QT-Brightek PLCC Series

PLCC4 LED

Part No.: QBLP1515-XX5 Series

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Introduction

Feature:

- Package in tape and reel
- Ultra bright reflector type PLCC4 LED
- InGaN technology for IB/IG
- AlInGaP technology for R/AG/Y/O
- 120 degree viewing angle

Description:

These ultra bright reflector type PLCC4 LEDs have a height profile of 1.00mm. Combination of high brightness output and robust package, these LEDs are ideal for architecture lighting, status indication, and industrial equipment lighting applications.

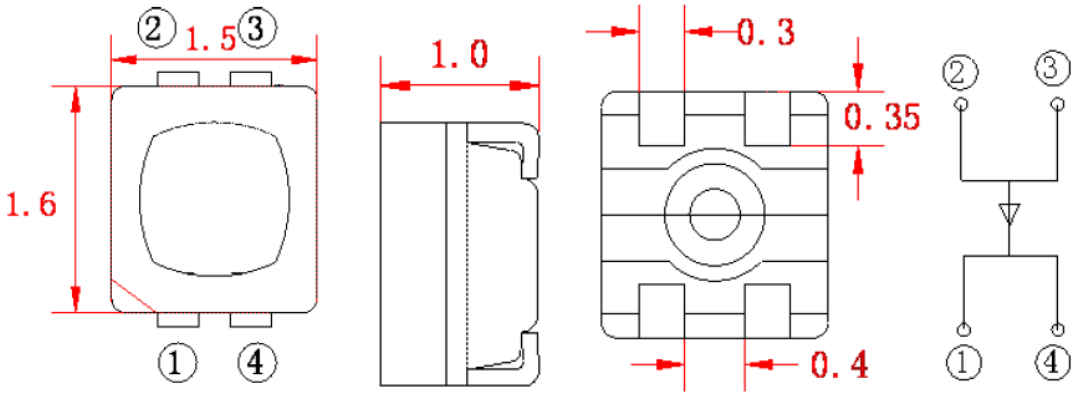
Application:

- Status indication
- Industrial equipment backlighting
- Architecture lighting

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.2mm

Electrical / Optical Characteristic (Ta=25 °C)

Product	Color	I_F (mA)	V_F (V)		λ_D (nm) / λ_P (nm) for UV			I_V (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP1515-IB5	Blue	5	3.1	3.4	460	465	470	45	100
QBLP1515-IG5	True Green	5	3.1	3.4	515	520	530	290	400
QBLP1515-R5	Red	5	1.9	2.5	620	625	630	16	45
QBLP1515-AG5	Yellow Green	5	1.9	2.5	565	570	575	16	30
QBLP1515-Y5	Yellow	5	1.9	2.5	585	590	595	16	30
QBLP1515-O5	Orange	5	1.9	2.5	595	603	610	27	50

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)**
InGaN (IB/IG)	55	15	60	5	-30 ~ +85	-40 ~ +85	260
AlInGaP (R/AG/Y/O)	32	15	50	5	-30 ~ +85	-40 ~ +85	260

*Duty 1/8 @ 1KHz

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

Forward Voltage V_F for AlInGaP @ I_F=5mA

Bin	Min.	Max.	Unit
☐	1.5	2.5	V

Forward Voltage V_F for InGaN @ I_F=5mA

Bin	Min.	Max.	Unit
e	2.5	2.8	V
f	2.8	3.1	
g	3.1	3.4	

Dominant Wavelength λ_D for Blue @ I_F=5mA

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

Dominant Wavelength λ_D for Green @ I_F=5mA

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

Dominant Wavelength λ_D for Red @ I_F=5mA

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

Dominant Wavelength λ_D for Yellow Green @ I_F=5mA

Bin	Min.	Max.	Unit
Y1	565	570	nm
Y2	570	575	

Dominant Wavelength λ_D for Yellow @ I_F=5mA

Bin	Min.	Max.	Unit
Y5	585	590	nm
Y6	590	595	

Dominant Wavelength λ_D for Orange @ I_F=5mA

Bin	Min.	Max.	Unit
A1	595	600	nm
A2	600	605	
A3	605	610	

Luminous Intensity I_V @ I_F=5mA

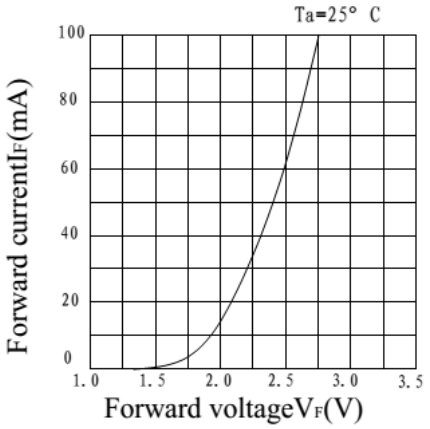
Bin	Min.	Max.	Unit
16	16	27	mcd
17	27	45	
18	45	77	
19	77	130	
20	130	170	
21	170	230	
22	230	290	
23	290	380	
24	380	490	
25	490	640	

Note:
Tolerance of measurement of forward voltage: ±0.1V
Tolerance of measurement of luminous intensity: ±15%
Tolerance of measurement of dominant wavelength: ±2nm

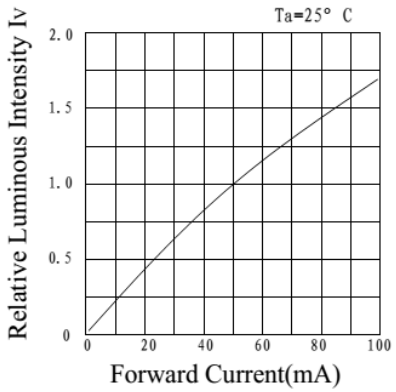
Characteristic Curves

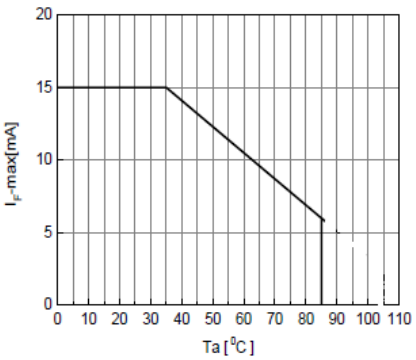
AlInGaP(R/AG/Y/O/S)

FORWARD CURRENT VS. FORWARD VOLTAGE

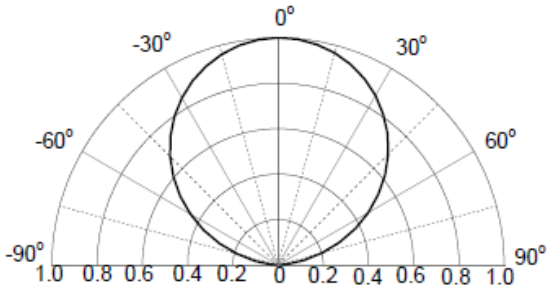


RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



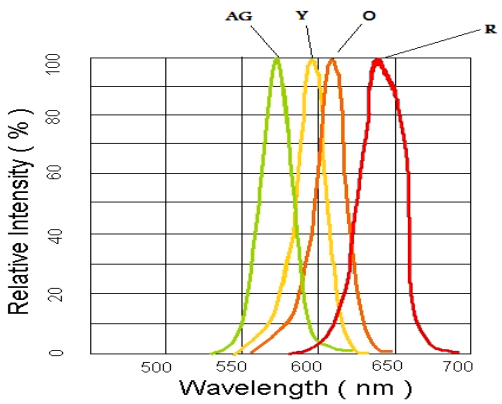


Forward Current vs. Ambient Temperature



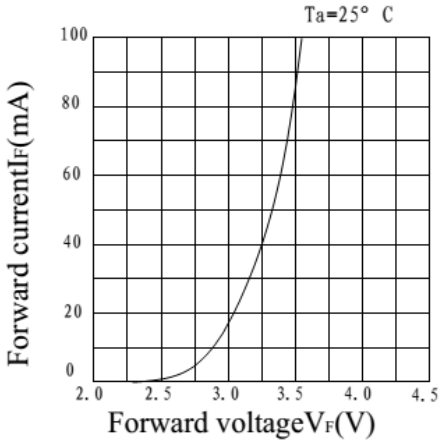
Relative Luminosity VS. Radiation Angle

Relative Intensity vs. Wavelength

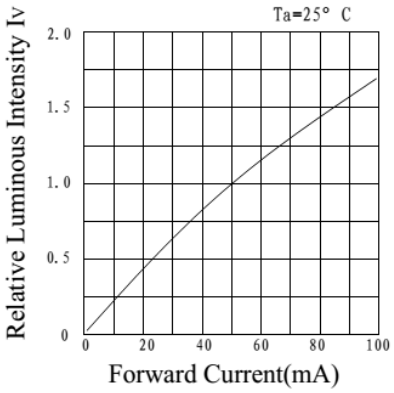


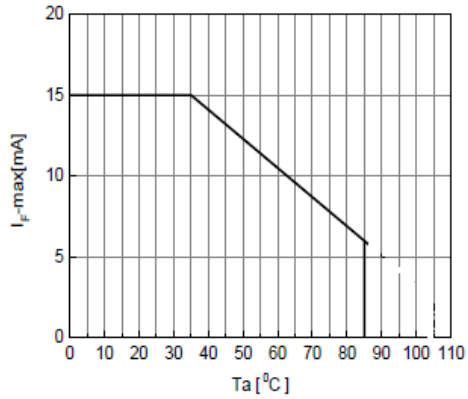
InGaN (IB/IG/UV)

FORWARD CURRENT VS. FORWARD VOLTAGE

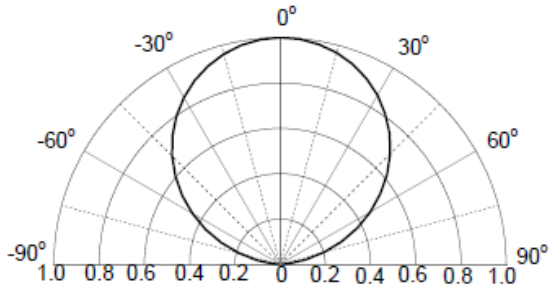


RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

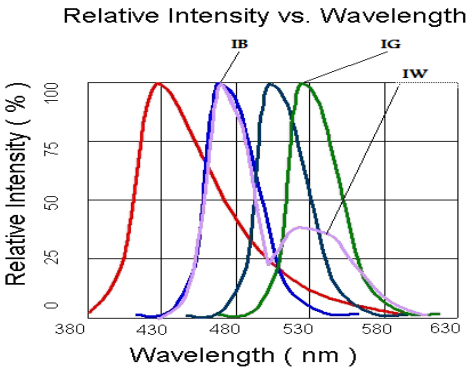




Forward Current vs. Ambient Temperature

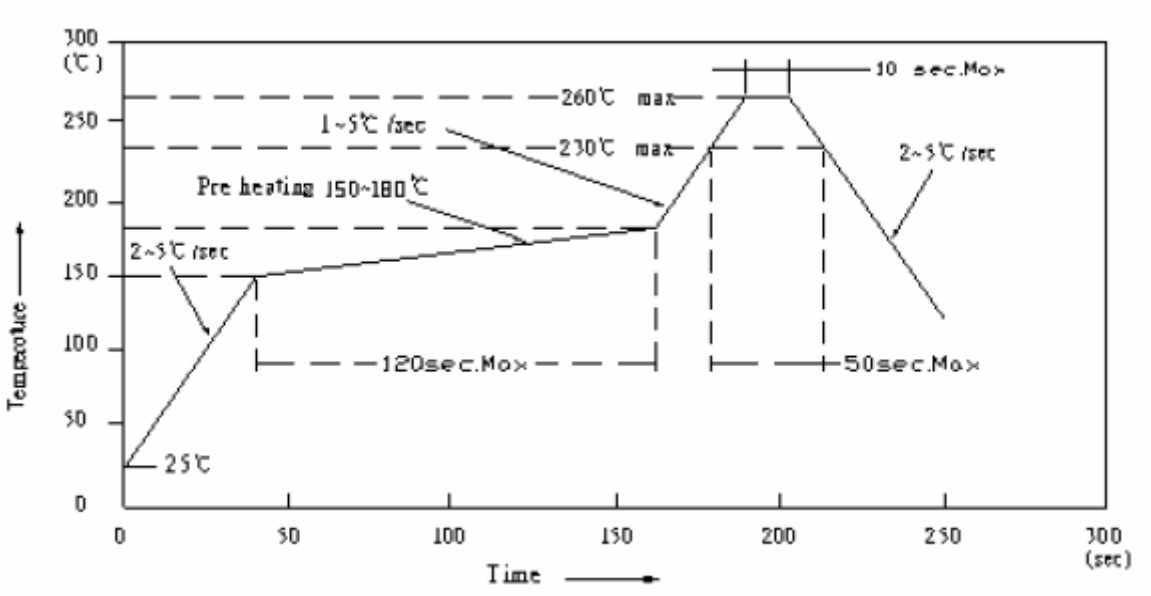


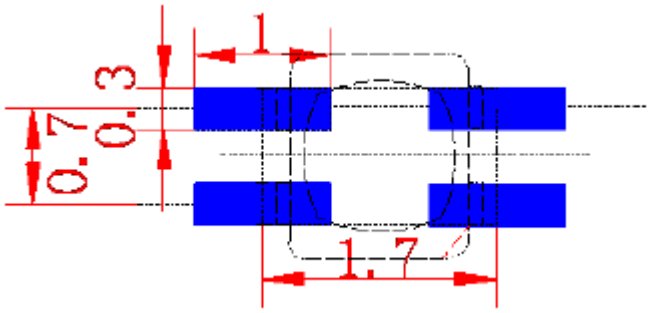
Relative Luminosity VS. Radiation Angle



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):

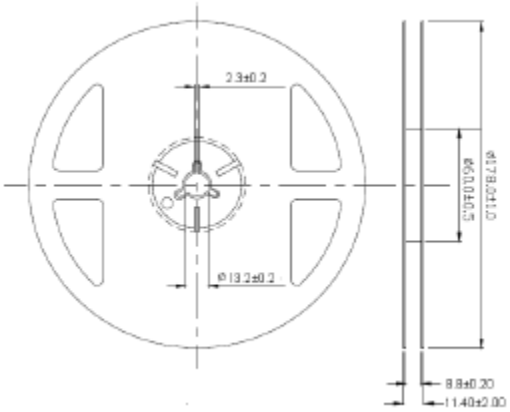




Units: mm tolerance: +/- 0.2mm

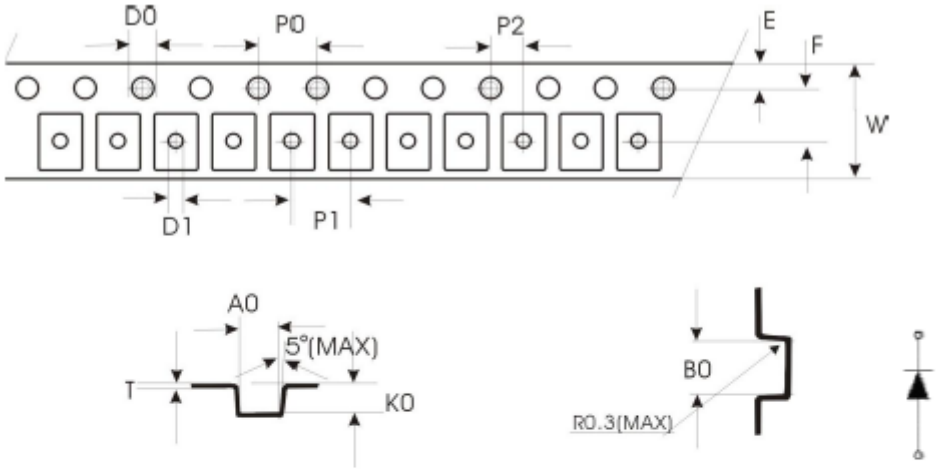
Packing

Reel Dimension:



Unit: mm

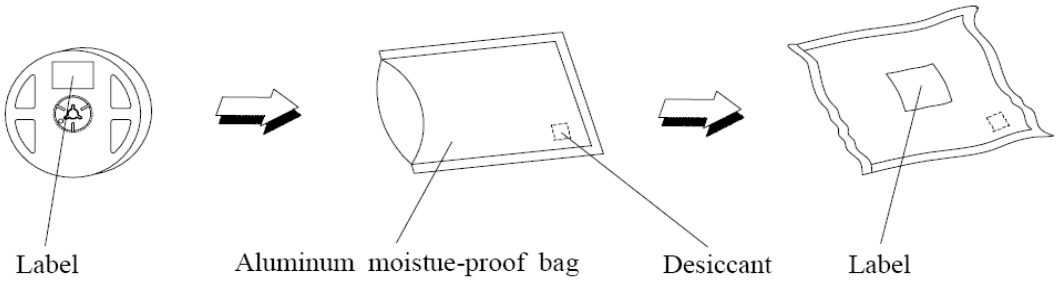
Tape Dimension:



Symbol	A0	B0	K0	P0	P1	P2	T
Spec	1.8±0.1	1.85±0.1	1.2±0.1	4.0±0.1	4.0±0.1	2.00±0.1	0.25±0.05
Symbol	E	F	D0	D1	W	P0	
Spec	1.75±0.10	3.50±0.05	1.5±0.1	1.0±0.1	8.0±0.1	40.0±0.2	

Unit: mm

Packaging Specification:



Labeling

Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP1515-IB5	QBLP1515-IB5	Iv=100mcd typ. @ 5mA/ λ_D=460nm to 470nm	4,000 units
QBLP1515-IG5	QBLP1515-IG5	Iv=400mcd typ. @ 5mA/ λ_D =515nm to 530nm	4,000 units
QBLP1515-R5	QBLP1515-R5	Iv=45mcd typ. @ 5mA/ λ_D=620nm to 630nm	4,000 units
QBLP1515-AG5	QBLP1515-AG5	Iv=30mcd typ. @ 5mA/ λ_D= 565nm to 575nm	4,000 units
QBLP1515-Y5	QBLP1515-Y5	Iv=30mcd typ. @ 5mA/ λ_D=585nm to 595nm	4,000 units
QBLP1515-O5	QBLP1515-O5	Iv=50mcd typ. @ 5mA/ λ_D= 595nm to 610nm	4,000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBLP1515-XX5_series	V1.0	11/17/2015
Amend Green WLD	V1.1	05/05/2016

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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.