

QT-Brightek Chip LED Series

SMD 0606 RGB LED

Part No.: QBLP600-RIG

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| | Version# 2.0 | |

Introduction

Feature:

- Water clear lens
- Package in tape and reel
- Ultra bright 0606 LED package
- AlInGaP technology for R
- InGaN technology for IG

Description:

These ultra bright 0606 RIG LEDs have a height profile of 0.80mm. Combination of high brightness output and small footprint, these LEDs are ideal for keypad backlighting, status indication, and color mixing applications.

Application:

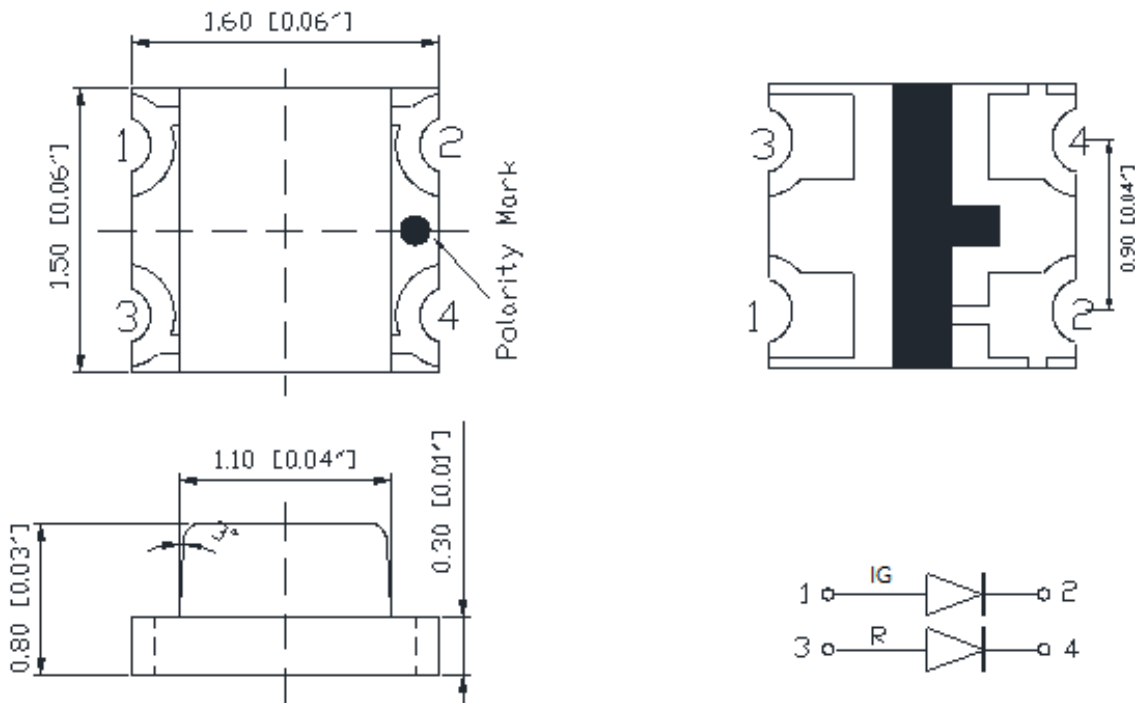
- Status indication
- Back lighting application

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



Dimension:



Units: mm / tolerance = +/-0.1mm

Electrical / Optical Characteristic (Ta=25 °C)

| Product | Color | I _F (mA) | V _F (V) | | λ _D (nm) | | | I _V (mcd) | |
|-------------|------------|---------------------|--------------------|-----|---------------------|------|-----|----------------------|------|
| | | | Typ. | Max | Min | Typ. | Max | Min | Typ. |
| QBLP600-RIG | Red | 20 | 2.0 | 2.5 | 630 | 640 | 650 | 40 | 75 |
| | True Green | 20 | 3.4 | 3.7 | 515 | 520 | 525 | 200 | 380 |

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

*Duty 1/8 @ 1KHz

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

Forward Voltage V_F for AllnGaP @ I_F=20mA

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| □ | 1.7 | 2.5 | V |

Forward Voltage V_F for InGaN @ I_F=20mA

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| f | 2.8 | 3.1 | V |
| g | 3.1 | 3.4 | |
| h | 3.4 | 3.7 | |

Luminous Intensity I_v @ $I_F=20mA$

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| F | 40 | 50 | mcd |
| G | 50 | 63 | |
| H | 63 | 80 | |
| I | 80 | 100 | |
| J | 100 | 125 | |
| K | 125 | 160 | |
| L | 160 | 200 | |
| M | 200 | 250 | |
| N | 250 | 320 | |
| O | 320 | 400 | |
| P | 400 | 500 | |
| Q | 500 | 630 | |

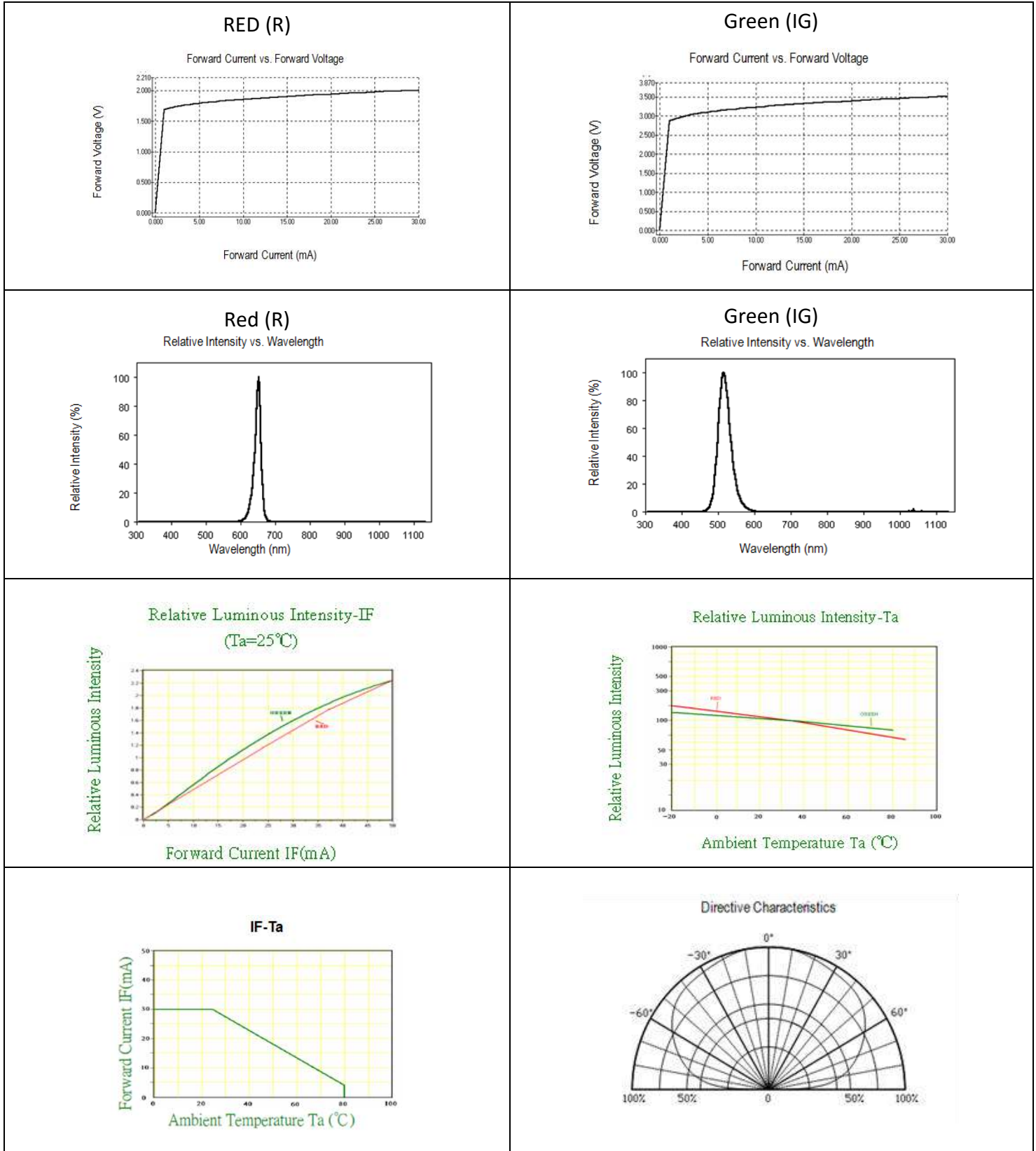
Dominant Wavelength λ_D for Red @ $I_F=20mA$

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| v | 630 | 635 | nm |
| w | 635 | 650 | |

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

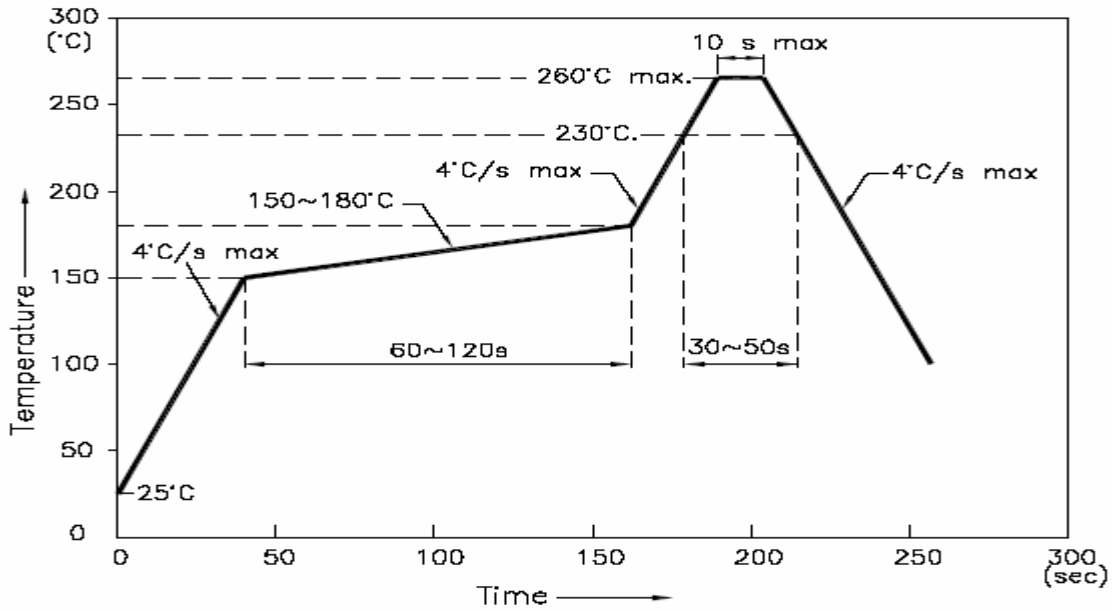
| Bin | Min. | Max. | Unit |
|-----|-------|-------|------|
| S | 515 | 517.5 | nm |
| T | 517.5 | 520 | |
| U | 520 | 522.5 | |
| V | 522.5 | 525 | |

Characteristic Curves

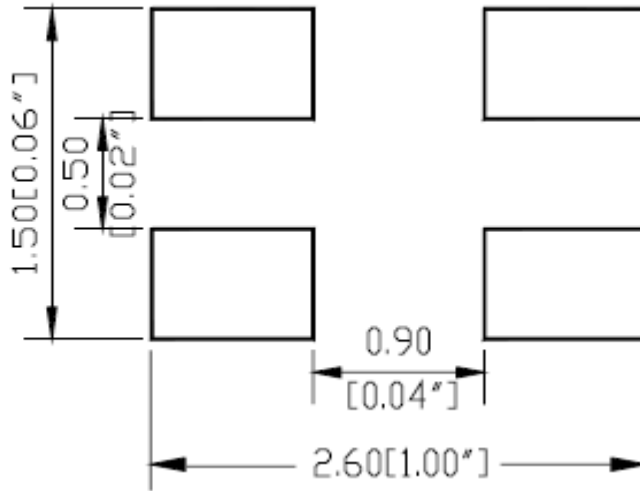


Solder Profile & Footprint

- 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

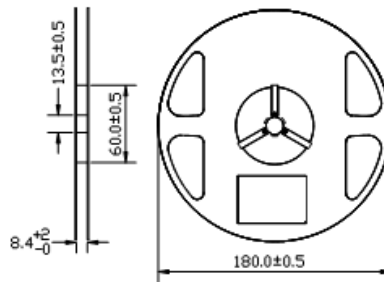


Units: mm

Tolerance: ± 0.1mm

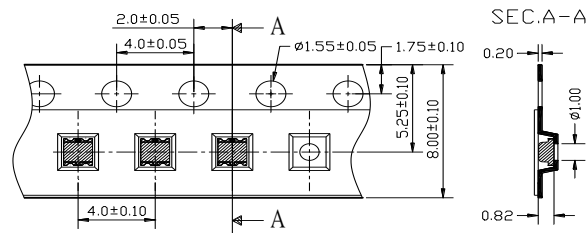
Packing

Reel Dimension:



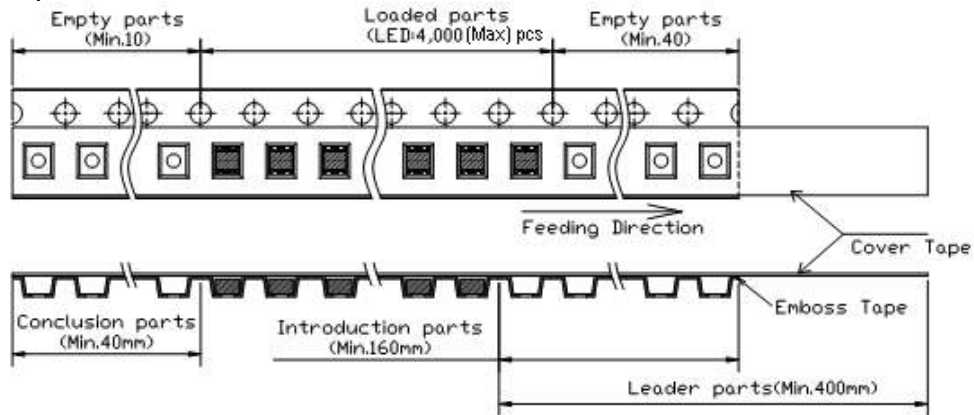
Unit: mm

Tape Dimension:

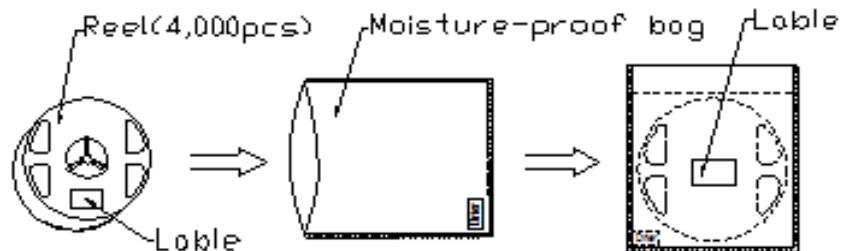


Unit: mm

Arrangement of Tape:



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 |
|-------------|------------------|--|-------------------|
| QBLP600-RIG | QBLP600-RIG | Red: Iv=75mcd typ. @ I _F =20mA, λ _D =630nm to 650nm | 4,000 units |
| | | True Green: Iv=380mcd typ. @ I _F =20mA, λ _D =515nm to 525nm | |

Revision History

| Description: | Revision # | Revision Date |
|---|------------|---------------|
| New Release of QBLP600-RIG | V1.0 | 06/25/2011 |
| Update Specification | V1.1 | 12/09/2011 |
| Update to new format / Update PCB drawing | V2.0 | 05/02/2016 |
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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.