



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# **QT-Brightek Display Series**

## **0.56" Three Digit Display**

**Part No.: QBT56XXZ**

**XX= Color**

**Z= 1: Common Cathode**

**Z = 0: Common Anode**

---

**Table of Contents:**

|  |    |
|--|----|
| Introduction .....                                   | 3  |
| Electrical / Optical Characteristic (Ta=25 °C) ..... | 4  |
| Absolute Maximum Rating .....                        | 4  |
| Pin Configuration .....                              | 5  |
| Characteristic Curves.....                           | 6  |
| Solder Profile .....                                 | 8  |
| Packing .....  | 9  |
| Ordering Information .....                           | 10 |
| Revision History .....                               | 11 |
| Disclaimer .....                                     | 11 |

## Introduction

**Feature:**

- 0.56" three digit seven segments display
- Low power consumption
- Packed in foam
- AllInGaP Technology R/S/Y/AG/O
- InGaN Technology IB/IG
- Z= 1: Common Cathode or 0:Common Anode
- XX= color

**Description:**

These 0.56" three-digit, seven-segment displays are made with white segments and a grey surface. The viewing distance is up to seven meters.

**Application:**

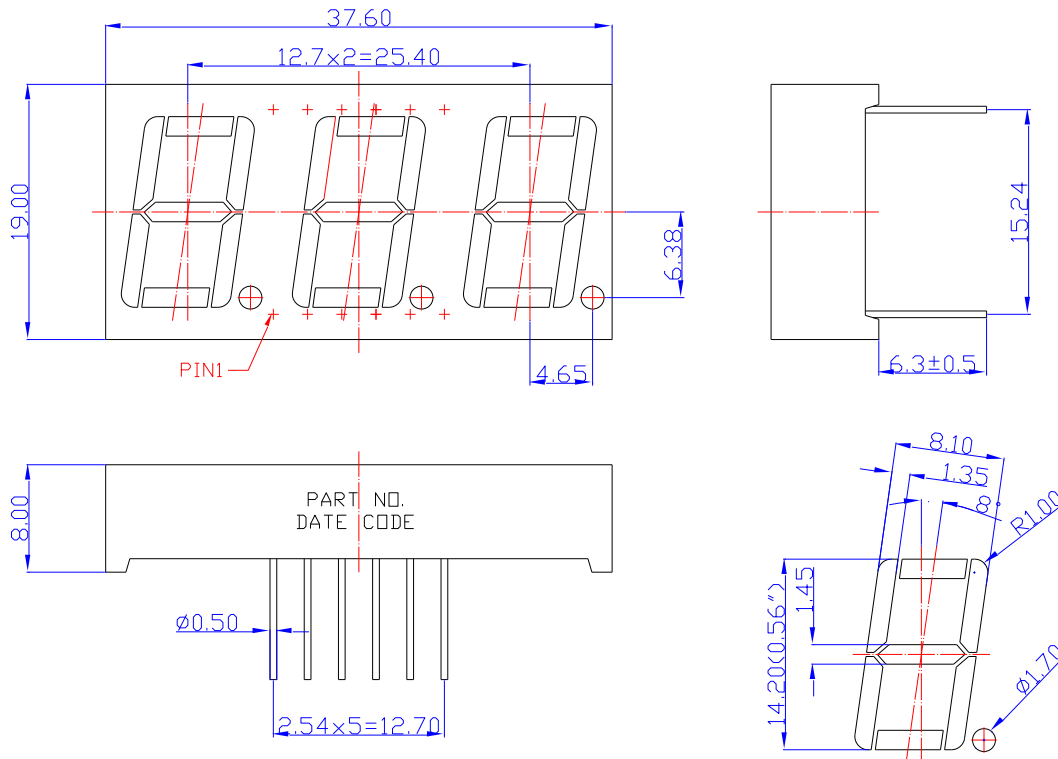
- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.25mm

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

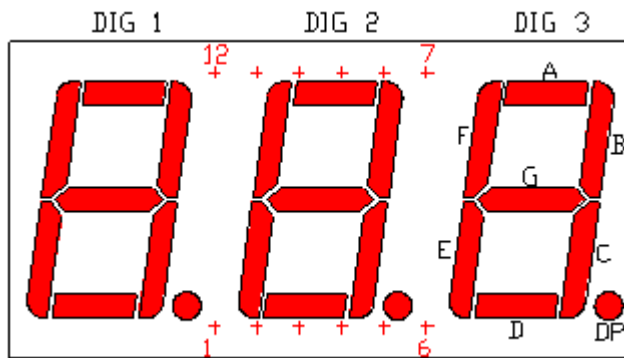
| Product  |          | Material | Color        | I <sub>F</sub> (mA) | V <sub>F</sub> (V) |      | λ <sub>D</sub> (nm) |      |      | I <sub>V</sub> (mcd) |
|----------|----------|----------|--------------|---------------------|--------------------|------|---------------------|------|------|----------------------|
| CC       | CA       |          |              |                     | Typ.               | Max. | Min.                | Typ. | Max. | Typ.                 |
| QBT56R1  | QBT56R0  | AllnGaP  | Red          | 20                  | 2.0                | 2.6  | -                   | 624  | -    | 60                   |
| QBT56S1  | QBT56S0  | AllnGaP  | Deep Red     | 20                  | 2.0                | 2.6  | -                   | 639  | -    | 35                   |
| QBT56Y1  | QBT56Y0  | AllnGaP  | Yellow       | 20                  | 2.0                | 2.6  | -                   | 590  | -    | 60                   |
| QBT56O1  | QBT56O0  | AllnGaP  | Orange       | 20                  | 2.0                | 2.6  | -                   | 606  | -    | 60                   |
| QBT56AG1 | QBT56AG0 | AllnGaP  | Yellow Green | 20                  | 2.1                | 2.6  | -                   | 571  | -    | 25                   |
| QBT56IG1 | QBT56IG0 | InGaN    | True Green   | 20                  | 3.2                | 3.6  | -                   | 525  | -    | 200                  |
| QBT56IB1 | QBT56IB0 | InGaN    | Blue         | 20                  | 3.0                | 4.0  | -                   | 465  | -    | 60                   |

**Absolute Maximum Rating**

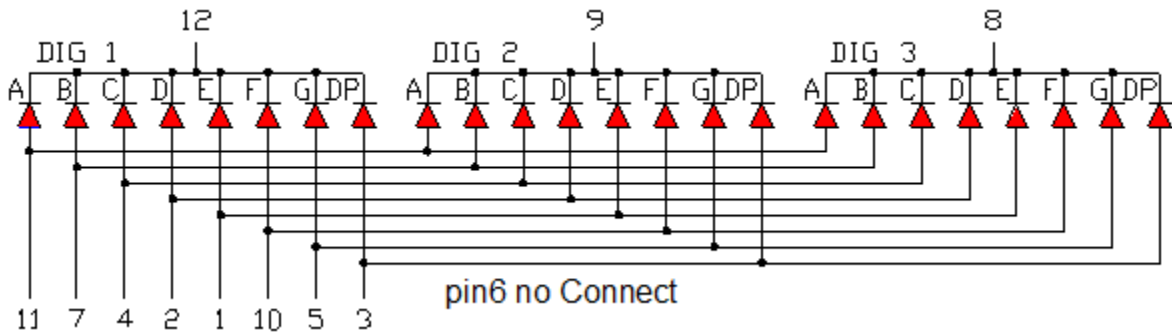
| Material | P <sub>d</sub> (mW) | Derating liner from 25 °C per dice (mA/°C) | I <sub>F</sub> (mA) | I <sub>PF</sub> (mA)* | V <sub>R</sub> (V) | T <sub>OP</sub> (°C) | T <sub>ST</sub> (°C) |
|----------|---------------------|--|---------------------|-----------------------|--------------------|----------------------|----------------------|
| AllnGaP  | 70                  | 0.33                                       | 25                  | 90                    | 5                  | -25 to +85           | -25 to +85           |
| InGaN    | 120                 | 0.4  | 30                  | 100                   | 5                  | -25 to +85           | -25 to +85           |

\*Duty 1/10 @ 1KHz

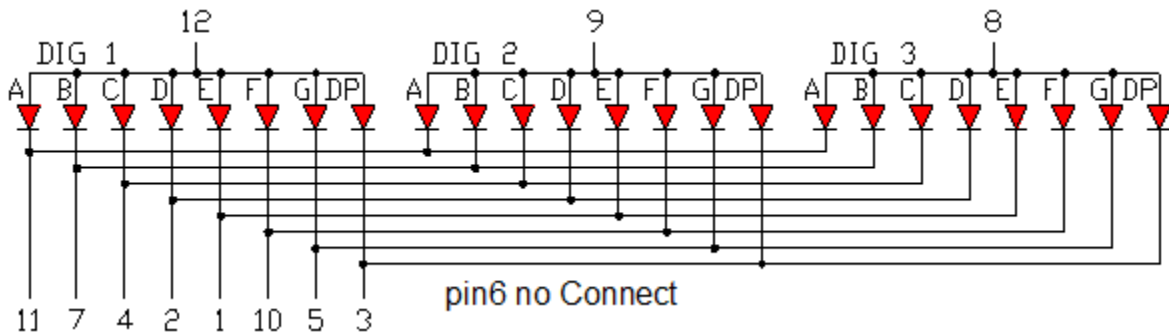
**Pin Configuration**



**CC**

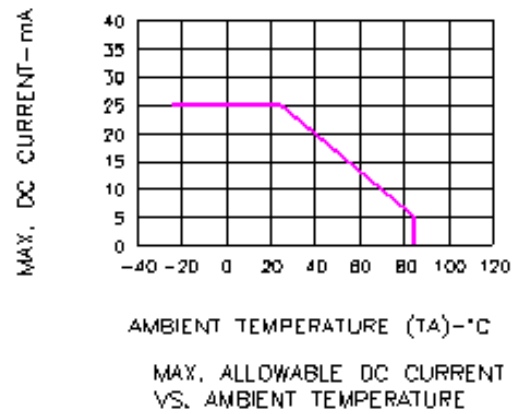
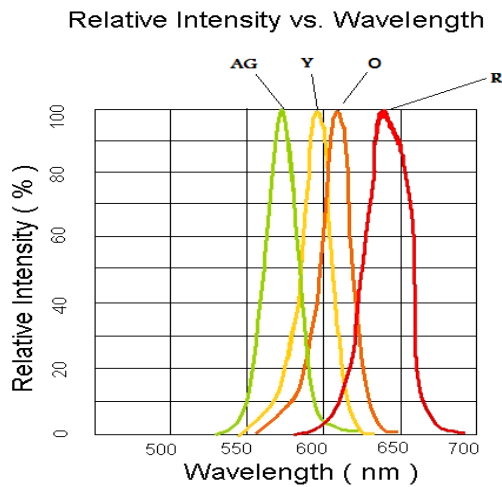
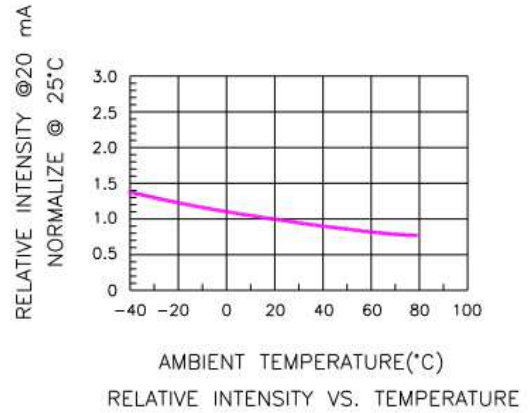
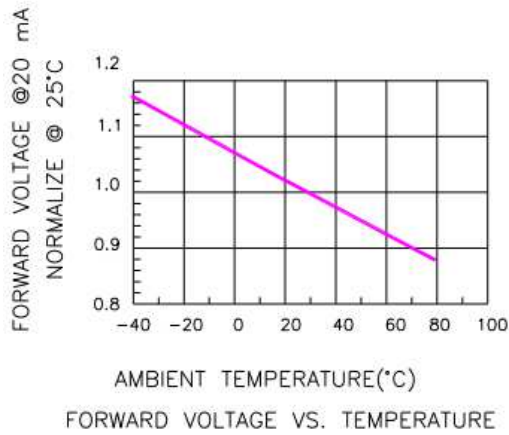
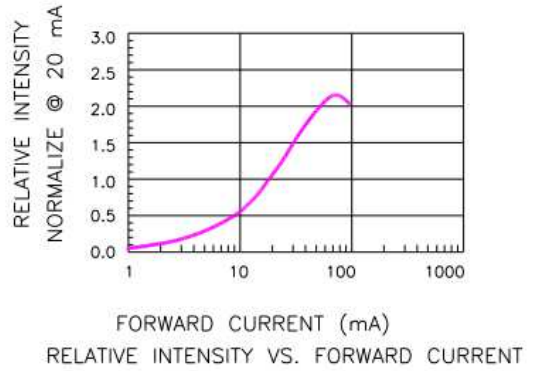
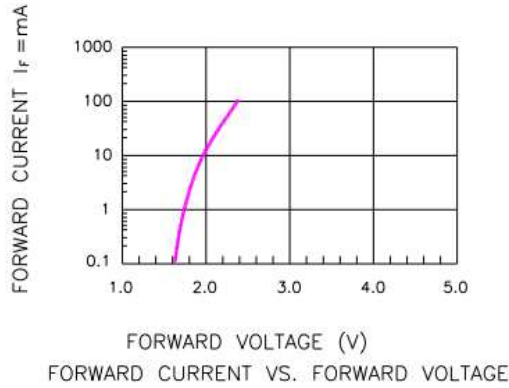


**CA**

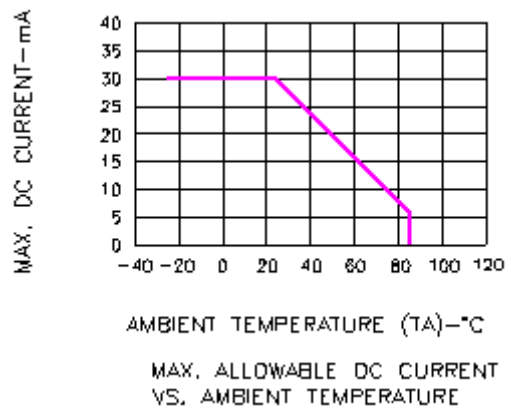
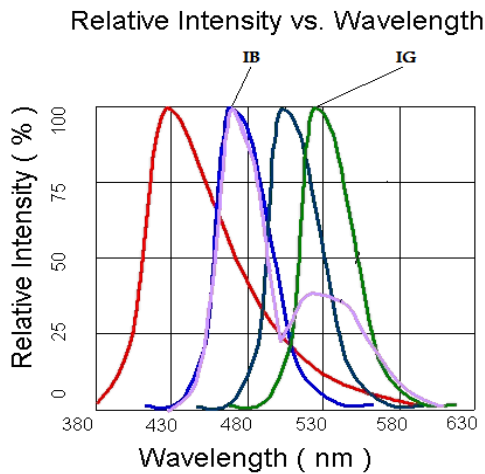
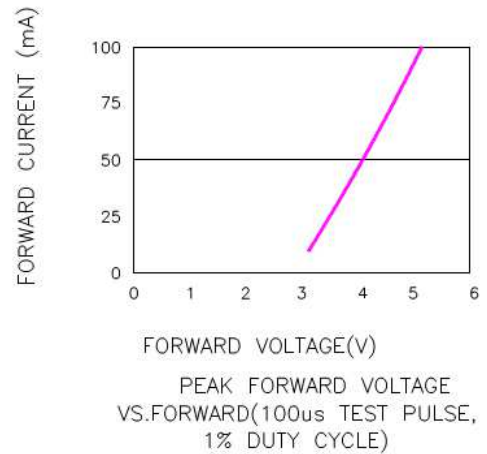
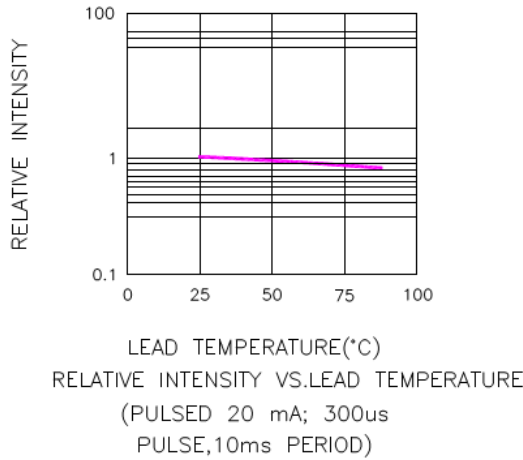
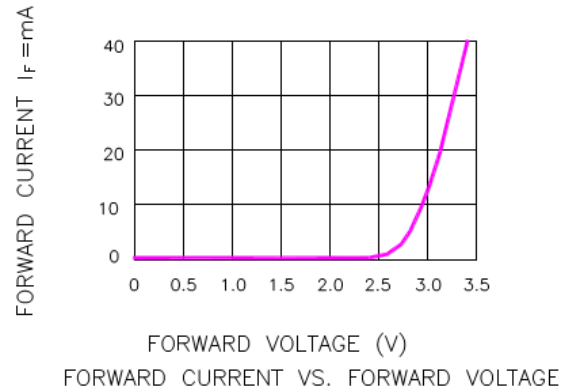
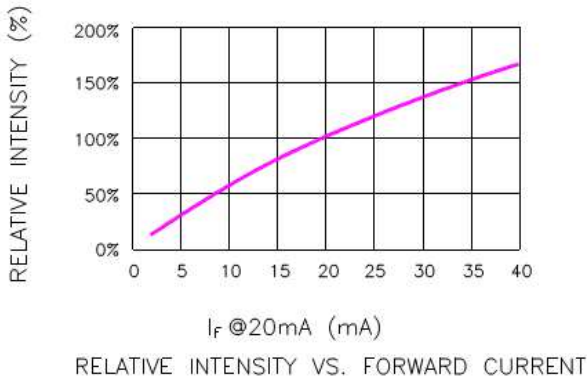


**Characteristic Curves**

AllnGaP



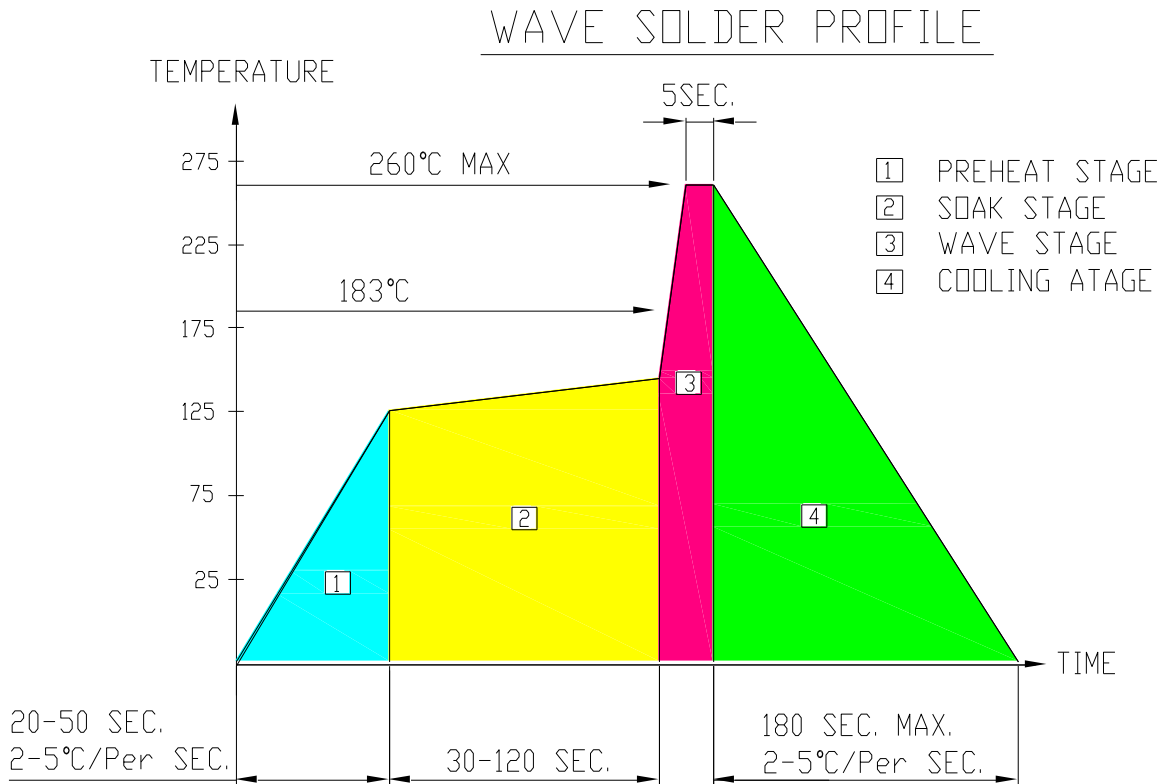
InGaN





# Solder Profile

## Recommended Solder Profile



**Packing**

117 PCS / 1 Pink ESD Polyform ( 9 X 13 PCS )

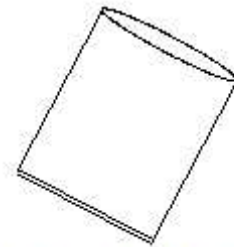


5 Pink ESD Polyform / 1 Pink BAG

585PCS / 1 Inner Carton

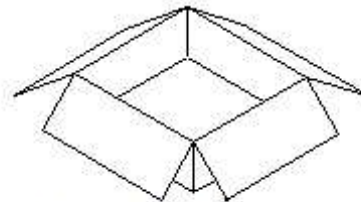


A reference for packing within bag.

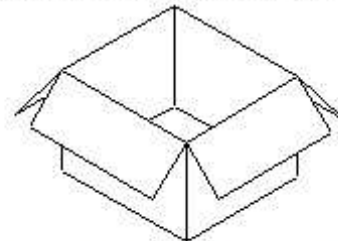


ESD BAG SIZE : 650 x 550 mm

585 PCS / 1 INNER CARTON & 1170 PCS / 2 INNER CARTON / 1 OUTER CARTON



INNER BOX SIZE : 394 x 370 x 138 mm



OUTER BOX SIZE : 430 x 390 x 300 mm

**Ordering Information**

| Product  |          | Orderable Part # |          | Spec Range  | Quantity per foam |
|----------|----------|------------------|----------|---|-------------------|
| CC       | CA       | CC               | CA       |   |                   |
| QBT56R1  | QBT56R0  | QBT56R1          | QBT56R0  | I <sub>v</sub> =60mcd typ. @ I <sub>F</sub> =20mA,<br>λ <sub>D</sub> =624nm typ.  | 117pcs            |
| QBT56S1  | QBT56S0  | QBT56S1          | QBT56S0  | I <sub>v</sub> =35mcd typ. @ I <sub>F</sub> =20mA,<br>λ <sub>D</sub> =639nm typ.  | 117pcs            |
| QBT56Y1  | QBT56Y0  | QBT56Y1          | QBT56Y0  | I <sub>v</sub> =60mcd typ. @ I <sub>F</sub> =20mA,<br>λ <sub>D</sub> =590nm typ.  | 117pcs            |
| QBT56O1  | QBT56O0  | QBT56O1          | QBT56O0  | I <sub>v</sub> =60mcd typ. @ I <sub>F</sub> =20mA,<br>λ <sub>D</sub> =606nm typ.  | 117pcs            |
| QBT56AG1 | QBT56AG0 | QBT56AG1         | QBT56AG0 | I <sub>v</sub> =25mcd typ. @ I <sub>F</sub> =20mA,<br>λ <sub>D</sub> =571nm typ.  | 117pcs            |
| QBT56IG1 | QBT56IG0 | QBT56IG1         | QBT56IG0 | I <sub>v</sub> =200mcd typ. @ I <sub>F</sub> =20mA,<br>λ <sub>D</sub> =525nm typ. | 117pcs            |
| QBT56IB1 | QBT56IB0 | QBT56IB1         | QBT56IB0 | I <sub>v</sub> =60mcd typ. @ I <sub>F</sub> =20mA,<br>λ <sub>D</sub> =465nm typ.  | 117pcs            |

## Revision History

| Description:  | Revision # | Revision Date |
|---|------------|---------------|
| New Release of QBT56XXX_series                                      | V1.0       | 09/20/2010    |
| Amend part number to QBT56XXZ / add color spec: blue and true green | V2.0       | 06/24/2011    |
| Add the orange color spec   | V2.1       | 02/13/2012    |
| Added binning and packing information                               | V2.2       | 03/01/2012    |
| Update format and spec  | V3.0       | 09/23/2015    |
|   |            |               |
|   |            |               |

## Disclaimer

QT-BRIGHTTEK reserves the right to make changes without further notice to any products herein to improve reliability, function or design. QT-BRIGHTTEK does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

## Life Support Policy

QT-BRIGHTTEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of QT-BRIGHTTEK. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
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.

|                          |                          |               |
|--------------------------|--------------------------|---------------|
| Product: QBT56XXZ_series | Date: September 23, 2015 | Page 11 of 11 |
|                          | Version# 3.0             |               |