

# **QT-Brightek Chip LED Series**

## **SMD 1205 Bi-Color LED**

**Part No.: QBLP655-RIG**

**R: Red  
IG: True Green**

|                      |                     |              |
|----------------------|---------------------|--------------|
| Product: QBLP655-RIG | Date: June 23, 2017 | Page 1 of 11 |
|                      | Version# 1.0        |              |

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## Introduction

**Feature:**

- Clear lens
- Package in tape and reel
- Ultra bright 1205 package
- InGaN technology for IG
- AlInGaP technology for R
- Viewing angle: 140 degrees
- Top Mountable

**Description:**

These ultra-bright 655 LEDs have a height profile of 1.10mm. With a combination of high brightness output and small footprint, these LEDs are ideal for keypad backlighting and status indication.

**Application:**

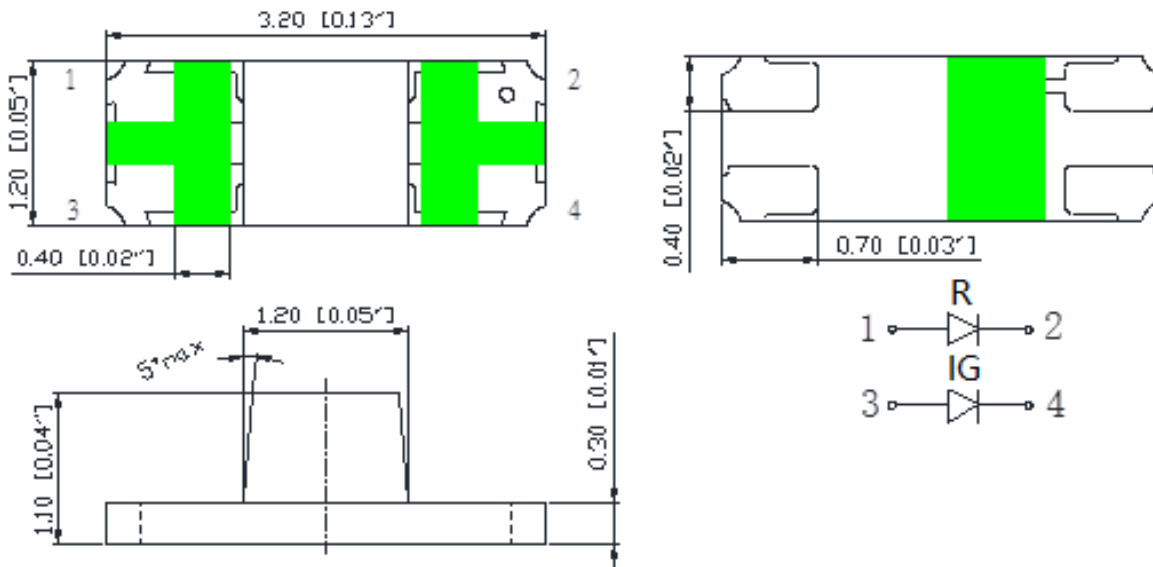
- Status indication
- Back lighting application

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.1mm

**Electrical / Optical Characteristic (Ta=25 °C)**

| Product     | Color      | I <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. |
| QBLP655-RIG | Red        | 20                  | 2.0                | 2.5  | 615                 | 623  | 630  | 50                   | 90   |
|             | True Green | 20                  | 3.1                | 3.7  | 515                 | 520  | 525  | 250                  | 450  |

**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>SO L</sub> (°C)** |
|------------------------|---------------------|---------------------|-----------------------|--------------------|----------------------|----------------------|--------------------------|
| AllInGaP<br>(R/AG/Y/O) | 75                  | 30                  | 125                   | 5                  | -40 ~ +85            | -40 ~ +100           | 260                      |
| InGaN (IB/IG/IW)       | 120                 | 30                  | 125                   | 5                  | -40 ~ +85            | -40 ~ +100           | 260                      |

\*Duty 1/8 @ 1kHz

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

**Forward Voltage V<sub>F</sub> for AllInGaP @ I<sub>F</sub>=20mA**

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

**Forward Voltage V<sub>F</sub> for InGaN @ I<sub>F</sub>=20mA**

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

**Luminous Intensity I<sub>V</sub> @ I<sub>F</sub>=20mA**

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| G   | 50   | 63   | mcd  |
| 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  |      |
| R   | 630  | 800  |      |

**Dominant Wavelength  $\lambda_D$  for True 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   |      |

**Dominant Wavelength  $\lambda_D$  for Red @  $I_F=20mA$** 

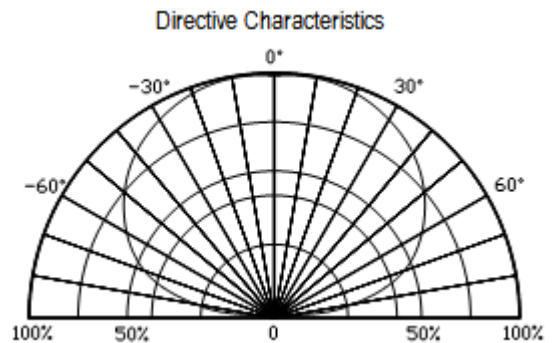
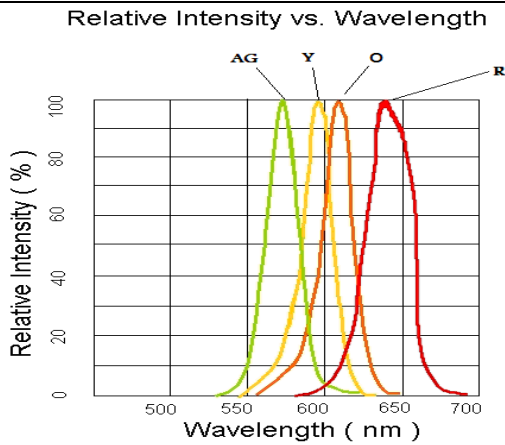
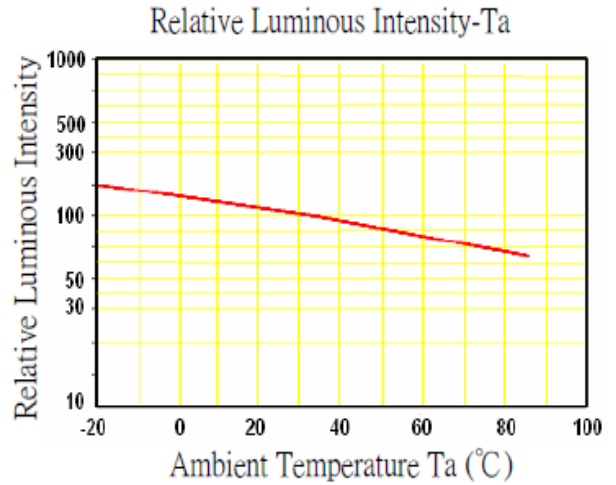
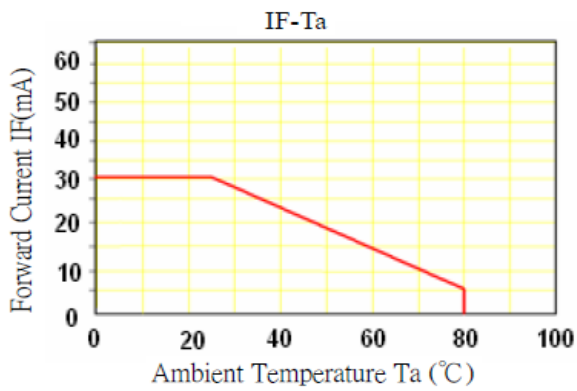
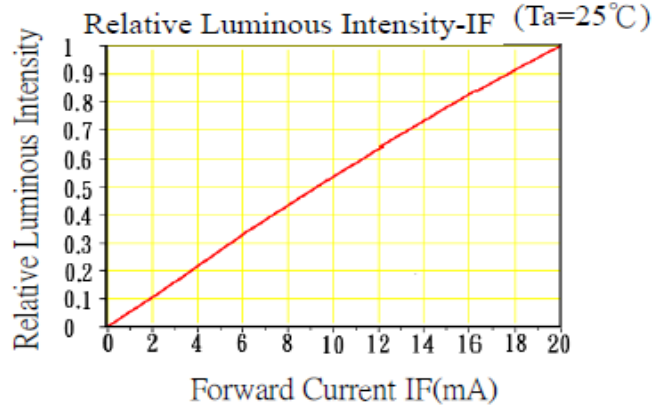
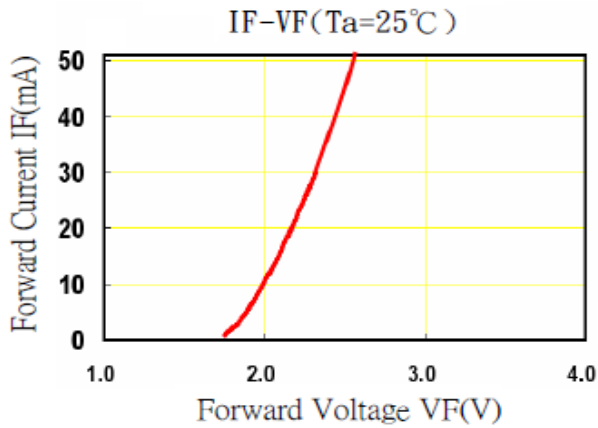
| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| s   | 615  | 620  | nm   |
| t   | 620  | 625  |      |
| u   | 625  | 630  |      |

## Note:

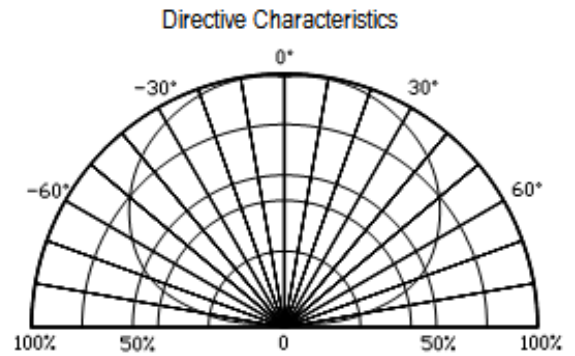
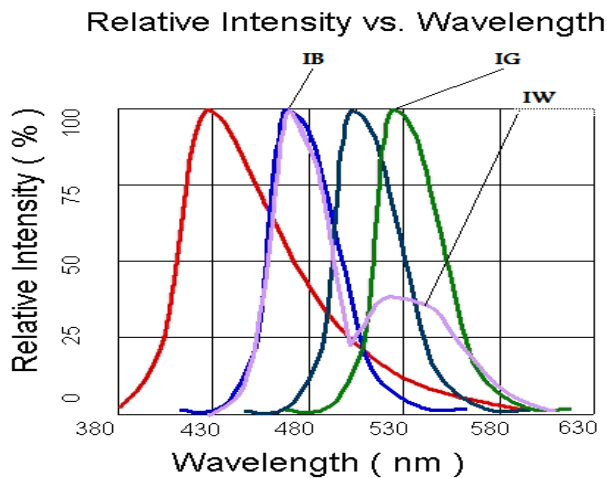
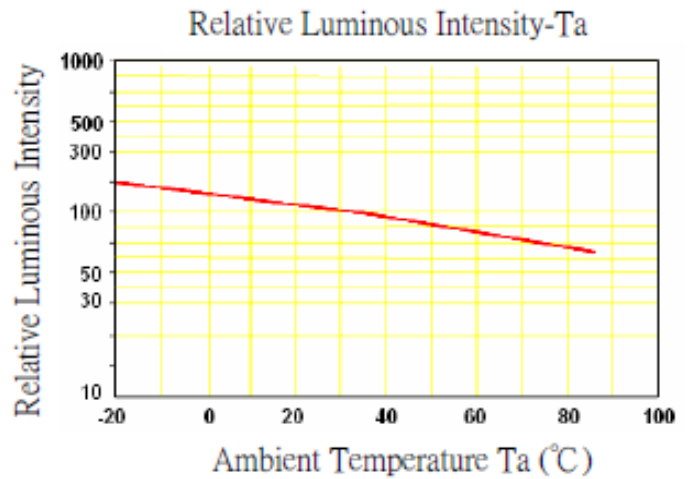
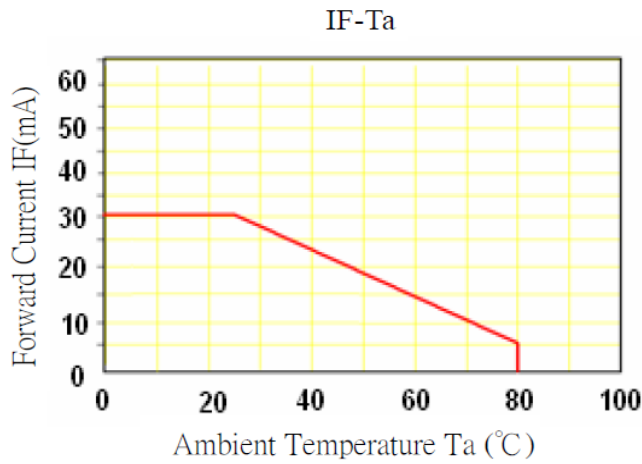
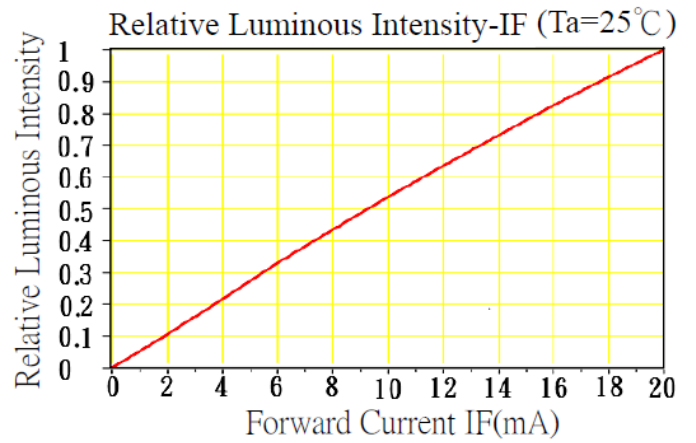
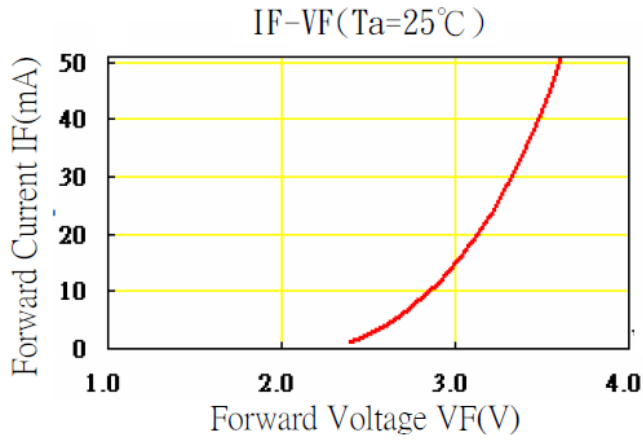
Tolerance of measurement of forward voltage:  $\pm 0.1V$ Tolerance of measurement of luminous intensity:  $\pm 15\%$ Tolerance of measurement of dominant wavelength:  $\pm 2nm$

**Characteristic Curves**

AllnGaP (R)

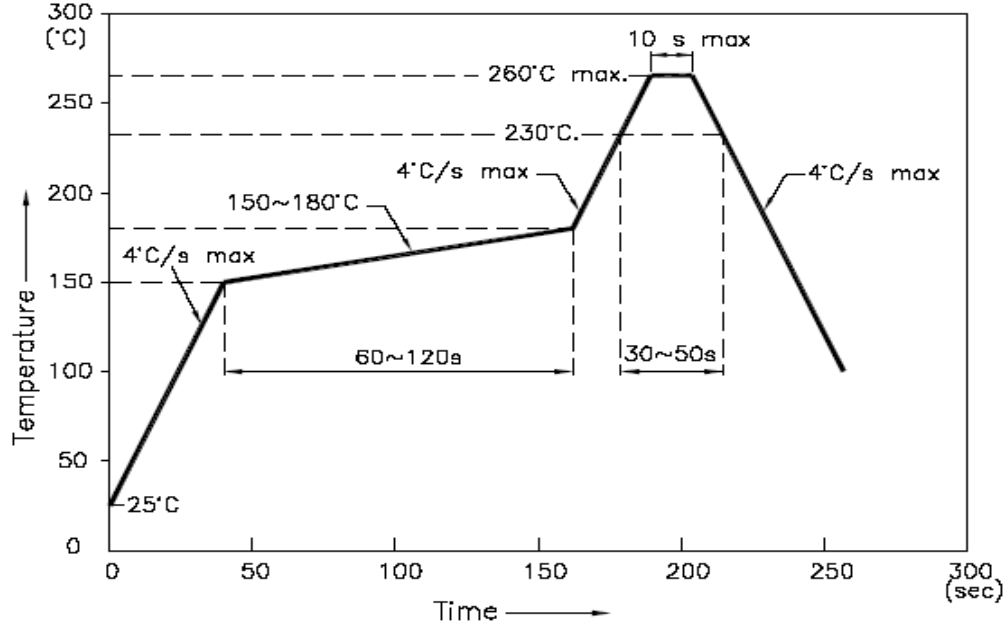


InGaN (IG)

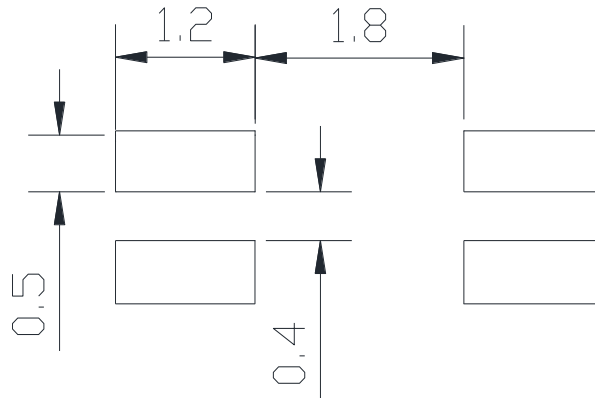


## Solder Profile & Footprint

-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



### Recommended Pad Layout



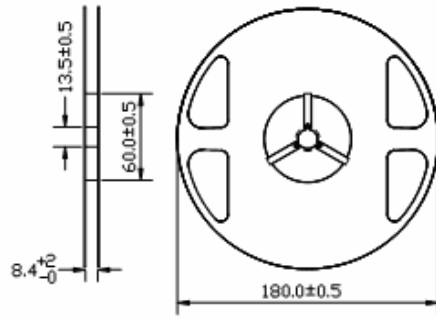
Units: mm

tolerance: +/- 0.1mm



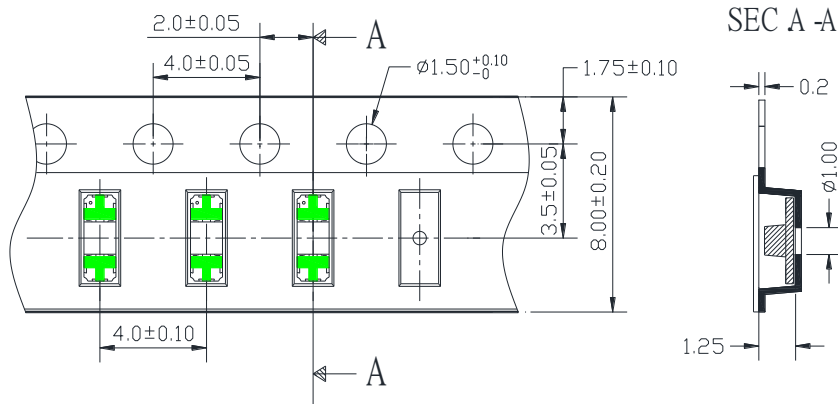
## Packing

### Reel Dimension:



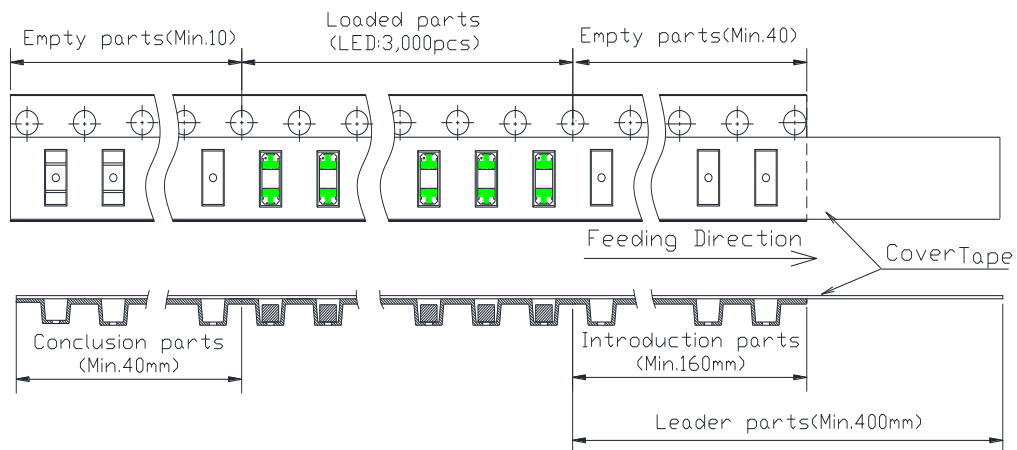
Unit: mm

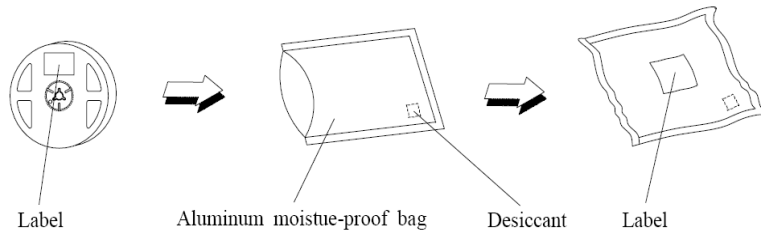
### Tape Dimension:



Unit: mm

### Arrangement of Tape:



**Packaging Specifications:****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 |
|-------------|------------------|---|-------------------|
| QBLP655-RIG | QBLP655-RIG      | Iv=90mcd typ. @ 20mA / λD=615-630nm<br>Iv=450mcd typ. @ 20mA / λD=515-525nm | 3,000 units       |

## Revision History

| Description:               | Revision # | Revision Date |
|----------------------------|------------|---------------|
| New Release of QBLP655-RIG | V1.0       | 06/23/2017    |
|                            |            |               |
|                            |            |               |
|                            |            |               |

## Disclaimer

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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.

|                      |                     |               |
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