QT-Brightek PLCC Series

0606 PLCC4 RGB LED

Part No.: QBLP1515AB-RGB2

A: Common Anode
B: Black Housing
RGB2: Diffused Lens

Table of Contents:

Introduction

Feature:

- White diffused lens
- Black housing
- 0606 (1.55 x 1.5mm) PLCC-4 pkg
- RGB LED
- Common anode
- Beam angle: 120 deg typ.
- Silicone lens
- MSL 2A
- Height profile: 1mm

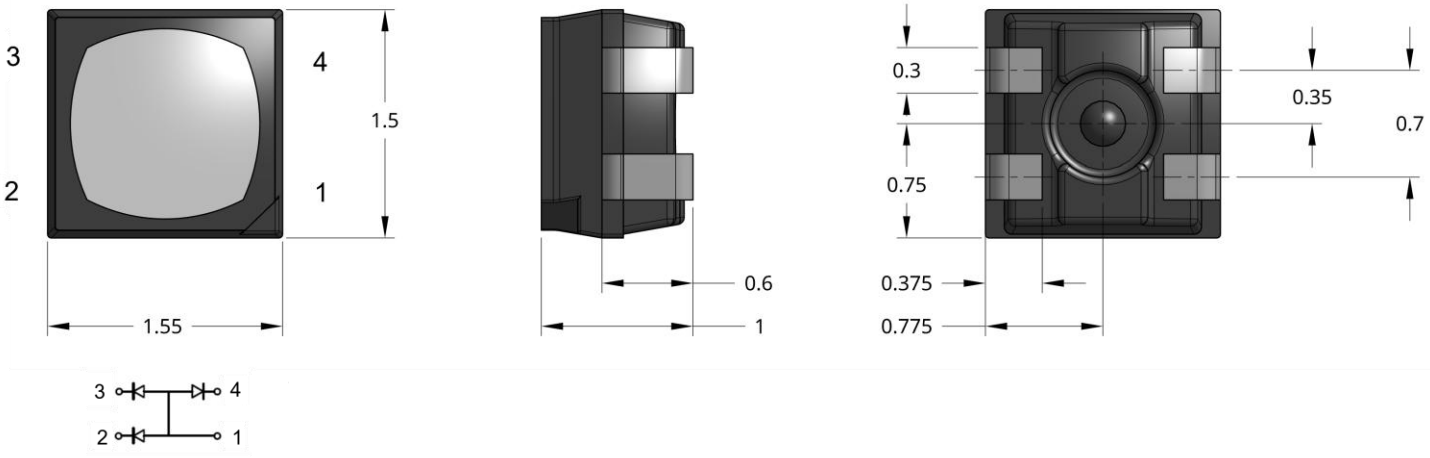
Application:

- Status indication
- Back lighting application
- Display signage board

Certification & Compliance:

- ISO9001
- RoHS Compliant

Dimension:



Pin 1: Common Anode
Pin 2: Cathode Blue
Pin 3: Cathode Green
Pin 4: Cathode Red

Units: mm / tolerance = +/-0.2mm

Electrical / Optical Characteristic (T_A=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.
QBLP1515AB-RGB2	Red	20	2.0	2.7	615	620	630	630	220	360	490
	Green	20	3.0	3.3	515	525	530	517	380	600	1080
	Blue	20	3.0	3.3	460	467	475	465	45	120	220

Absolute Maximum Rating

Chip Material	P_d (mW)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)	T_J (°C)	T_{SOL} (°C)**
AlInGaP (R)	67	25	100	5	-40 to +85	-40 to +100	115	260
InGaN (G/B)	82.5	25	100	5	-40 to +85	-40 to +100	115	260

*Pulse width ≤ 0.1 msec, duty ≤ 1/10
**IR Reflow for no more than 10 sec @ 260 °C

Forward Voltage V_F for Red @ I_F=20mA

Bin	Min.	Max.	Unit
V1B	1.5	1.8	V
V1C	1.8	2.1	
V2A	2.1	2.4	

Forward Voltage V_F for Green & Blue @ I_F=20mA

Bin	Min.	Max.	Unit
V2B	2.4	2.7	V
V2C	2.7	3.0	
V3A	3.0	3.3	

Luminous Intensity I_V for Red @ I_F=20mA

Bin	Min.	Max.	Unit
22	220	290	mcd
23	290	380	
24	380	490	

Luminous Intensity I_V for Green @ I_F=20mA

Bin	Min.	Max.	Unit
24	380	490	mcd
25	490	640	
26	640	830	
27	830	1080	

Luminous Intensity I_V for Blue @ I_F=20mA

Bin	Min.	Max.	Unit
18	45	77	mcd
19	77	130	
20	130	170	
21	170	220	

Dominant Wavelength λ_D for Red @ I_F=20mA

Bin	Min.	Max.	Unit
A5	612	617	nm
R1	617	622	
R2	622	627	

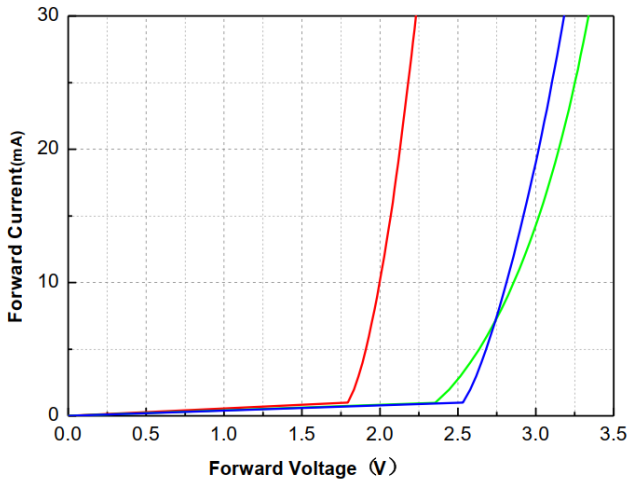
Dominant Wavelength λ_D for Green @ I_F=20mA

Bin	Min.	Max.	Unit
TG1	516	521	nm
TG2	521	526	
TG3	526	531	

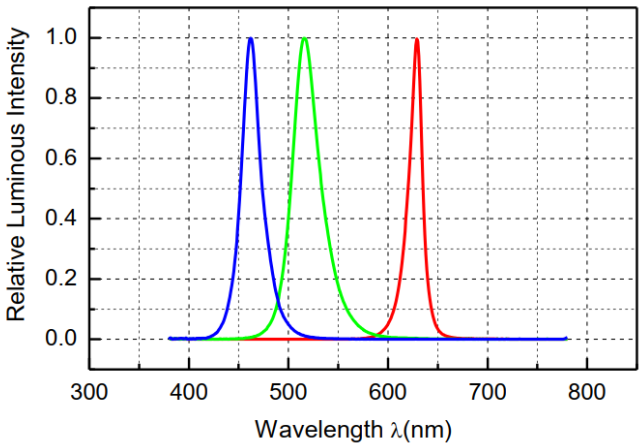
Dominant Wavelength λ_D for Blue @ I_F=20mA

Bin	Min.	Max.	Unit
B5	460	465	nm
B6	465	470	
B7	470	475	

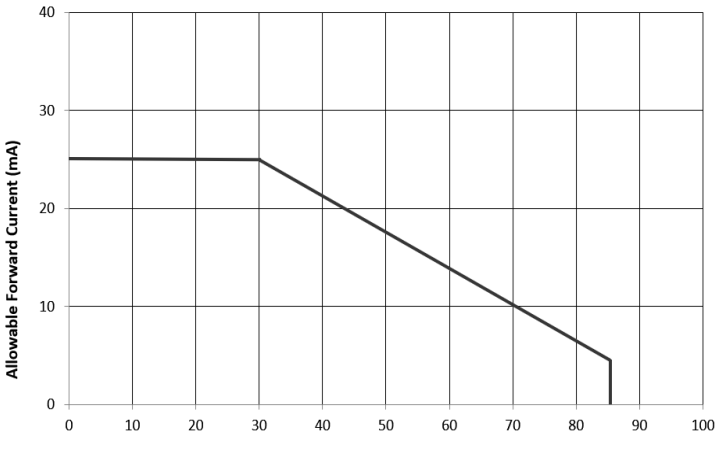
Characteristic Curves



Forward Current VS. Forward Voltage

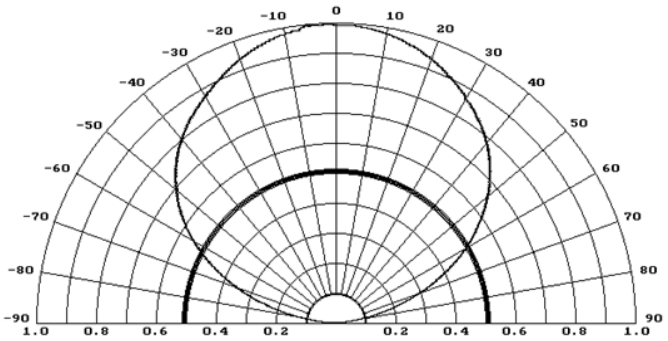


Spectral Power Distribution vs. Wavelength



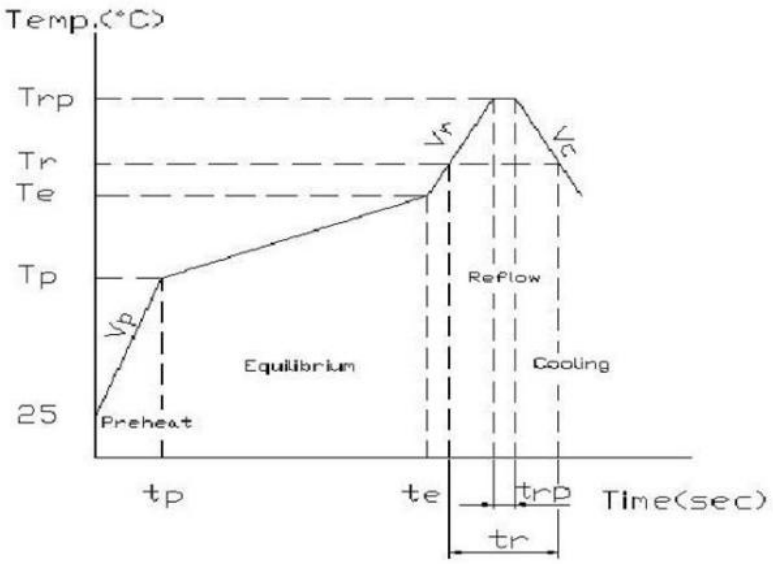
Forward Current vs. Ambient Temperature

Directive Characteristics



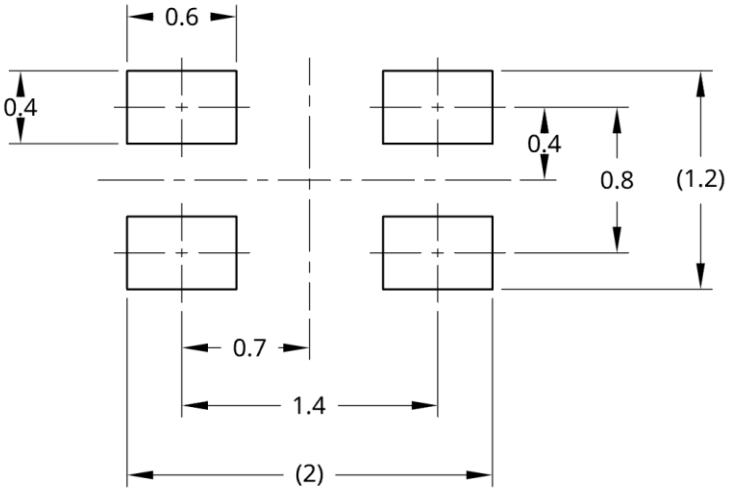
Solder Profile & Footprint

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



(1)Preheat	Ramp-up rate	Vp	1	5	℃/sec
	temperature	Tp	150	–	℃
	time	tp	–	–	sec
(2)Equilibrium	Ramp-up rate	Ve	–	–	℃/sec
	temperature	Te	150	200	℃
	Time	te	60	120	sec
(3)Reflow	Ramp-up rate	Vr	1	5	℃/sec
	temperature	Tr	220	–	℃
	Time	tr	–	60	sec
	Peak temperature	Trp	–	260	℃
	Peak time	trp	–	10	sec
(4)Cooling	Ramp-down rate	Vc	3	6	℃/sec

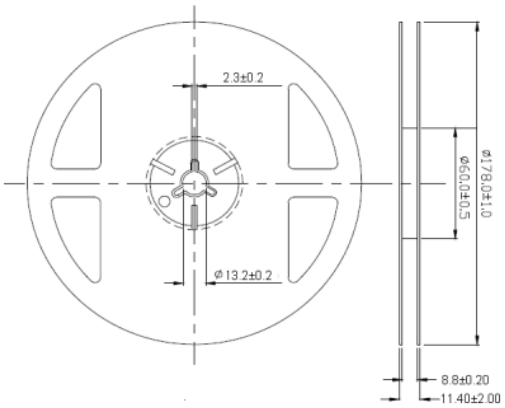
Recommended Solder Pad



Units: mm

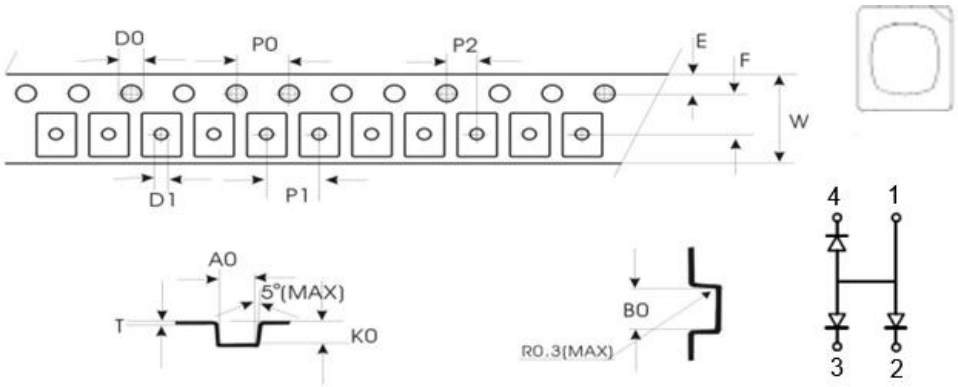
Packing

Reel Dimension:



Unit: mm

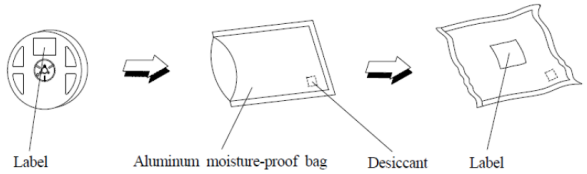
Tape Dimension:



A0	B0	K0	P0	P1	P2
1.8±0.1	1.85±0.1	1.2±0.1	4.0±0.1	4.0±0.1	2.00±0.1
E	F	D0	D1	W	T
1.75±0.10	3.50±0.05	1.5±0.1	1.0±0.1	8.0±0.1	0.25±0.05

Unit: mm

Packaging Specification:



Labeling

Ordering Information

Orderable Part #	Spec Range	Quantity per reel
QBLP1515AB-RGB2	A single reel of LEDs will contain only one brightness bin, one color bin, and one forward voltage bin for each color. Shipments may contain any of the bin ranges listed on page 4 & 5. The specific bin groupings or combinations included in each shipment cannot be predetermined or guaranteed.	3,500 units

Revision History

Description:	Revision #	Revision Date
New Release of QBLP1515AB-RGB2	V1.0	01/09/2026

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