

QT-Brightek PLCC4 Series

PLCC4 RGB LED

Part No.: QBLP677-RGB2 (High Bright)

| | | |
|-------------------------------------|---------------------|--------------|
| Product: QBLP677-RGB2 (High Bright) | Date: June 28, 2016 | Page 1 of 10 |
| | Version# 2.1 | |

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Introduction

Feature:

- Black Face
- High Bright
- White diffused lens
- Ultra bright PLCC4 RGB LED
- Common Anode
- Triangle die placement
- InGaN technology for IB/IG
- AlInGaP technology for R
- 120 degree viewing angle

Description:

This PLCC4 RGB LEDs have a height profile of 1.85mm. Combination of high brightness output and robust package, this LED is ideal for architecture lighting, status indication, and color mixing applications.

Application:

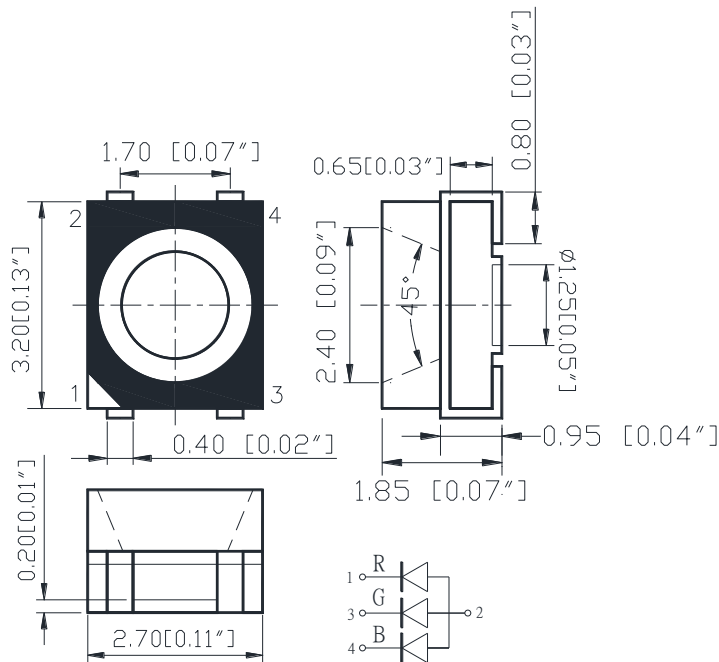
- Status indication
- Back lighting application
- Full Color LED panel

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



Dimension:



Units: mm / tolerance = +/-0.2mm

Electrical / Optical Characteristic: (T=25 °C)

| Product | Color | I _F (mA) | V _F (V) | | λ _D (nm) | | | I _V (mcd) | |
|-------------------------------|------------|---------------------|--------------------|------|---------------------|------|------|----------------------|------|
| | | | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. |
| QBLP677-RGB2 (High Bright) | Red | 20 | 2.0 | 2.5 | 615 | 624 | 630 | 510 | 700 |
| | True Green | 20 | 3.1 | 3.7 | 519 | 525 | 534 | 1080 | 1450 |
| | Blue | 20 | 3.1 | 3.7 | 461 | 470 | 476 | 200 | 280 |

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)** |
|---------------|---------------------|---------------------|-----------------------|--------------------|----------------------|----------------------|-------------------------|
| AllInGaP (R) | 75 | 30 | 125 | 5 | -40 ~ +80 | -40 ~ +85 | 260 |
| InGaN (IB/IG) | 111 | 30 | 125 | 5 | -40 ~ +80 | -40 ~ +85 | 260 |

*Duty 1/8 @ 1kHz

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

Luminous Intensity I_V for Red @ I_F=20mA

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 12 | 510 | 645 | mcd |
| 13 | 645 | 800 | |
| 14 | 800 | 1000 | |

Luminous Intensity I_V for True Green @ I_F=20mA

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 12 | 1080 | 1350 | mcd |
| 13 | 1350 | 1700 | |
| 14 | 1700 | 2125 | |

Luminous Intensity I_V for Blue @ I_F=20mA

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 10 | 200 | 250 | mcd |
| 11 | 250 | 315 | |
| 12 | 315 | 395 | |

Dominant Wavelength λ_D for Red @ $I_F=20mA$

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 2 | 615 | 620 | nm |
| 3 | 620 | 625 | |
| 4 | 625 | 630 | |

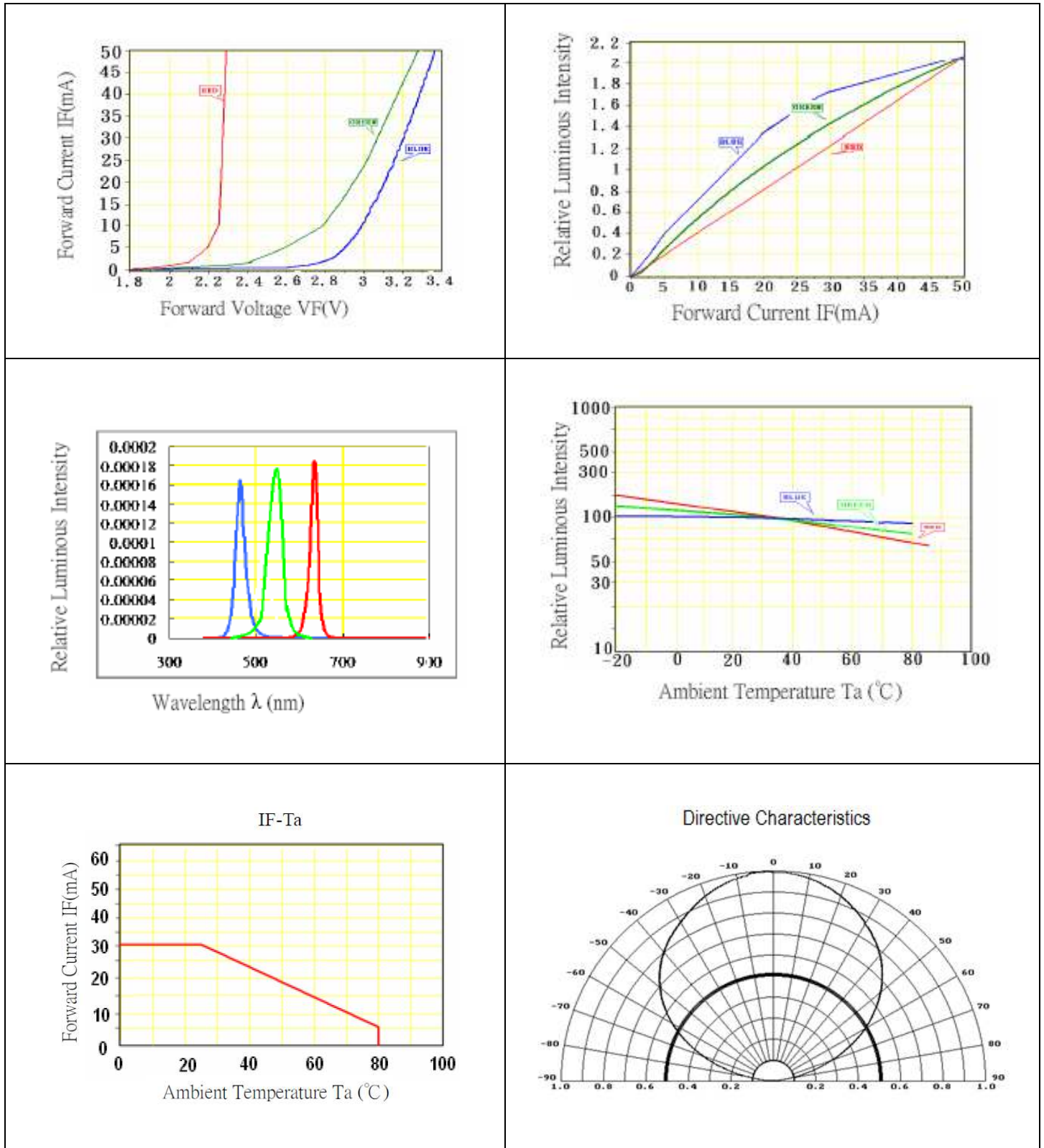
Dominant Wavelength λ_D for True Green @ $I_F=20mA$

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 2 | 519 | 524 | nm |
| 3 | 524 | 529 | |
| 4 | 529 | 534 | |

Dominant Wavelength λ_D for Blue @ $I_F=20mA$

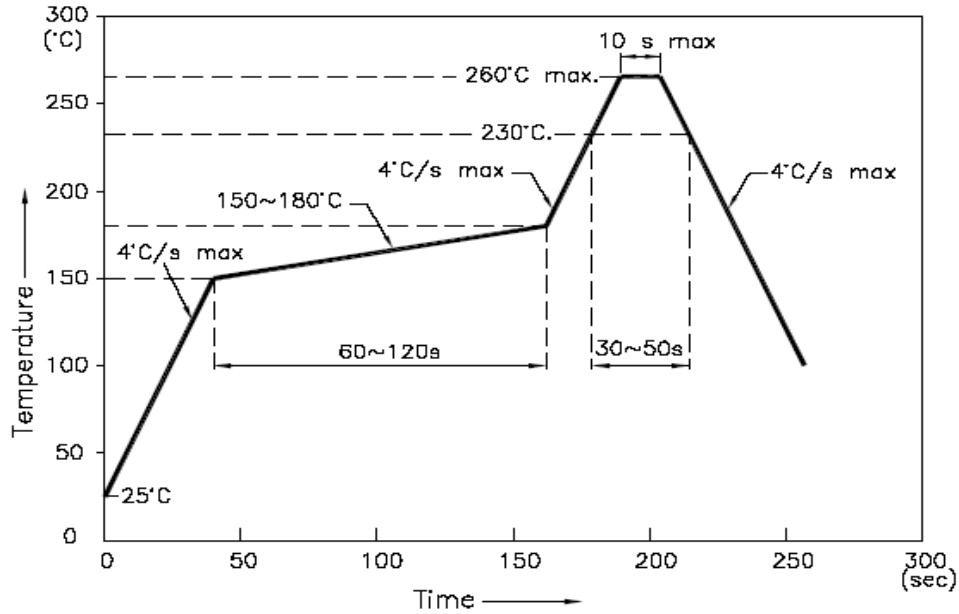
| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| 2 | 461 | 466 | nm |
| 3 | 466 | 471 | |
| 4 | 471 | 476 | |

Characteristic Curves

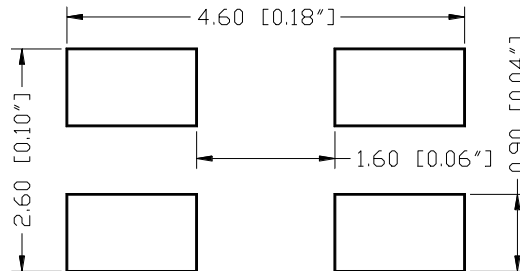


Solder Profile & Footprint

- 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):



Recommended Pad Layout

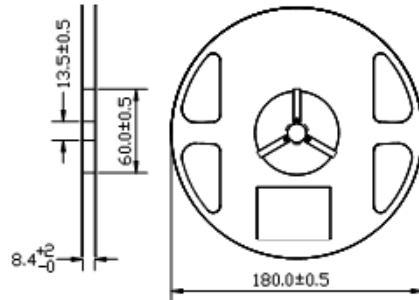


Units: mm

Tolerance: ± 0.2mm

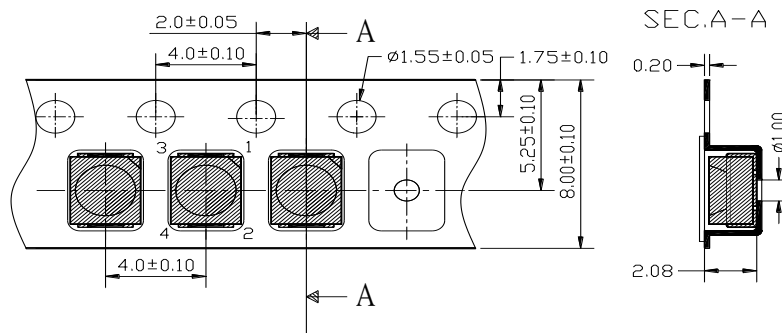
Packing & Labeling

Reel Dimension:



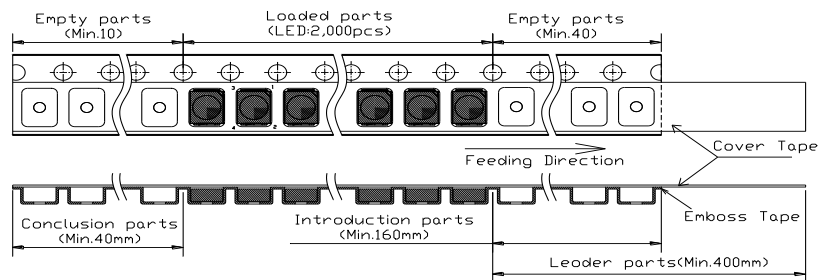
Unit: mm

Tape Dimension:

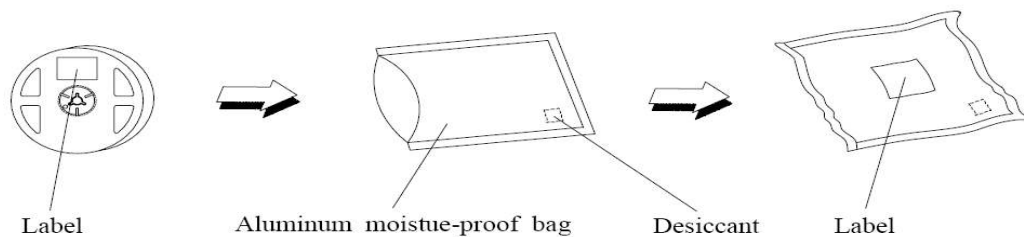


Unit: mm

Arrangement of Tape:



Packaging Specifications:



| | | |
|-------------------------------------|---------------------|--------------|
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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 |
|-------------------------------|-------------------------------|------------------------------------|-------------------|
| QBLP677-RGB2 (High Bright) | QBLP677-RGB2 (High Bright) | Per bin selection on page 4 and 5. | 1,000 units |

Revision History

| Description: | Revision # | Revision Date |
|--|------------|---------------|
| New Release of QBLP677-RGB2 | V1.0 | 02/28/2011 |
| Update Brightness | V1.1 | 10/13/2011 |
| Bin code added/ Indicate the High bright version | V1.2 | 12/28/2011 |
| Amend the bin code | V1.3 | 12/29/2011 |
| Amend the brightness/ Wavelength | V1.4 | 04/03/2012 |
| Update drawing and packing spec | V2.0 | 10/12/2013 |
| Update dimension | V2.1 | 06/28/2016 |

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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.