

# **QT-Brightek Display Series**

## **0.28" Four Digit Display**

**Part No.: QBQ28XXZ**

**XX= Color**

**Z= 1: Common Cathode**

**Z = 0: Common Anode**

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**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:**

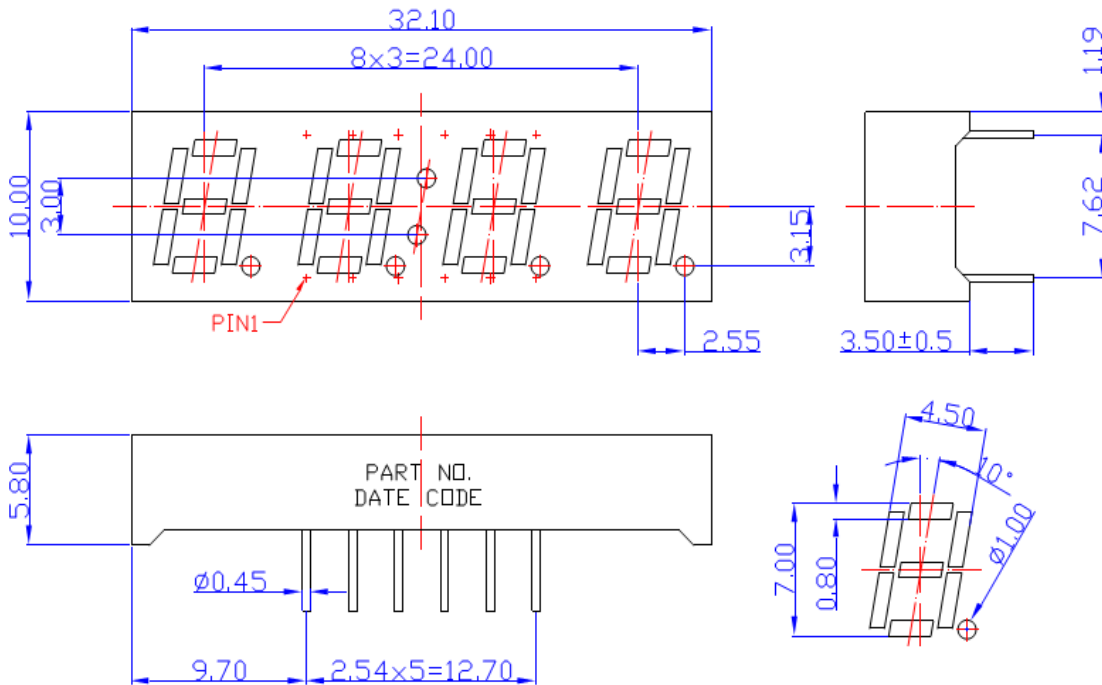
- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.25mm

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

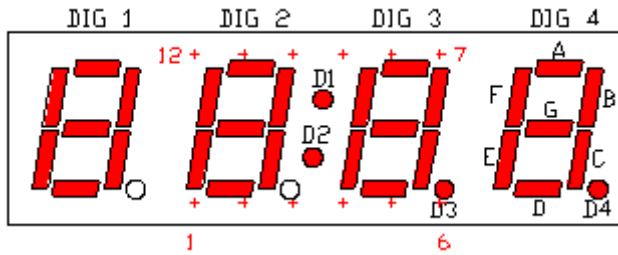
Product		Material	Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ <sub>D</sub> (nm)			I <sub>V</sub> (mcd)
CC	CA				Typ.	Max.	Min.	Typ.	Max.	Typ.
QBQ28R1	QBQ28R0	AllnGaP	Red	20	2.0	2.6	-	625	-	40
QBQ28S1	QBQ28S0	AllnGaP	Deep Red	20	2.0	2.6	-	639	-	20
QBQ28Y1	QBQ28Y0	AllnGaP	Yellow	20	2.0	2.6	-	590	-	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

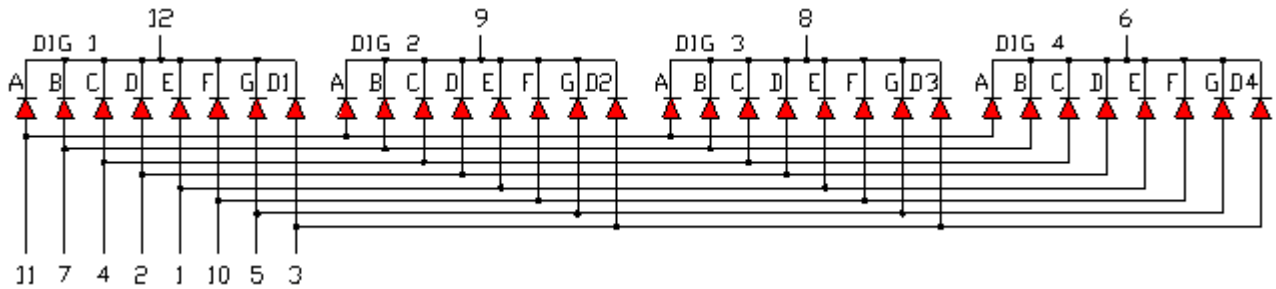
Material	P <sub>d</sub> (mW)	Derating liner from 25 °C per dice (mA/°C)	I <sub>F</sub> (mA)	I <sub>PF</sub> (mA)*	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)
AllnGaP	70	0.33	25	90	5	-25 to +85	-25 to +85
InGaN	120	0.4	30	100	5	-25 to +85	-25 to +85

\*Duty 1/10 @ 1KHz

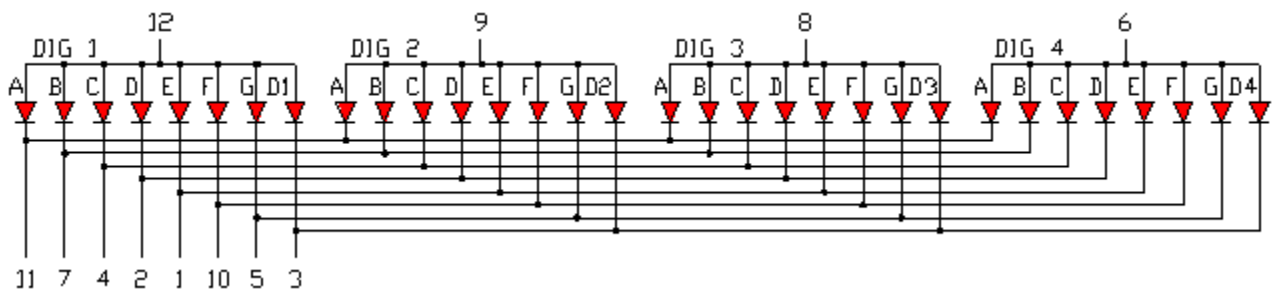
**Pin Configuration**



**CC**

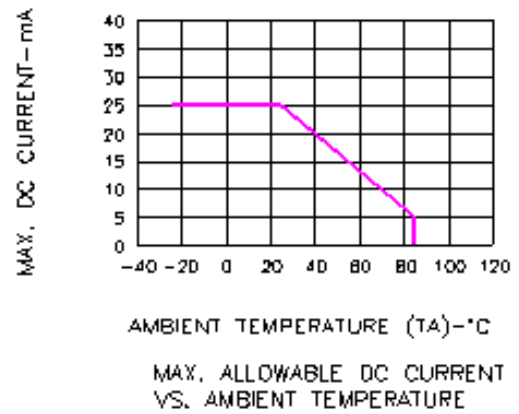
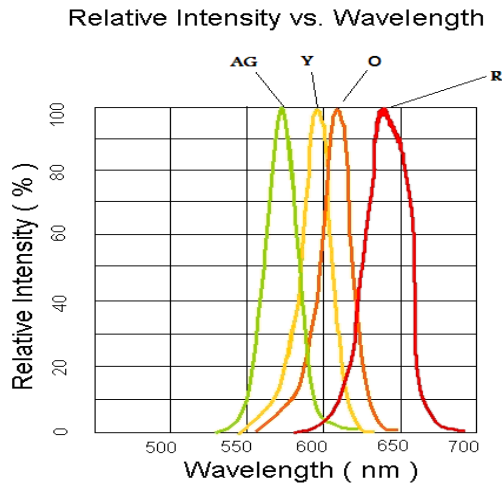
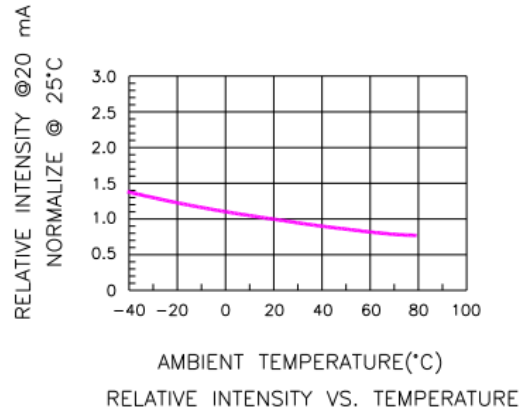
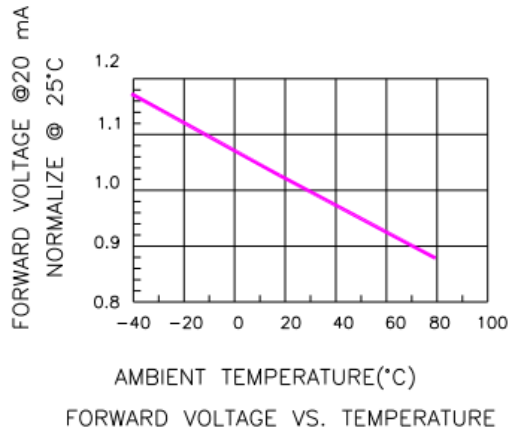
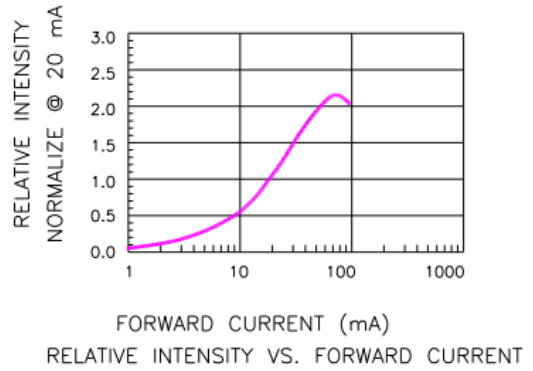
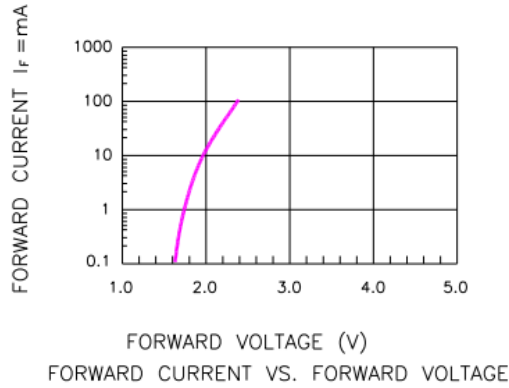


**CA**

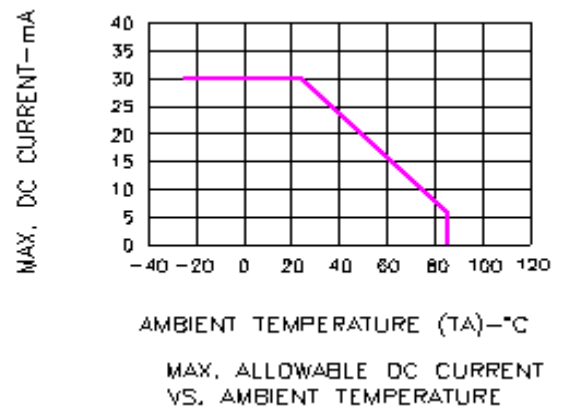
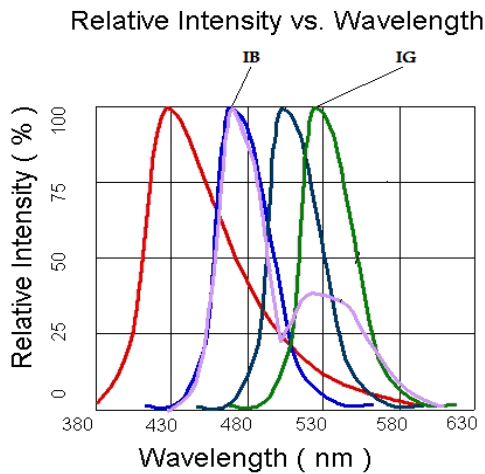
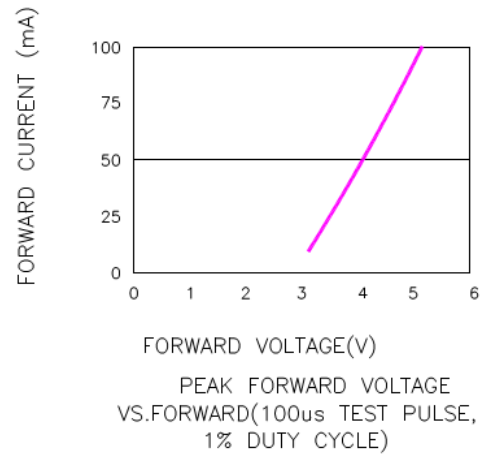
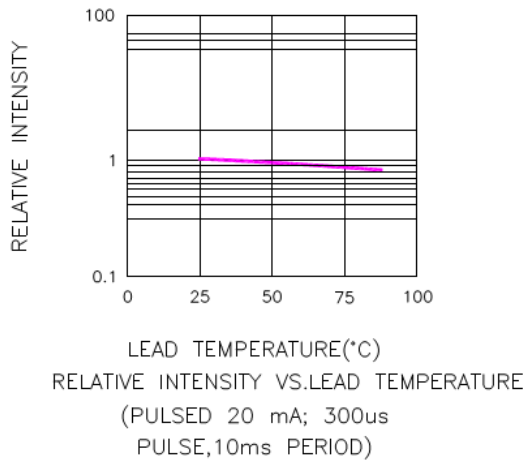
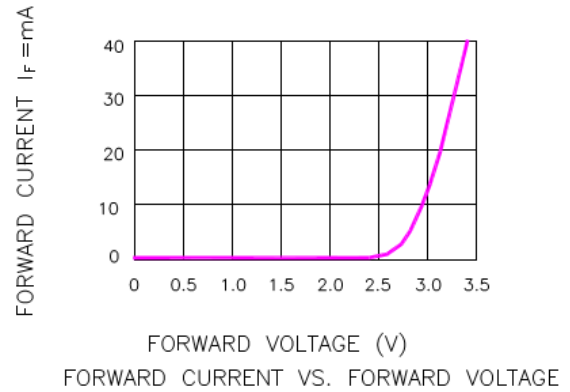
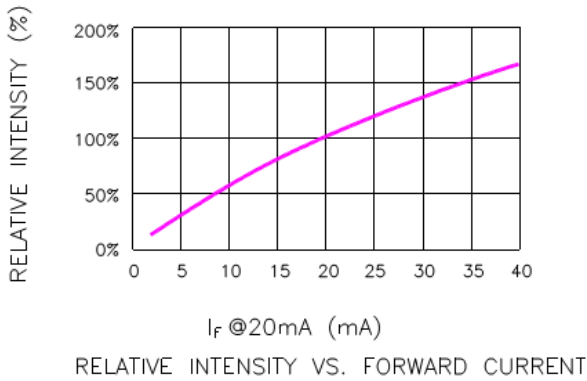


**Characteristic Curves**

AllnGaP

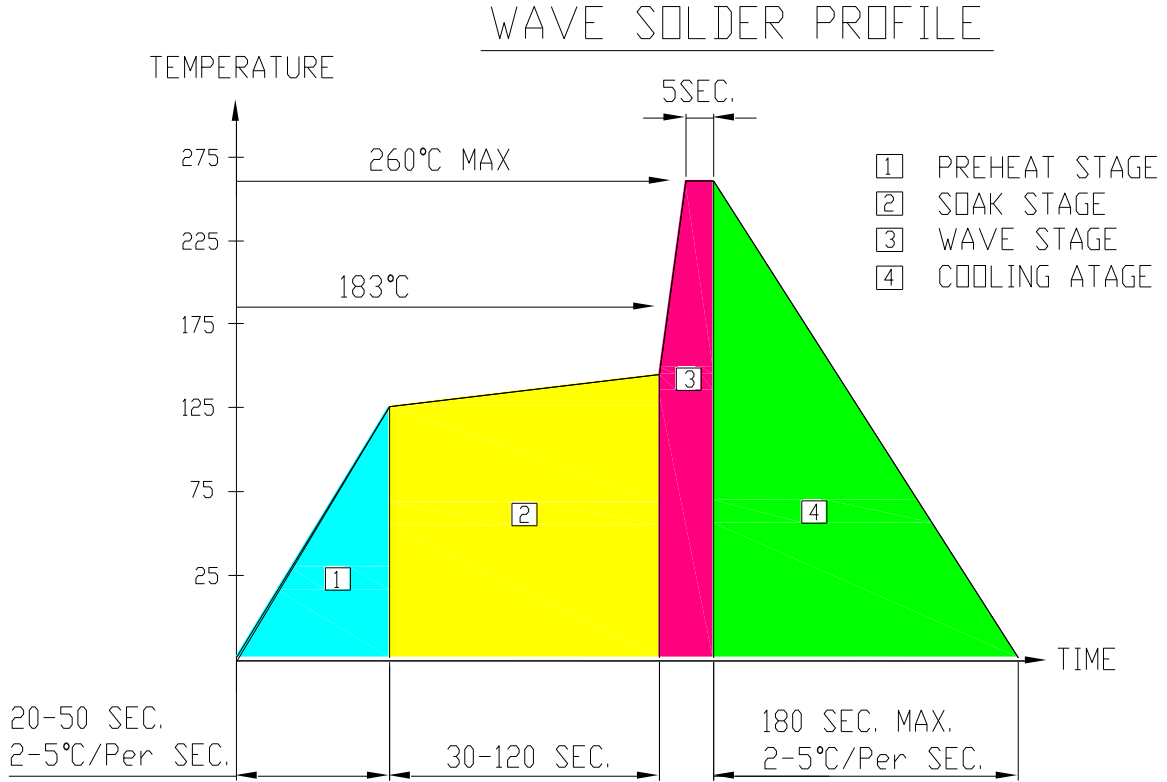


InGaN



# Solder Profile

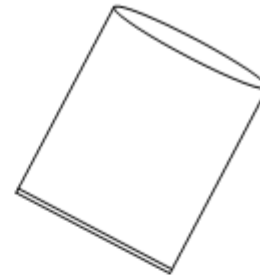
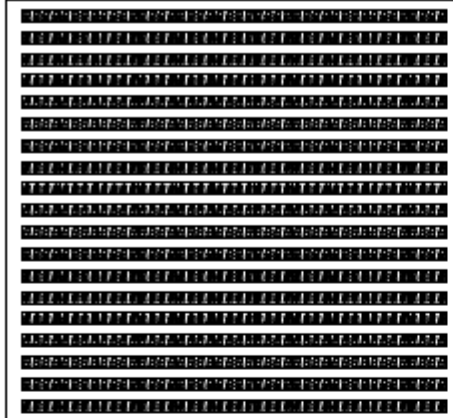
## Recommended Solder Profile





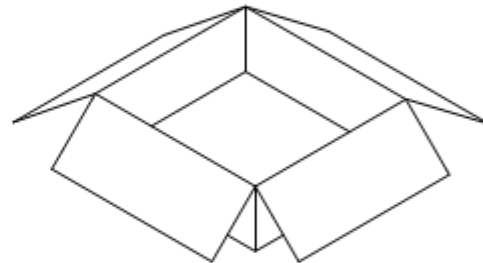
**Packing**

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



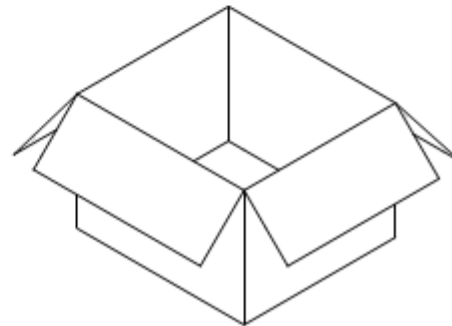
BAG SIZE :450X410X560

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

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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.