

QT-Brightek PLCC Series

3535 PLCC6 RGB LED

Part No.: QBLP678-RGB1

Product: QBLP678-RGB1	Date: August 16, 2019	Page 1 of 10
	Version# 3.1	

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Introduction

Feature:

- Diffused lens
- Package in tape and reel
- Black face
- AlInGaP technology for Red (R)
- InGaN technology for Blue (B) and True Green (G)
- 120 degree viewing angle

Description:

This PLCC6 RGB LEDs have a height profile of 2.80mm. Combination of high brightness output and robust package, this LED is ideal for architecture lighting, status indication, and color mixing applications.

Application:

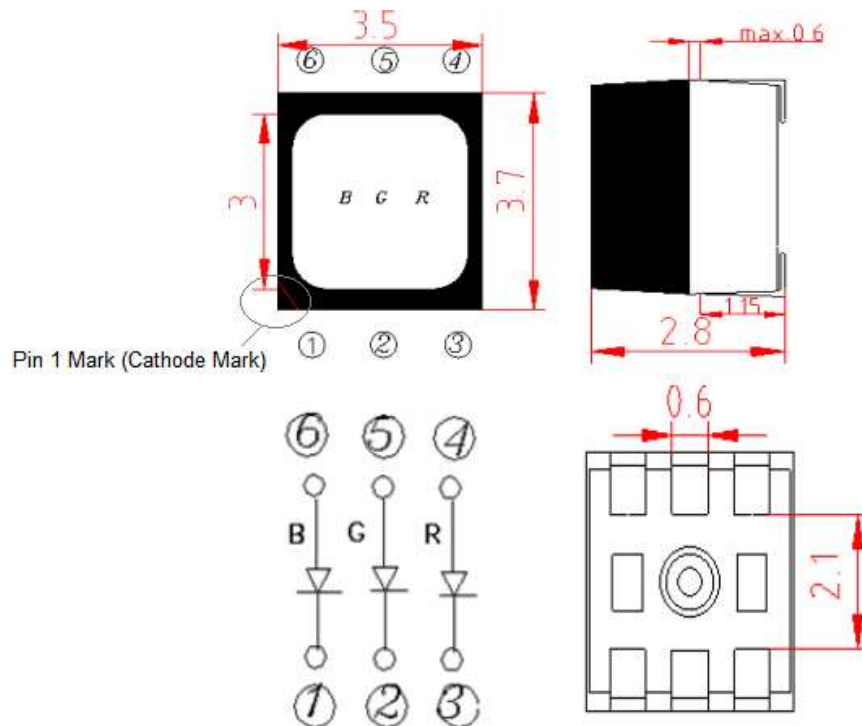
- Status indication
- Back lighting application
- Architecture lighting

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



Dimension:



Units: mm / tolerance = +/-0.2mm

Electrical / Optical Characteristic (T_A=25 °C)

Product	Color	I _F (mA)	V _F (V)			λ _D (nm)			I _V (mcd)	
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP678-RGB1	Red	20	1.7	2.0	2.6	614	622	629	530	700
	True Green	20	2.4	3.2	3.3	517	522	532	1050	1600
	Blue	20	2.6	3.2	3.5	461	467	476	290	440

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)**
AllnGaP (R)	78	30	100	5	-40 to +100	-40 to +100	260
InGaN (IB/IG)	105	30	100	5	-40 to +100	-40 to +100	260

*Duty 1/10 @ 1kHz

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

Luminous Intensity I_V for Red @ I_F=20mA

Bin	Min.	Max.	Unit
26	530	700	mcd
27	700	910	
28	910	1180	

Luminous Intensity I_V for True Green @ I_F=20mA

Bin	Min.	Max.	Unit
28	1050	1400	mcd
29	1400	1800	
30	1800	2340	

Luminous Intensity I_V for Blue @ I_F=20mA

Bin	Min.	Max.	Unit
23	290	380	mcd
24	380	500	
25	500	650	

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

Bin	Min.	Max.	Unit
R1	614	619	nm
R2	619	624	
R3	624	629	

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

Bin	Min.	Max.	Unit
TG1	517	522	nm
TG2	522	527	
TG3	527	532	

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

Bin	Min.	Max.	Unit
B6	461	466	nm
B7	466	471	
B8	471	476	

Note:

Tolerance of measurement of forward voltage: 0.1V

Tolerance of measurement of luminous intensity: $\pm 15\%$ Tolerance of measurement of dominant wavelength: $\pm 2\text{nm}$

Characteristic Curves

Figure 1. Relative Luminous Flux vs. Forward Current

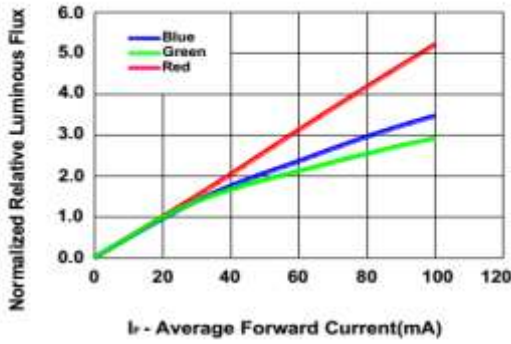


Figure 2. Forward Current VS. Forward Voltage

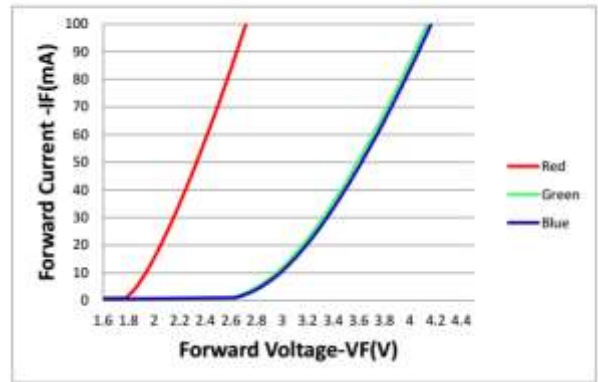


Figure 3. Ambient Temperature VS Forward current

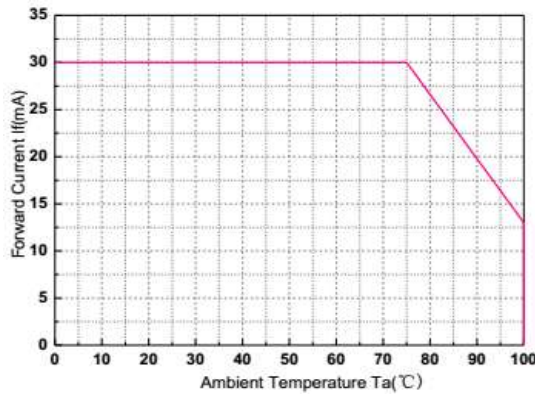


Figure 4. Relative Spectral Power Distribution vs. Wavelength

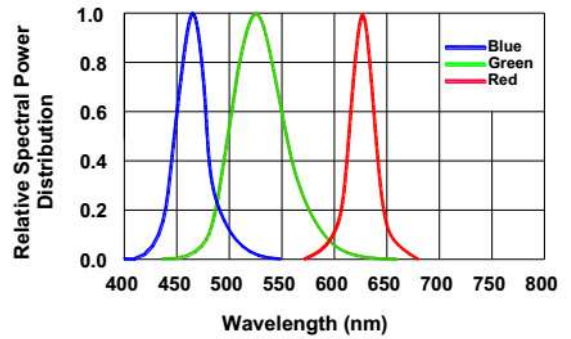
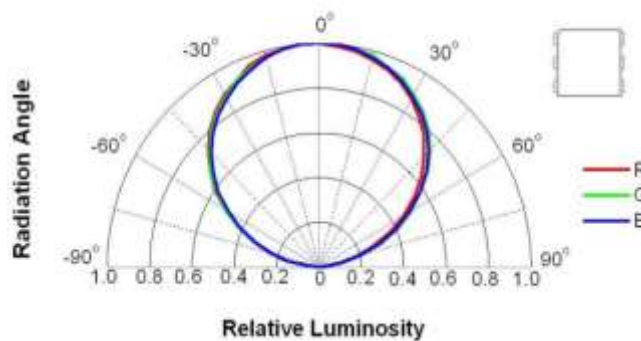
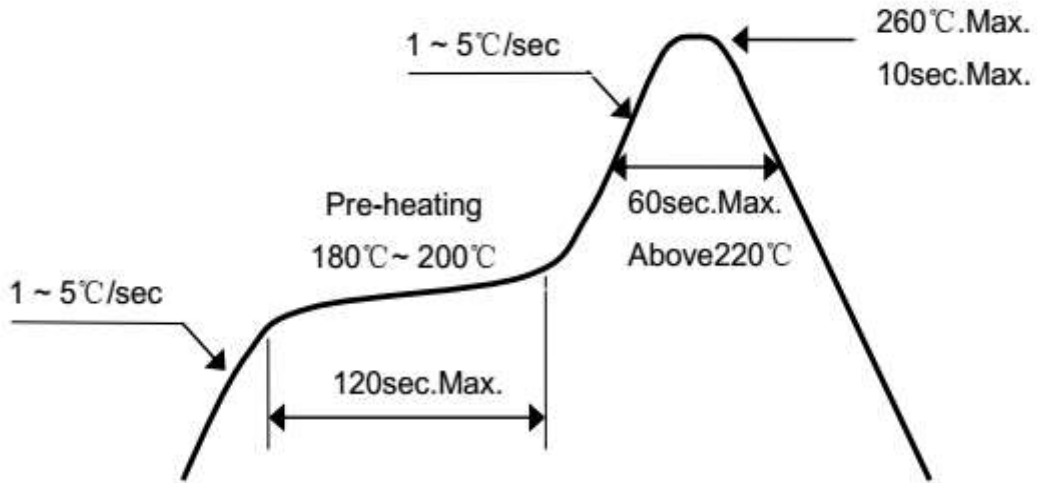


Figure 5. Relative Luminosity VS. Radiation Angle

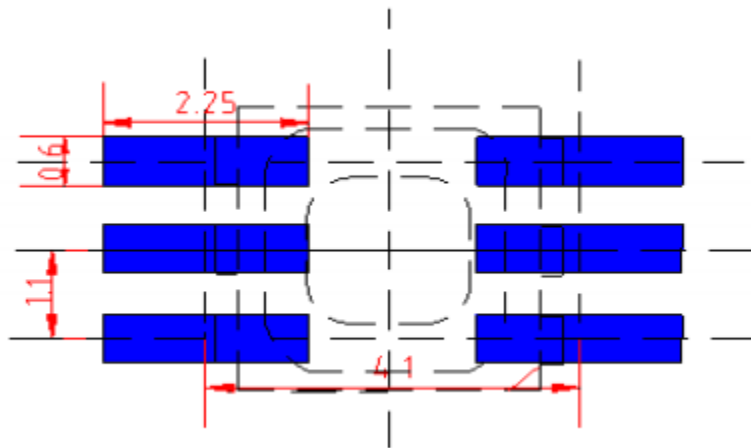


Solder Profile & Footprint

Lead-free Solder



Recommended Pad Layout

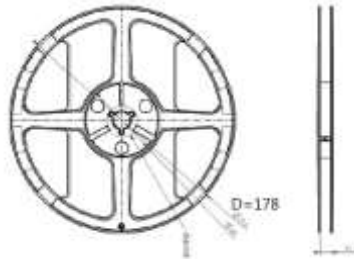


Units: mm

Tolerance: ± 0.2mm

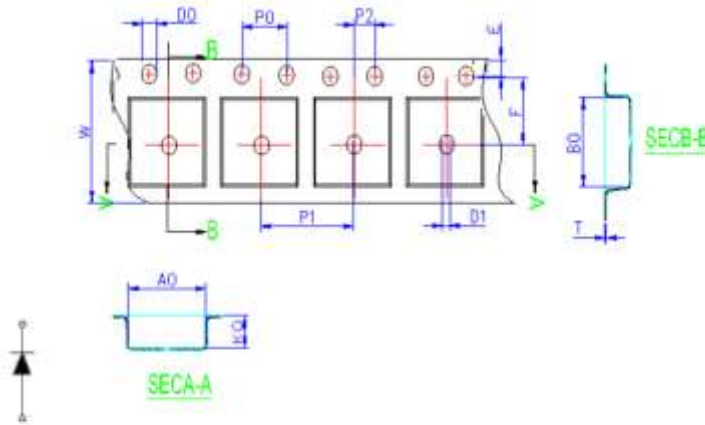
Packing

Reel Dimension:



Unit: mm

Tape Dimension:

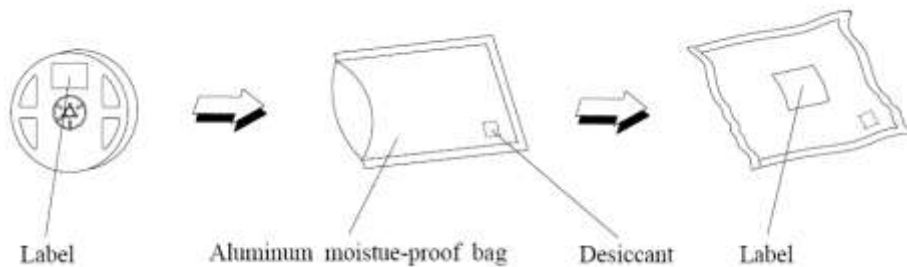


Unit: mm

Symbol	A0	B0	K0	P0	P1	P2	T
Spec	3.60±0.1	3.60±0.1	3.10±0.1	4.00±0.1	8.00±0.1	2.00±0.1	0.32±0.05
Symbol	E	F	D0	D1	W		
Spec	1.75±0.1	5.50±0.1	1.50±0.1	2.3±0.1	12.0±0.1		

Unit: mm

Packaging Specifications:



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
QBLP678-RGB1	QBLP678-RGB1	Per bin selection on page 4 and 5.	500 units

Revision History

Description:	Revision #	Revision Date
New Release of QBLP678-RGB1 Black Face version	V1.0	09/02/2011
Update Format	V1.1	03/19/2012
Update Spec	V1.2	04/26/2012
Update electrical/ Optical spec/ package Dimensions	V2.0	01/15/2015
Update P/N Typo on the Cover Page	V2.1	04/14/2015
Update dimension drawing and spec	V3.0	10/19/2016
Update brightness range for Red / Update wavelength range for Green	V3.1	08/16/2019

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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.