

**QT-Brightek PLCC Series**

**PLCC4 RGB LED**

**Part No.: QBLP1515B-RGBA**

|                         |                         |              |
|-------------------------|-------------------------|--------------|
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|                         | Version# 1.2            |              |

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## Introduction

**Feature:**

- Diffused lens
- Package in tape and reel
- Ultra bright PLCC4 RGB LED
- Common Anode
- InGaN technology for IB/IG
- AlInGaP technology for R
- 120 degree viewing angle
- Black Housing

**Application:**

- Status indication
- Back lighting application
- Architecture lighting

**Certification & Compliance:**

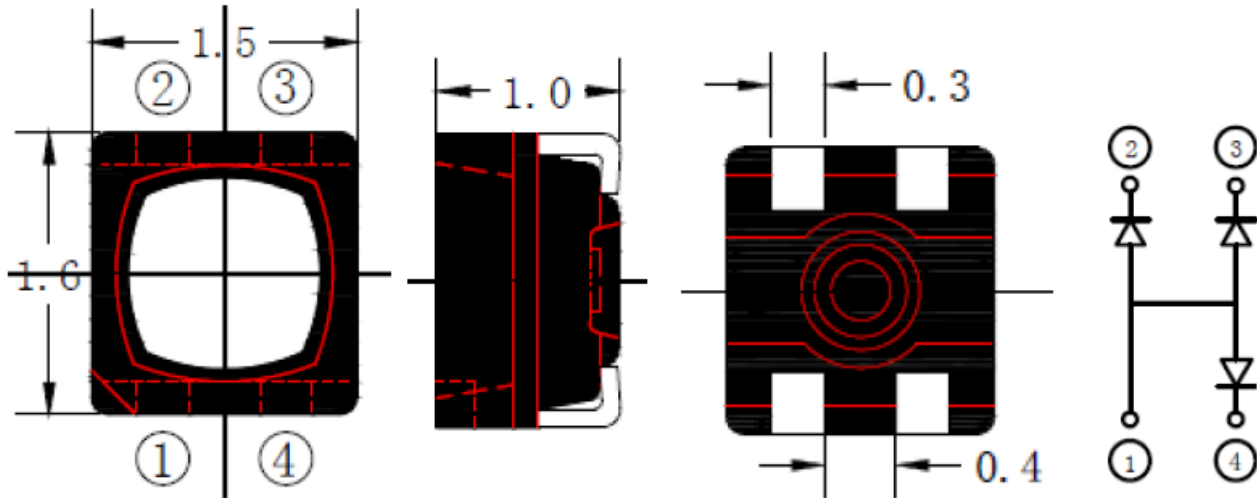
- TS16949
- ISO9001
- RoHS Compliant

**Description:**

This PLCC4 RGB LEDs have a height profile of 1.00mm. Combination of high brightness output and robust package, this LED is ideal for architecture lighting, status indication, and color mixing applications.



**Dimension:**



|   |                        |
|---|------------------------|
| ① | <b>Common Anode</b>    |
| ② | <b>Cathode (Blue)</b>  |
| ③ | <b>Cathode (Green)</b> |
| ④ | <b>Cathode (Red)</b>   |

Units: mm / tolerance = +/-0.2mm

**Electrical / Optical Characteristic (T<sub>A</sub>=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. |
| QBLP1515B-RGBA | Red        | 10                  | 2.0                | 2.4  | 612                 | 622  | 627  | 92                   | 150  |
|                | True Green | 10                  | 3.1                | 3.4  | 516                 | 523  | 531  | 215                  | 300  |
|                | Blue       | 10                  | 3.1                | 3.4  | 460                 | 467  | 475  | 50                   | 77   |

**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)** |
|-----------------|---------------------|---------------------|-----------------------|--------------------|----------------------|----------------------|-------------------------|
| InGaN ( IB/IG ) | 55                  | 15                  | 60                    | 5                  | -30 to +85           | -40 to +85           | 260                     |
| AllnGaP ( R )   | 32                  | 15                  | 60                    | 5                  | -30 to +85           | -40 to +85           | 260                     |

\*Duty 1/10 @ 10KHz

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

**Luminous Intensity I<sub>V</sub> for Red @ I<sub>F</sub>=10mA**

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 19  | 92   | 120  | mcd  |
| 20  | 120  | 156  |      |
| 21  | 156  | 200  |      |

**Luminous Intensity I<sub>V</sub> for True Green @ I<sub>F</sub>=10mA**

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 22  | 215  | 280  | mcd  |
| 23  | 280  | 365  |      |
| 24  | 365  | 470  |      |

**Luminous Intensity I<sub>V</sub> for Blue @ I<sub>F</sub>=10mA**

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 17  | 50   | 65   | mcd  |
| 18  | 65   | 85   |      |
| 19  | 85   | 110  |      |

**Dominant Wavelength  $\lambda_D$  for Red @  $I_F=10mA$** 

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

**Dominant Wavelength  $\lambda_D$  for True Green @  $I_F=10mA$** 

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

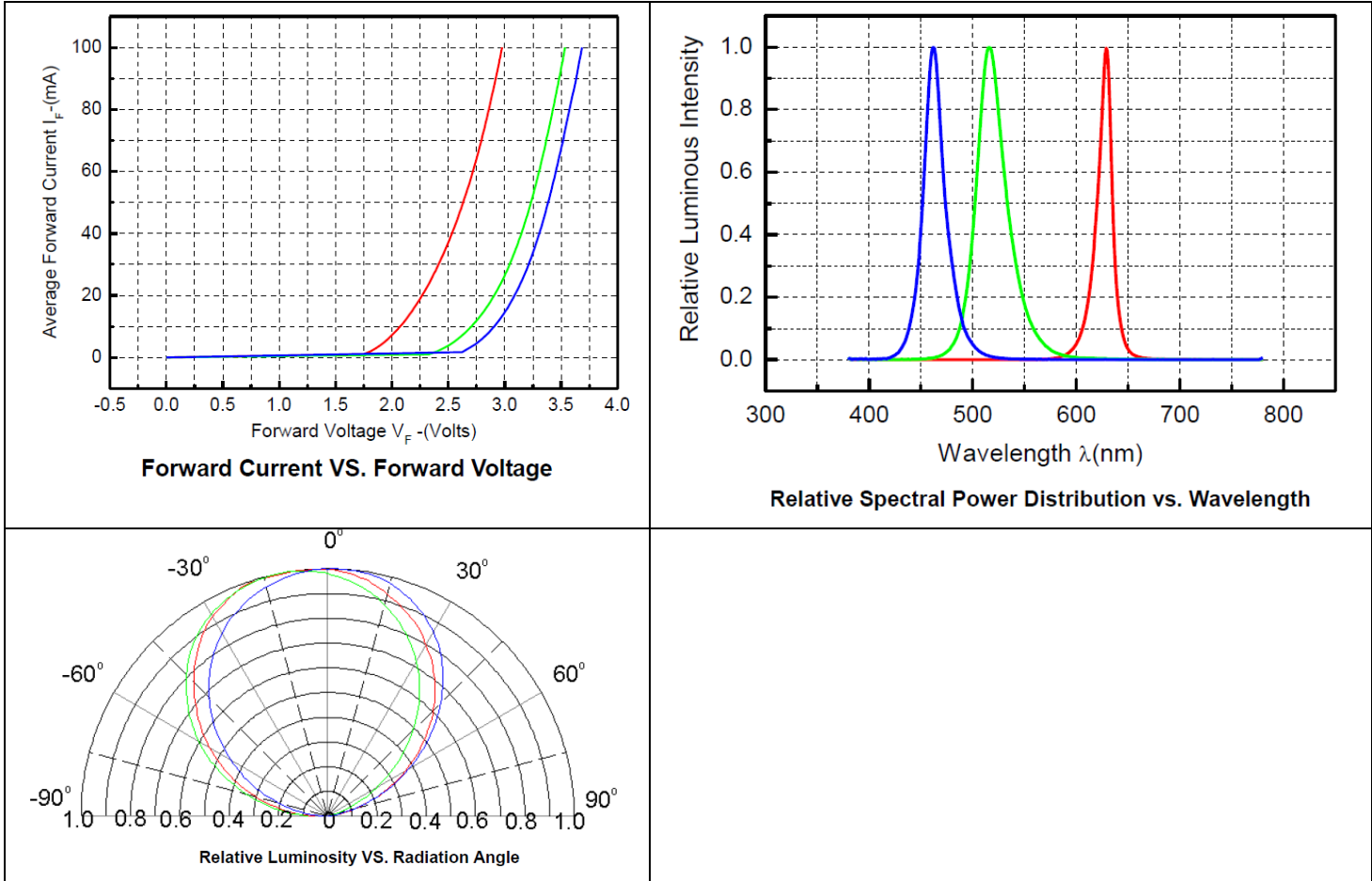
**Dominant Wavelength  $\lambda_D$  for Blue @  $I_F=10mA$** 

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

## Note:

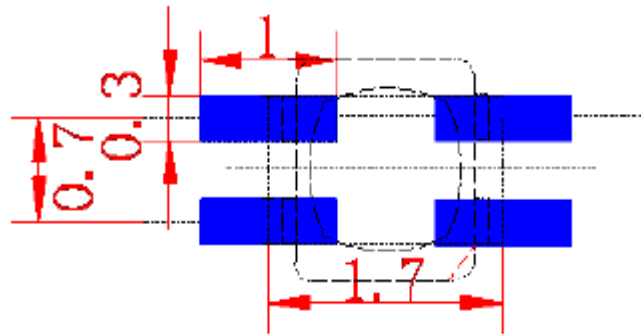
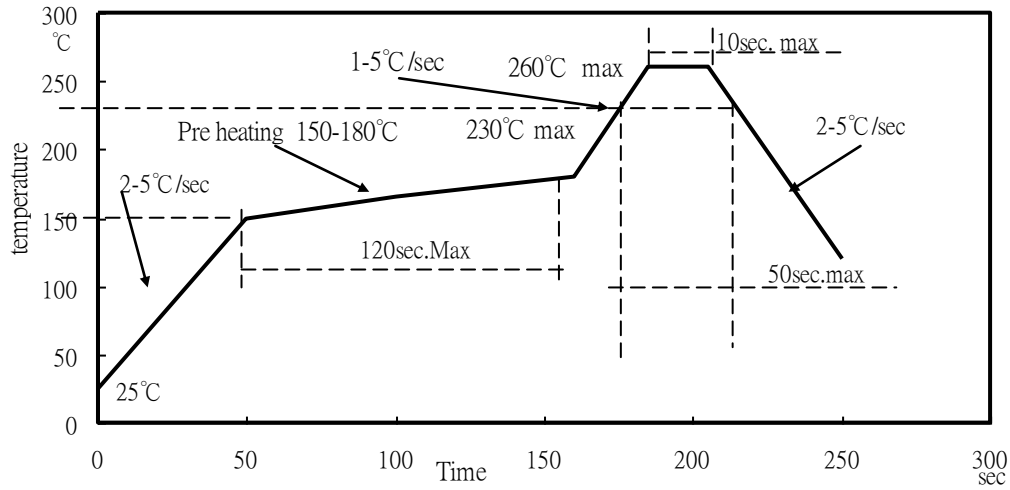
Tolerance of measurement of luminous intensity:  $\pm 15\%$ Tolerance of measurement of dominant wavelength:  $\pm 2nm$

### Characteristic Curves



## Solder Profile & Footprint

- Recommended tin glue 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):



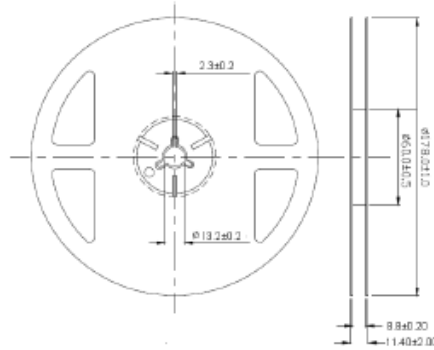
( Proposed Solder footprint )

Units: mm

tolerance: +/- 0.2mm

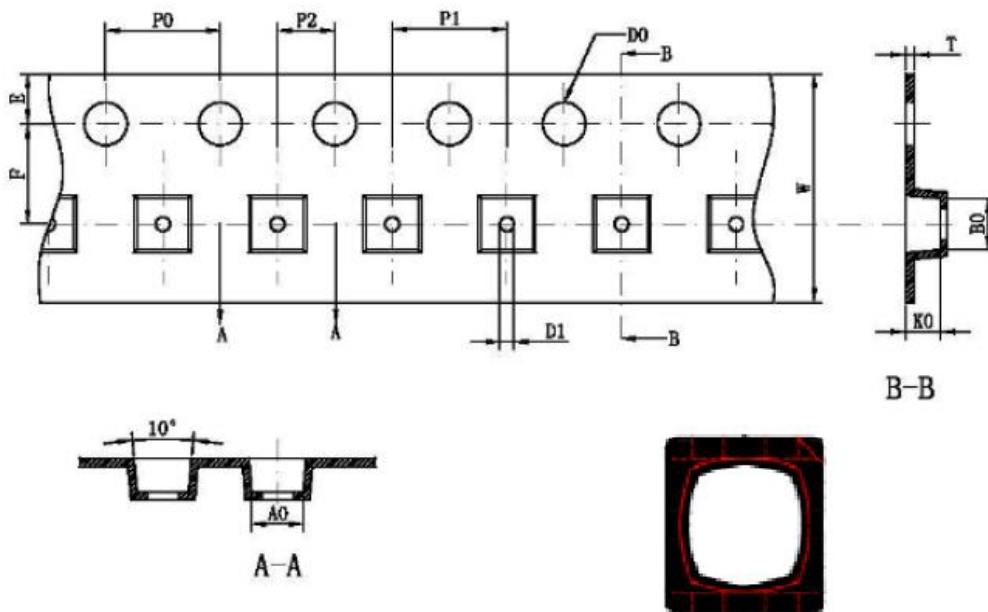
## Packing

Reel Dimension:



Unit: mm

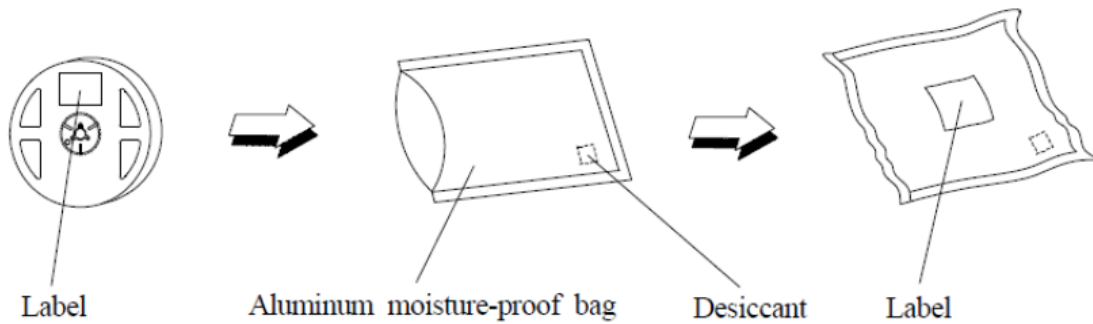
Tape Dimension:



|        |         |           |          |         |                                   |                                   |
|--------|---------|-----------|----------|---------|-----------------------------------|-----------------------------------|
| Symbol | A0      | B0        | K0       | P0      | P1                                | P2                                |
| Spec   | 1.8±0.1 | 1.85±0.1  | 1.20±0.1 | 4±0.1   | 4±0.1                             | 2±0.1                             |
| Symbol | W       | T         | E        | F       | D0                                | D1                                |
| Spec   | 8±0.3   | 0.25±0.05 | 1.75±0.1 | 3.5±0.1 | ∅1.5 <sup>+0.1</sup> <sub>0</sub> | ∅0.5 <sup>+0.1</sup> <sub>0</sub> |

Unit: mm



**Packaging Specification:****Labeling**

Part No: \_\_\_\_\_  
 Customer P/N: \_\_\_\_\_  
 Item: \_\_\_\_\_  
 Q'ty: \_\_\_\_\_  
 Vf: \_\_\_\_\_  
 Iv: \_\_\_\_\_  
 VI: \_\_\_\_\_  
 Date: \_\_\_\_\_

**Made in China****Ordering Information**

| Part #         | Orderable Part # | Spec Range  | Quantity per reel |
|----------------|------------------|---|-------------------|
| QBLP1515B-RGBA | QBLP1515B-RGBA   | Red: 150mcd Typ. @ I <sub>F</sub> =10mA /<br>Color: 612nm to 627nm        | 3,500 units       |
|                |                  | True Green: 250mcd Typ. @<br>I <sub>F</sub> =10mA / Color: 516nm to 531nm |                   |
|                |                  | Blue: 55mcd Typ. @ I <sub>F</sub> =10mA /<br>Color: 460nm to 475nm        |                   |

|                         |                         |              |
|-------------------------|-------------------------|--------------|
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## Revision History

| Description:                            | Revision # | Revision Date |
|---|------------|---------------|
| New Release of QBLP1515B-RGBA           | V1.0       | 11/19/2015    |
| Amend the brightness of RGB             | V1.1       | 03/15/2016    |
| Update packing spec to 3500pcs per reel | V1.2       | 12/11/2017    |
|   |            |               |
|   |            |               |
|   |            |               |
|   |            |               |

## Disclaimer

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