



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**

## **0.28" Four Digit Display**

**Part No.: QBQ28XXZ**

**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:

- 0.28" four 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 0.28" four seven-segment displays are made with white segments and a grey surface. The viewing distance is up to seven meters.

### Application:

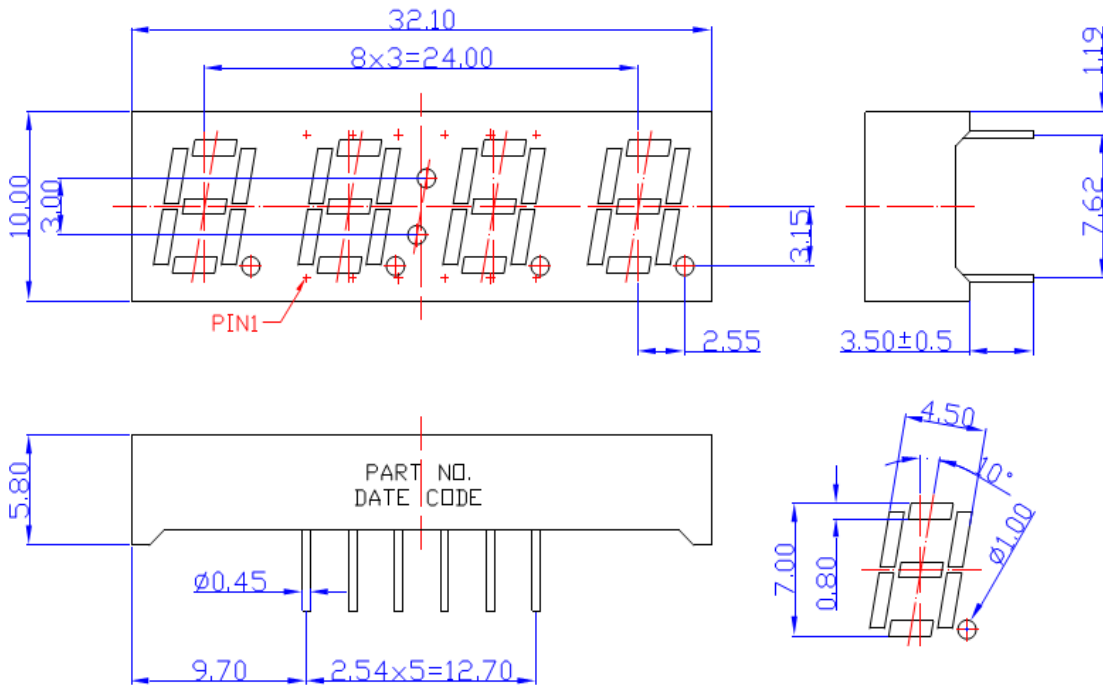
- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

### 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.
QBQ28R1	QBQ28R0	AllnGaP	Red	20	2.0	2.6	-	625	-	40
QBQ28S1	QBQ28S0	AllnGaP	Deep Red	20	2.0	2.6	-	639	-	20
QBQ28Y1	QBQ28Y0	AllnGaP	Yellow	20	2.0	2.6	-	590	-	40
QBQ28O1	QBQ28O0	AllnGaP	Orange	20	2.0	2.6	-	606	-	40
QBQ28AG1	QBQ28AG0	AllnGaP	Yellow Green	20	2.1	2.6	-	571	-	20
QBQ28IG1	QBQ28IG0	InGaN	True Green	20	3.2	4.0	-	525	-	100
QBQ28IB1	QBQ28IB0	InGaN	Blue	20	3.0	4.0	-	465	-	40

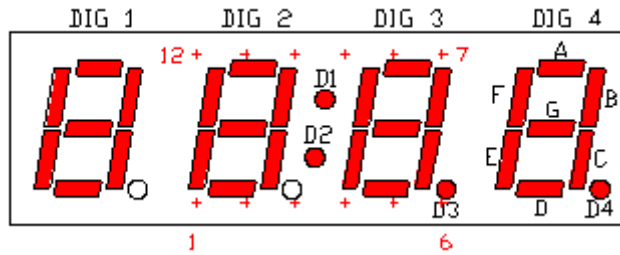
**Absolute Maximum Rating**

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

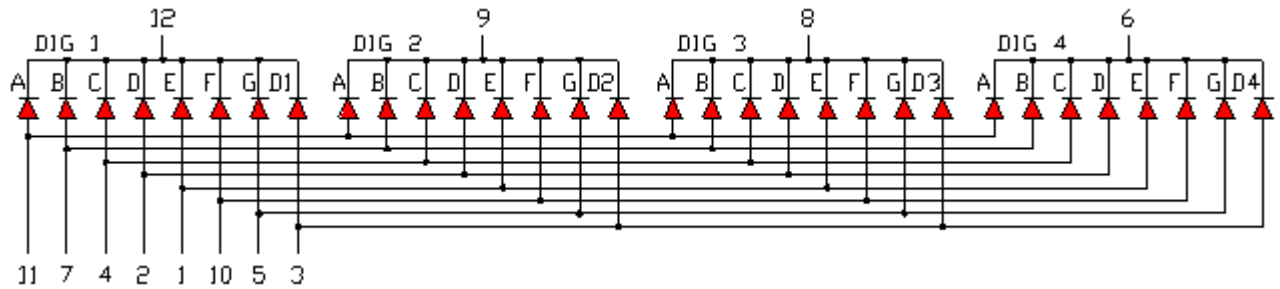
\*Duty 1/10 @ 1KHz



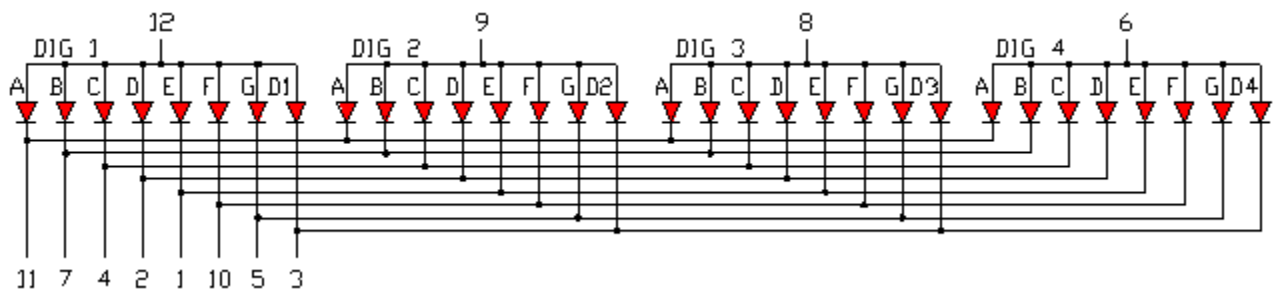
**Pin Configuration**



**CC**

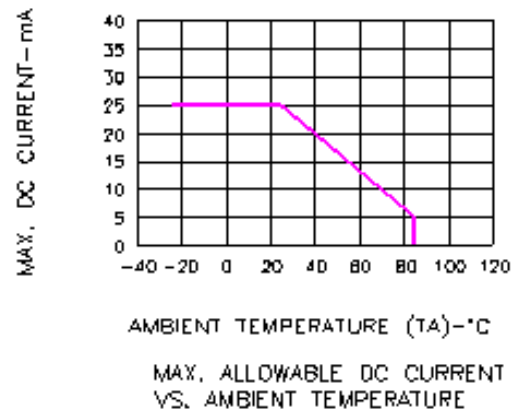
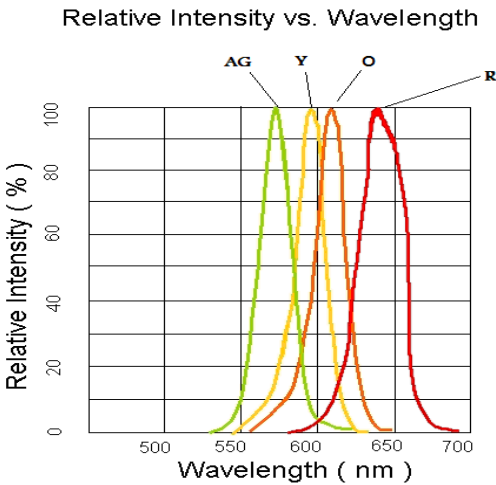
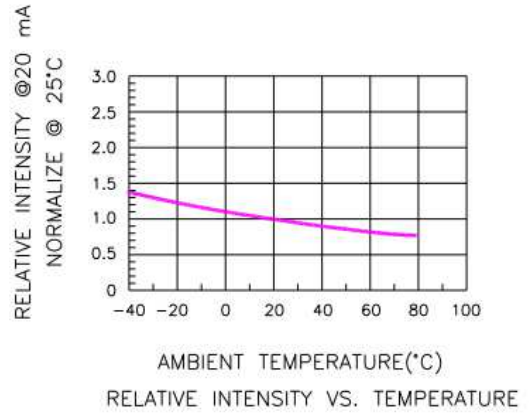
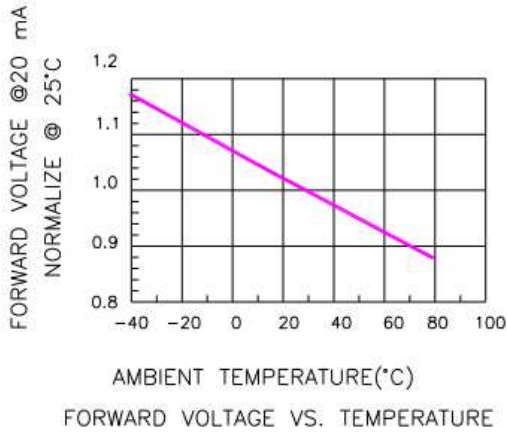
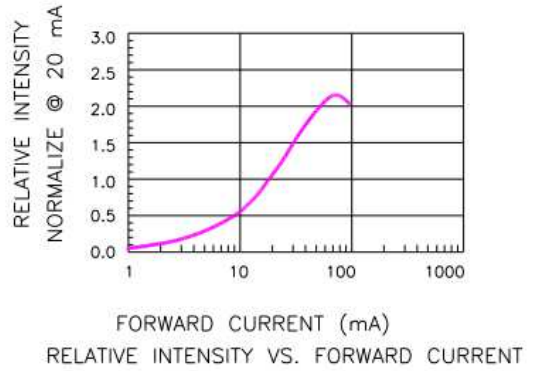
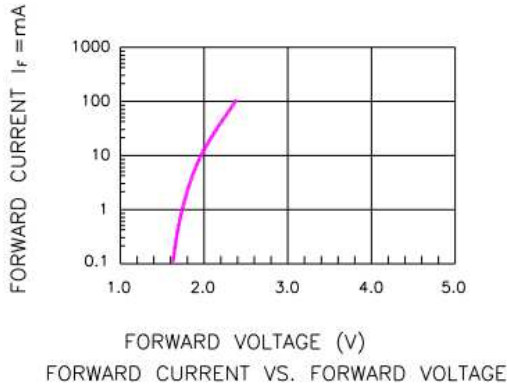


**CA**

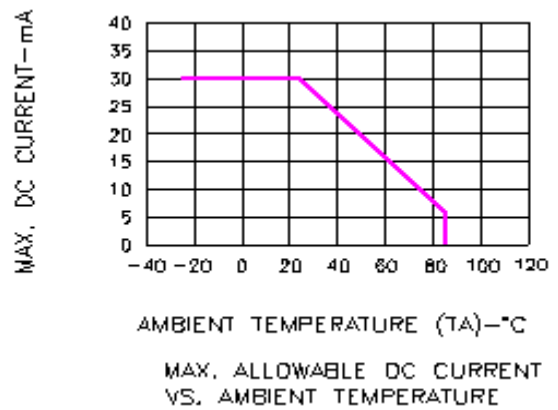
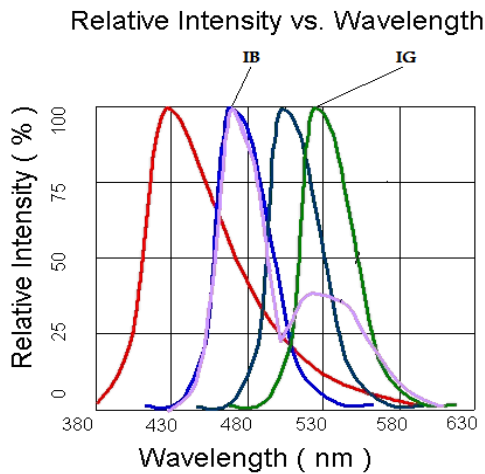
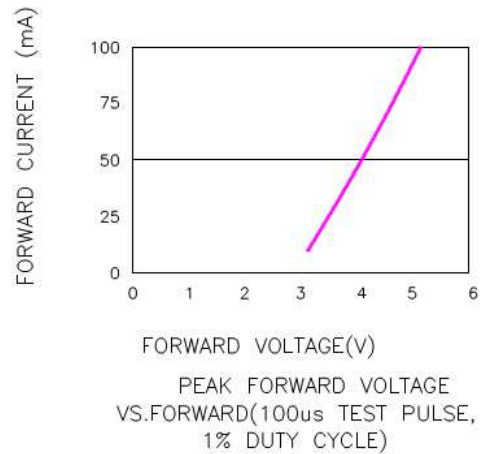
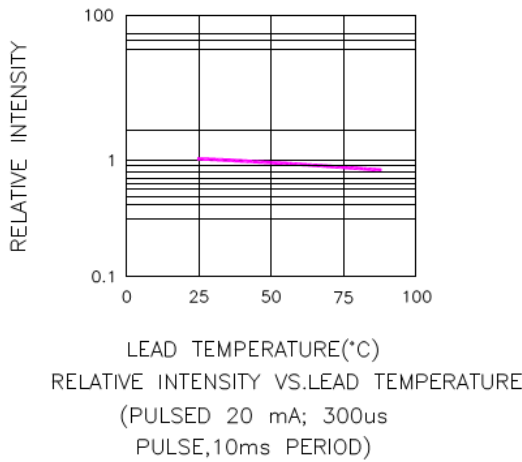
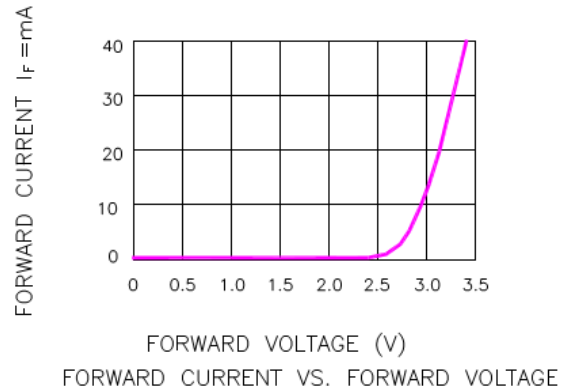
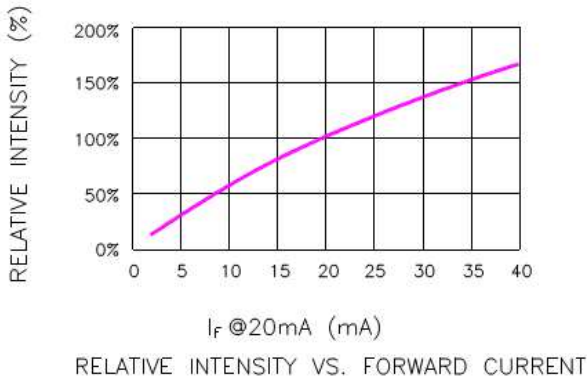


## Characteristic Curves

AllnGaP



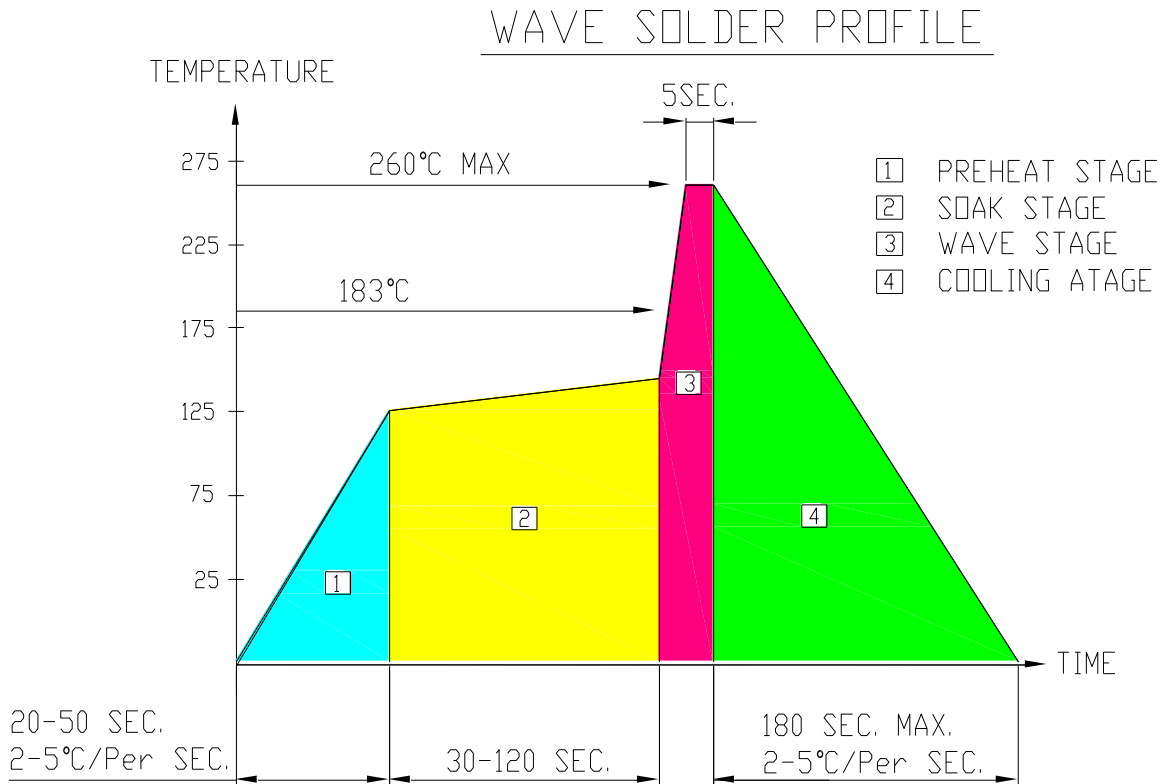
InGaN





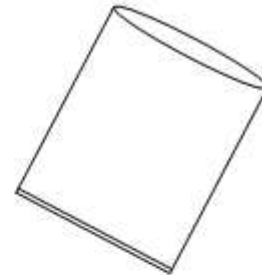
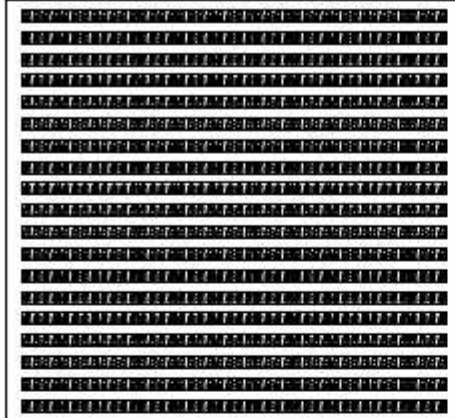
# Solder Profile

## Recommended Solder Profile



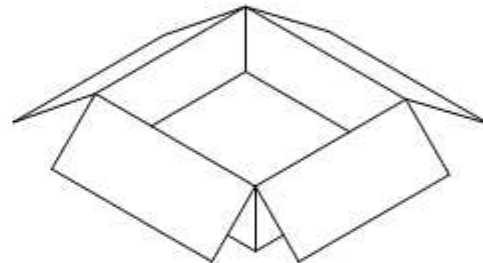
**Packing**

209PCS(11X19) / 1 White Polyform & 1 CARDBOARD



BAG SIZE :450X410X560

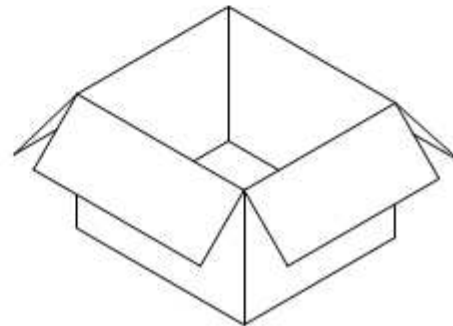
1254 PCS / 6 White Polyform / 1 BAG



INNER BOX SIZE : 394 x 370 x 138 mm

1254 PCS / 1 INNER CARTON

2508 PCS / 2 INNER CARTONS / 1 OUTER CARTON



## Ordering Information

Product		Orderable Part #		Spec Range	Quantity per foam
CC	CA	CC	CA		
QBQ28R1	QBQ28R0	QBQ28R1	QBQ28R0	I <sub>v</sub> =40mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =625nm typ.	209pcs
QBQ28S1	QBQ28S0	QBQ28S1	QBQ28S0	I <sub>v</sub> =20mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =639nm typ.	209pcs
QBQ28Y1	QBQ28Y0	QBQ28Y1	QBQ28Y0	I <sub>v</sub> =40mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =590nm typ.	209pcs
QBQ28O1	QBQ28O0	QBQ28O1	QBQ28O0	I <sub>v</sub> =40mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =606nm typ.	209pcs
QBQ28AG1	QBQ28AG0	QBQ28AG1	QBQ28AG0	I <sub>v</sub> =20mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =571nm typ.	209pcs
QBQ28IG1	QBQ28IG0	QBQ28IG1	QBQ28IG0	I <sub>v</sub> =100mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =525nm typ.	209pcs
QBQ28IB1	QBQ28IB0	QBQ28IB1	QBQ28IB0	I <sub>v</sub> =40mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =465nm typ.	209pcs

## Revision History

Description:	Revision #	Revision Date
New Release of QBQ28XXZ_series	V1.0	09/20/2010
Amend part number to QBQ28XXZ / add color spec: blue and true green	V2.0	06/24/2011
Update format / Add more color options	V2.1	09/21/2015

## 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.