QT-Brightek PLCC Series

0606 PLCC4 RGB LED

Part No.: QBLP1515A-RGB2

A: Common Anode
RGB2: Diffused Lens

Table of Contents:

Introduction

Feature:

- White diffused lens
- 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

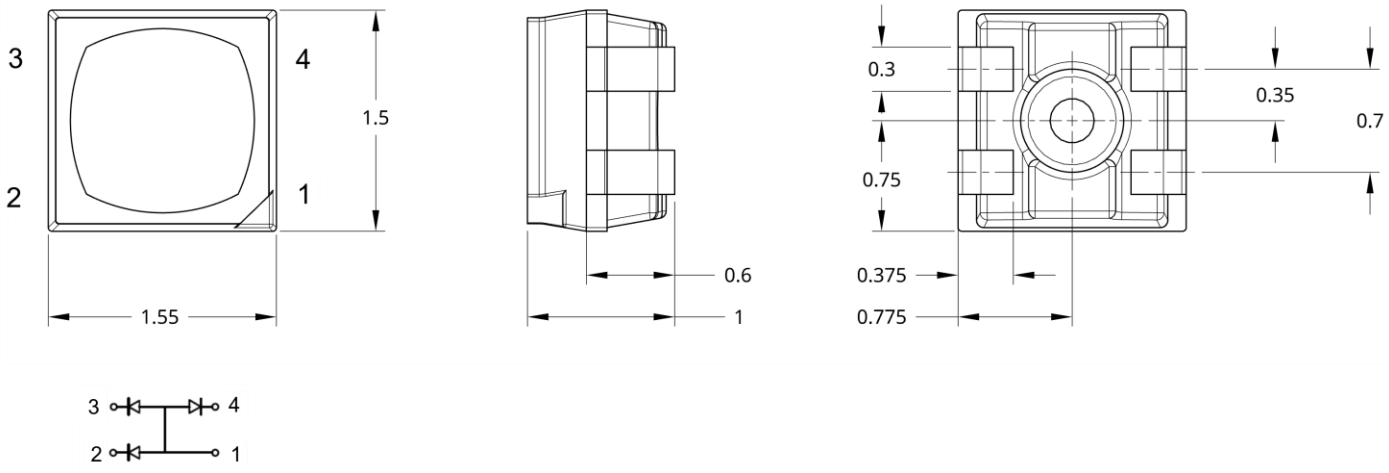
Application:

- 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.
QBLP1515A-RGB2	Red	20	2.0	2.7	615	620	630	630	490	700	1080
	Green	20	3.0	3.3	515	525	530	517	830	1200	1800
	Blue	20	3.0	3.3	460	467	475	465	220	350	490

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
25	490	640	mcd
26	640	830	
27	830	1080	

Luminous Intensity I_V for Green @ I_F=20mA

Bin	Min.	Max.	Unit
27	830	1080	mcd
28	1080	1400	
29	1400	1800	

Luminous Intensity I_V for Blue @ I_F=20mA

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

Dominant Wavelength λ_D for Red @ I_F=20mA

Bin	Min.	Max.	Unit
A5	615	620	nm
R1	620	625	
R2	625	630	

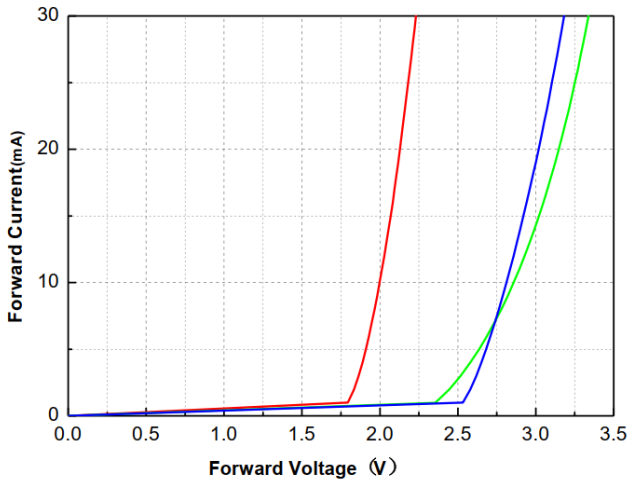
Dominant Wavelength λ_D for Green @ I_F=20mA

Bin	Min.	Max.	Unit
TG1	515	520	nm
TG2	520	525	
TG3	525	530	

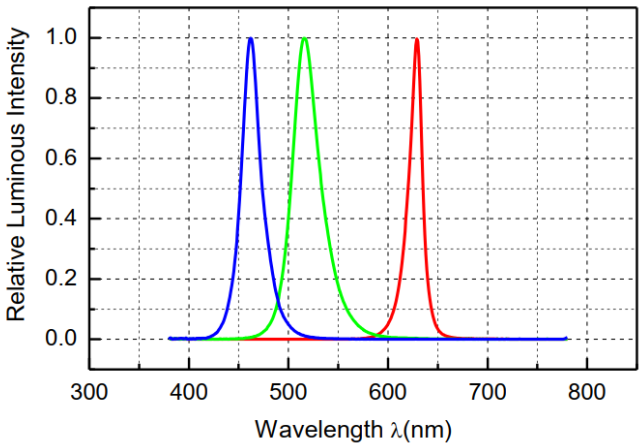
Dominant Wavelength λ_D for Blue @ I_F=20mA

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

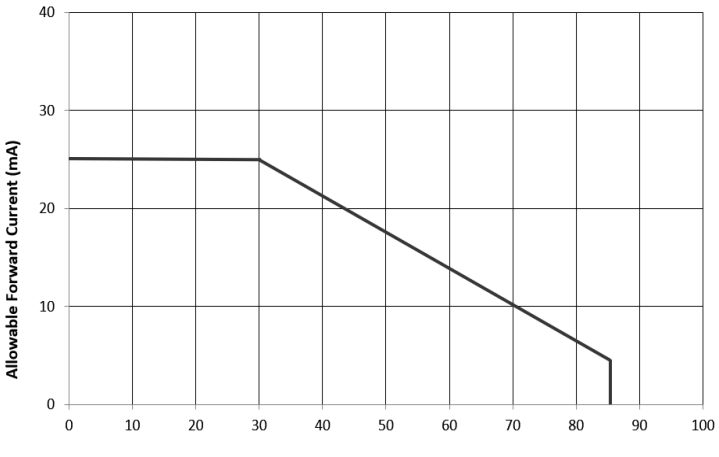
Characteristic Curves



Forward Current VS. Forward Voltage

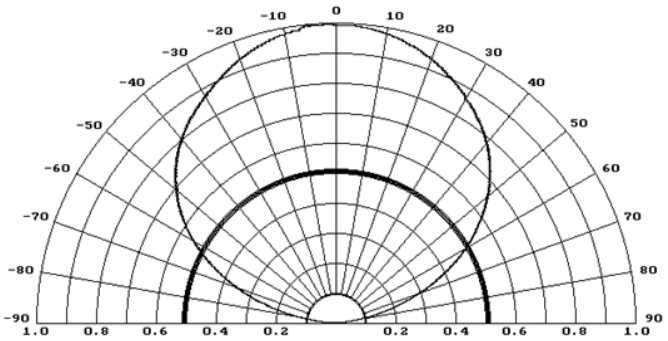


Spectral Power Distribution vs. Wavelength



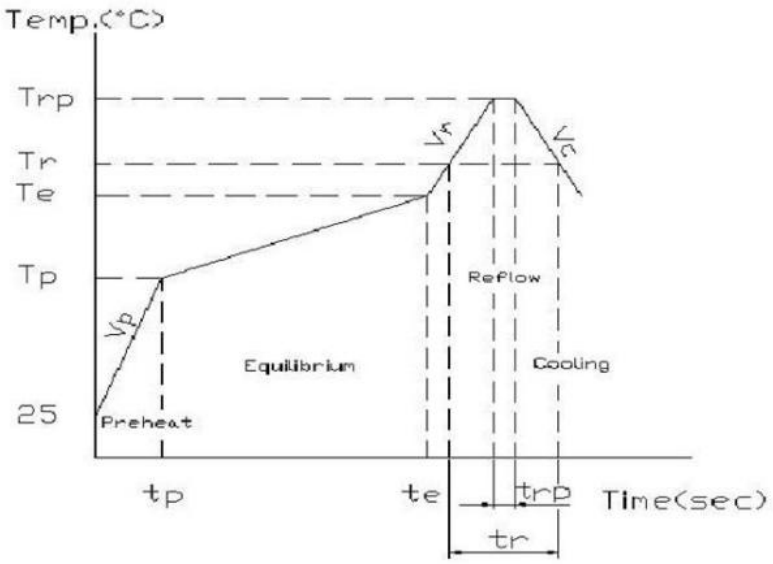
Forward Current vs. Ambient Temperature

Directive Characteristics



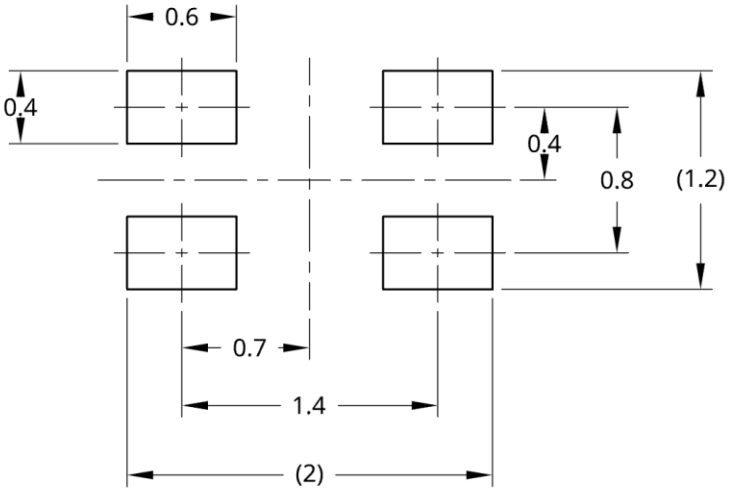
Solder Profile & Footprint

-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

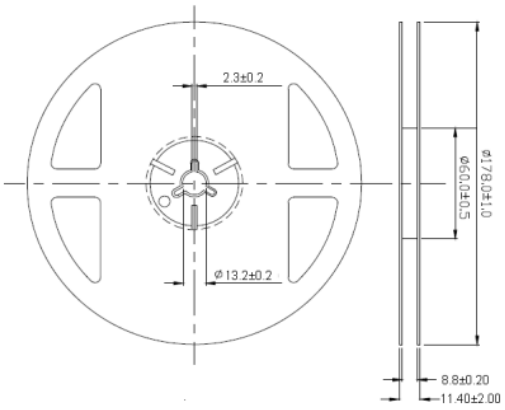
Recommended Solder Pad



Units: mm

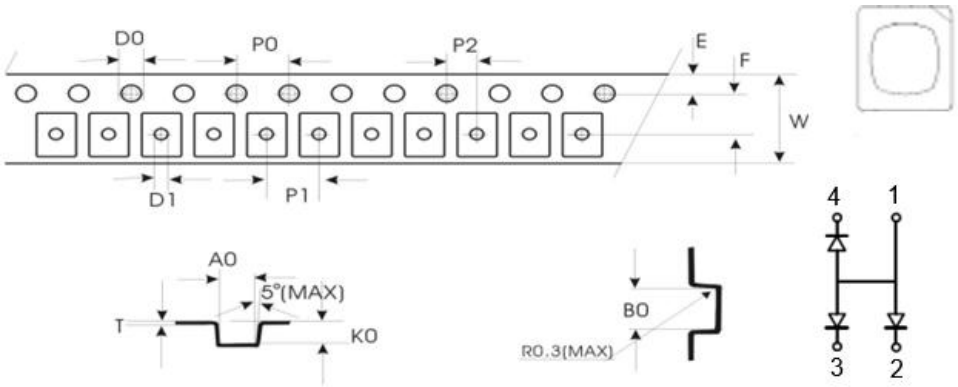
Packing

Reel Dimension:



Unit: mm

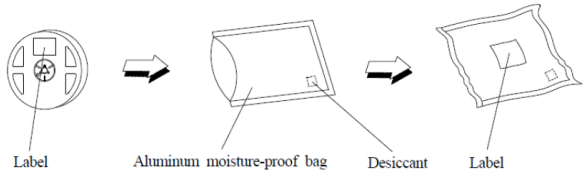
Tape Dimension:



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
QBLP1515A-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 QBLP1515A-RGB2	V1.0	12/16/2025

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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.