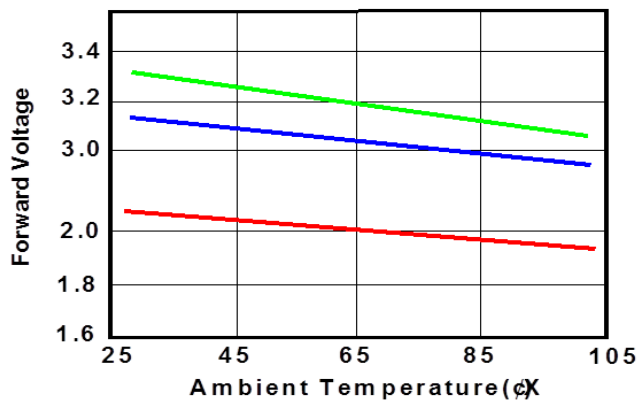
**Relative Flux vs.Current (Ta=25°C)**



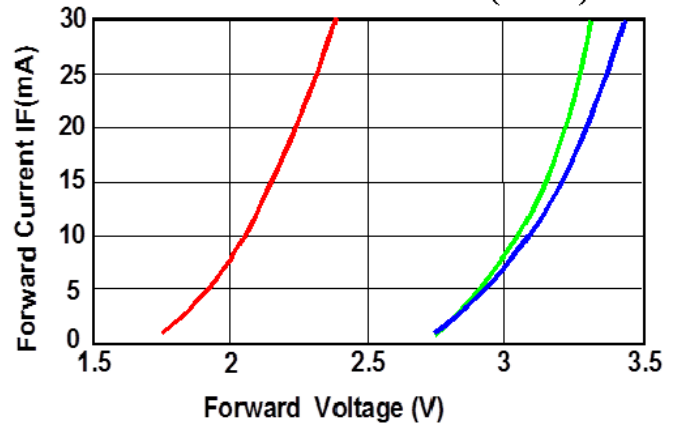
**Relative Flux vs.Ambient Temperature**



**Forward Voltage .Ambient Temperature**

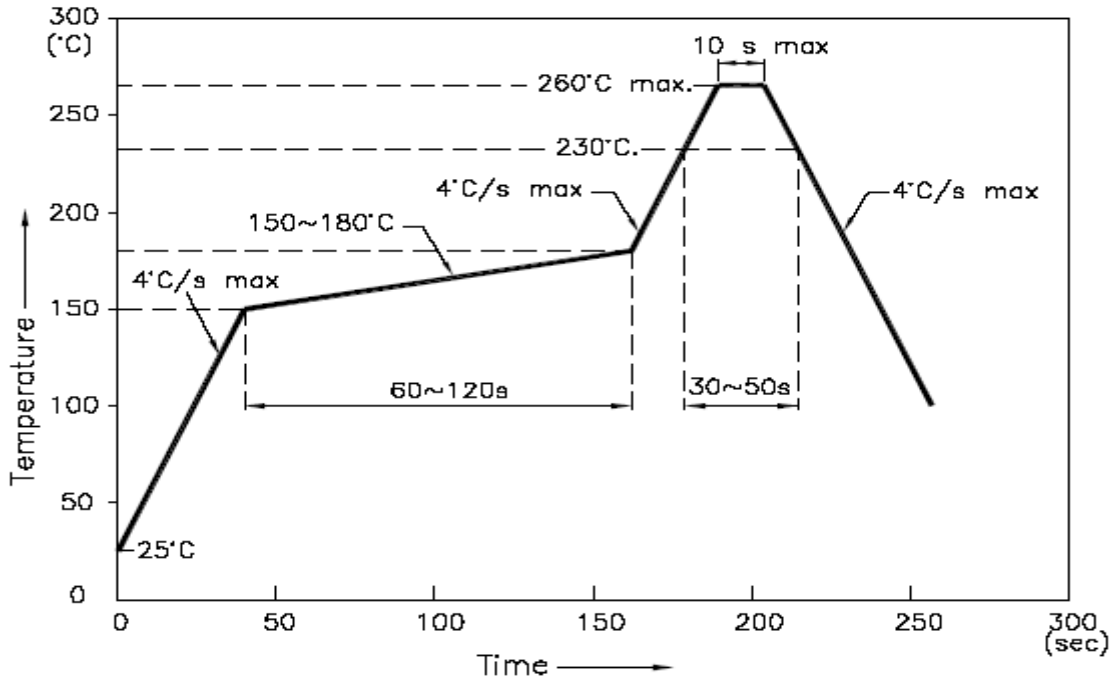


**Electrical Characteristics(Ta=25)**

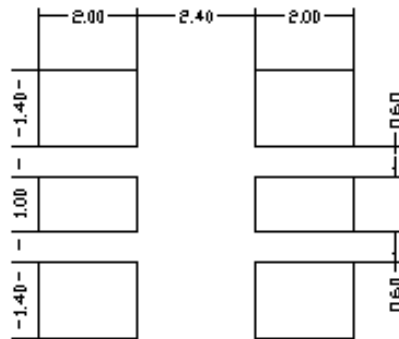


## Solder Profile & Footprint

- 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):



### Recommend Pad Layout

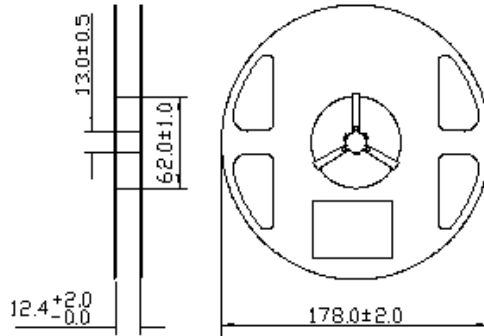


Units: mm

tolerance: +/- 0.2mm

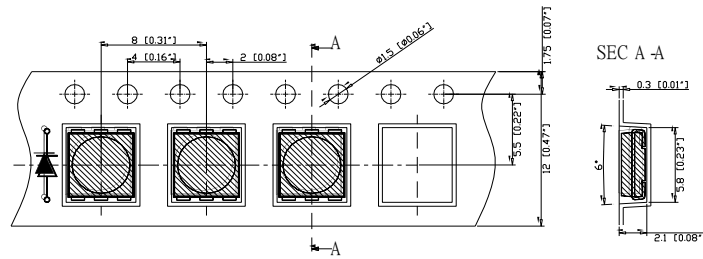
## Packing

Reel Dimension:



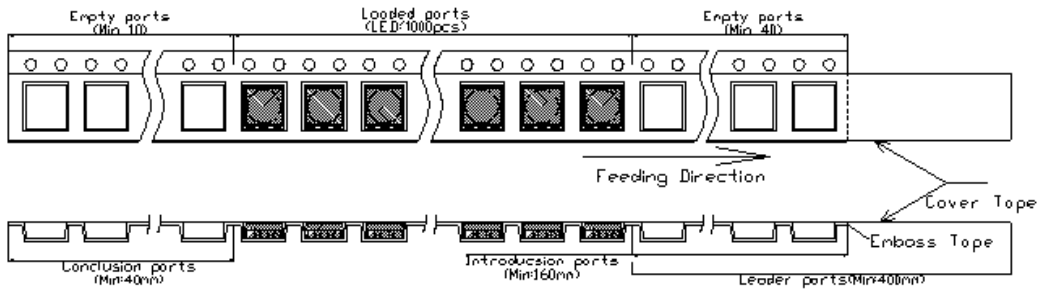
Unit: mm

Tape Dimension:

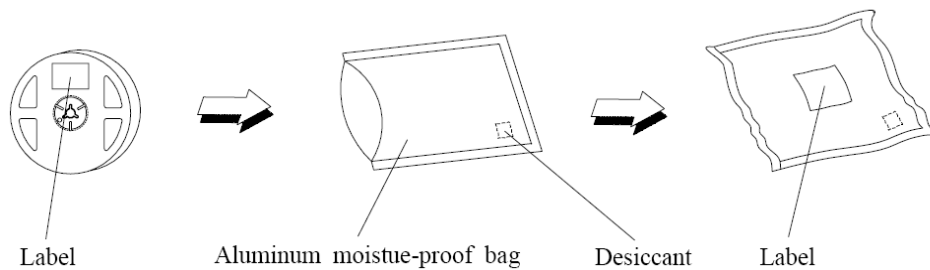


Unit: mm

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
QBLP679E-RGB	QBLP679E-RGB	Red: Iv=840mcd typ. / Color=615nm to 630nm	1000 units
		True Green: Iv=1500mcd typ. / Color=520nm to 530nm	
		Blue: Iv=285mcd typ. / Color=465nm to 475nm	

## Revision History

Description:	Revision #	Revision Date
New Release of QBLP679E-RGB	V1.0	02/14/2012
Add ESD HBM information	V1.1	08/12/2013
Update to new format / Update Packing Spec	V2.0	09/10/2013
Update dimension drawing, wavelength, and brightness	V2.1	03/20/2014
Update brightness (mcd) binning for red color	V2.2	03/23/2021

## 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.