

# **QT-Brightek Display Series**

## **0.56" Single Digit SMD Display**

**Part No.: QBSS56ZXX**

**Z = 0: Common Anode**  
**Z = 1: Common Cathode**  
**XX= Color Code**

Product: QBSS56ZXX	Date: June 21, 2024	Page 1 of 11
	Version# 1.5	

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## Introduction

### Feature:

- 0.56" single digit seven segments smd display
- Low power consumption
- Packed in reel
- AllInGaP Technology S/R/O/Y/AG
- InGaN Technology IB/IG
- Z=0: Common anode
- Z=1: Common cathode
- XX= Color code

### Description:

This 0.56" single-digit, seven-segment displays are made with white segments and a grey surface.

### Application:

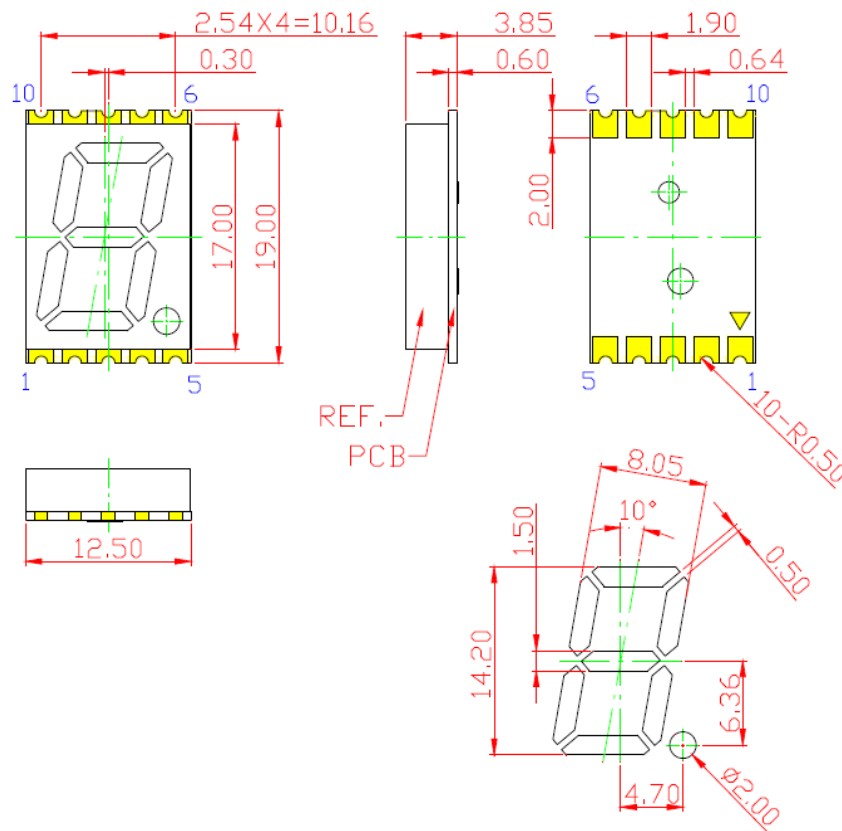
- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

### Certification & Compliance:

- ISO9001
- RoHS Compliant



### Dimension:



Units: mm / tolerance = +/-0.25mm

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

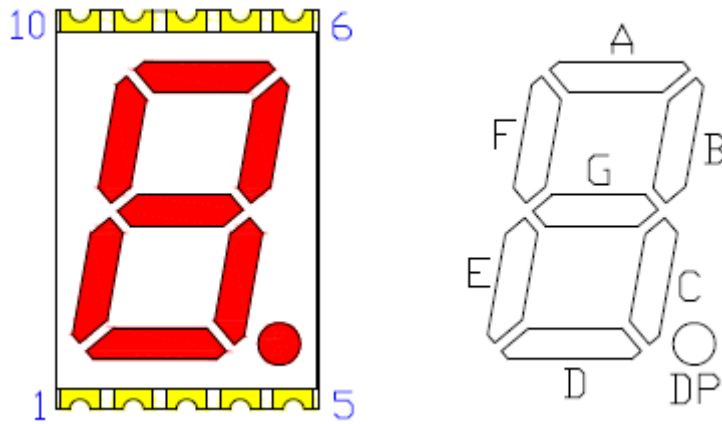
Product		Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ <sub>D</sub> (nm)			λ <sub>P</sub> (nm)	I <sub>V</sub> (mcd)
CA	CC			Typ.	Max.	Min.	Typ.	Max.	Typ.	Typ.
QBSS560S	QBSS561S	Deep Red	20	2.1	2.4	635	643	648	650	7
QBSS560R3	QBSS561R3	Red	20	2.1	2.4	625	630	637	641	38
QBSS560R	QBSS561R	Red	20	2.1	2.4	619	624	629	635	55
QBSS560O	QBSS561O	Orange	20	2.0	2.4	601	606	613	612	46
QBSS560Y	QBSS561Y	Yellow	20	2.1	2.4	585	590	595	593	46
QBSS560AG	QBSS561AG	Yellow Green	20	2.1	2.4	567	571	576	573	15
QBSS560IG	QBSS561IG	True Green	20	3.0	3.4	515	525	530	-	500
QBSS560IB	QBSS561IB	Blue	20	3.0	3.4	464	465	474	-	50

## Absolute Maximum Rating

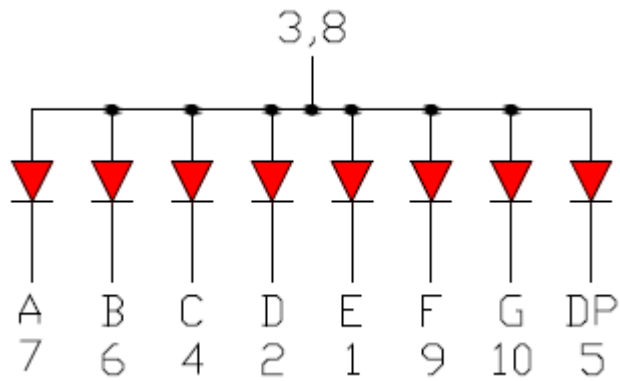
Material	P <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>PF</sub> (mA)*	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)
AllnGaP	48	20	40	5	-40 to +105	-40 to +105
InGaN	90	30	60	5	-40 to +105	-40 to +105

\*Duty 1/10 @ 1KHz

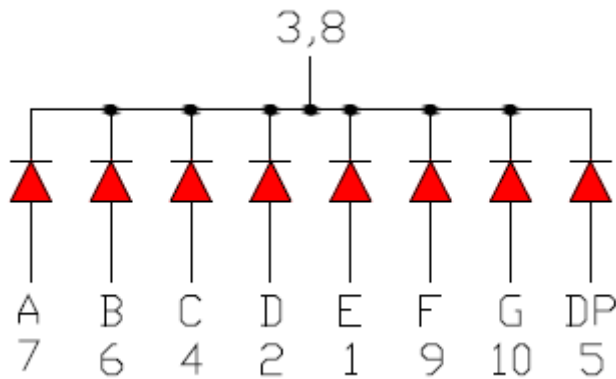
## Pin Configuration



### Common Anode (QBSS560XX)

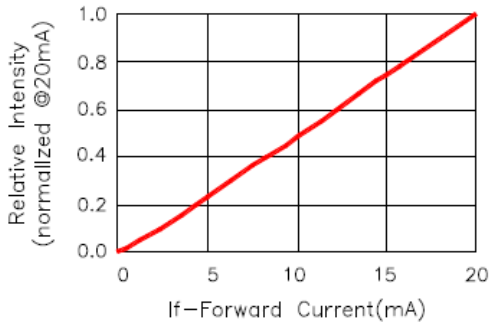


### Common Cathode (QBSS561XX)

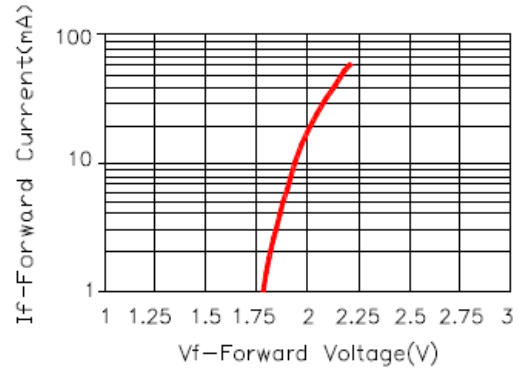


## Characteristic Curves

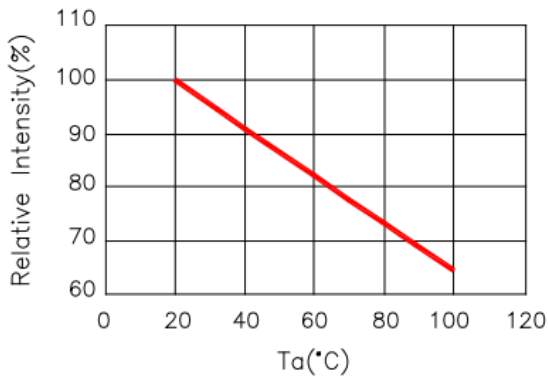
AllnGaP (S/R/O/Y/AG)



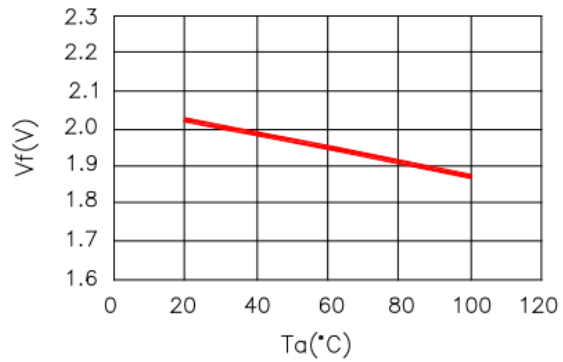
Relative Luminous Intensity vs. Forward Current



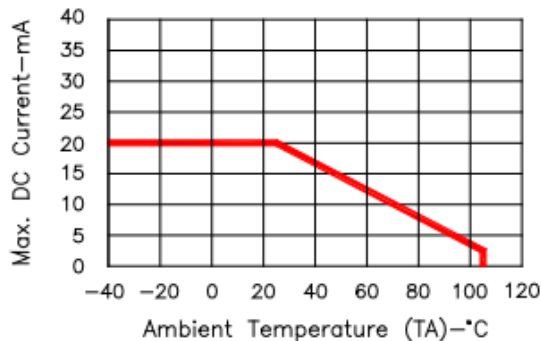
Forward Current vs. Forward Voltage



Relative Intensity(@20mA) vs. Ambient Temperature

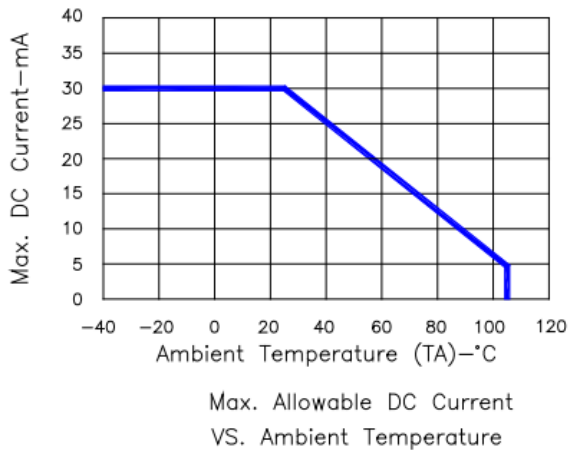
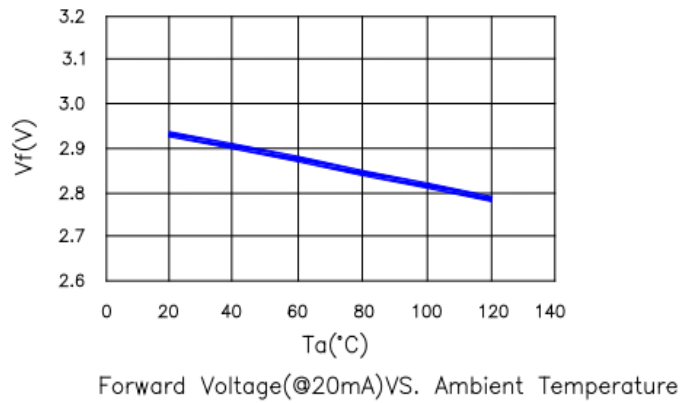
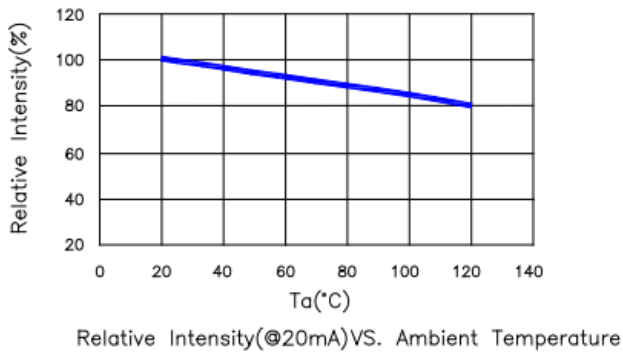
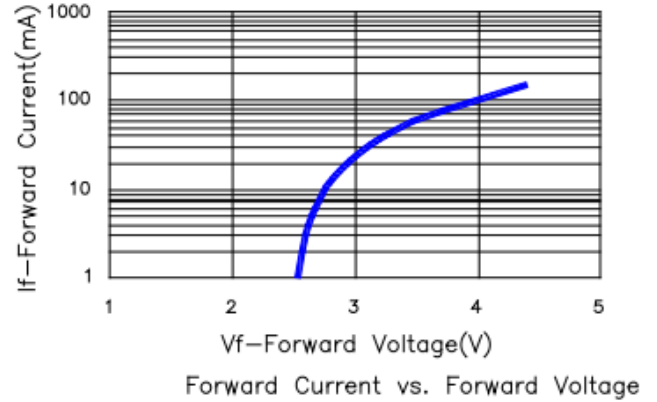
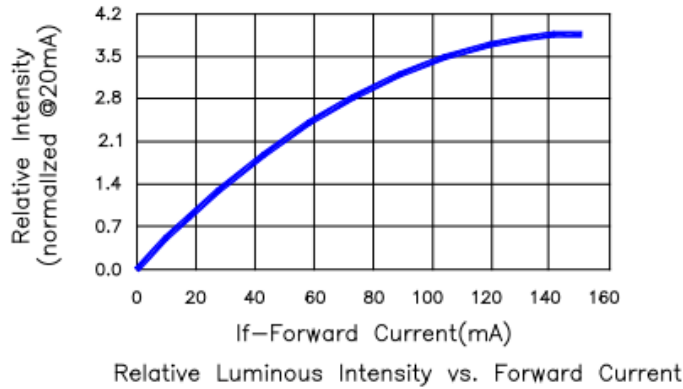


Forward Voltage(@20mA) vs. Ambient Temperature



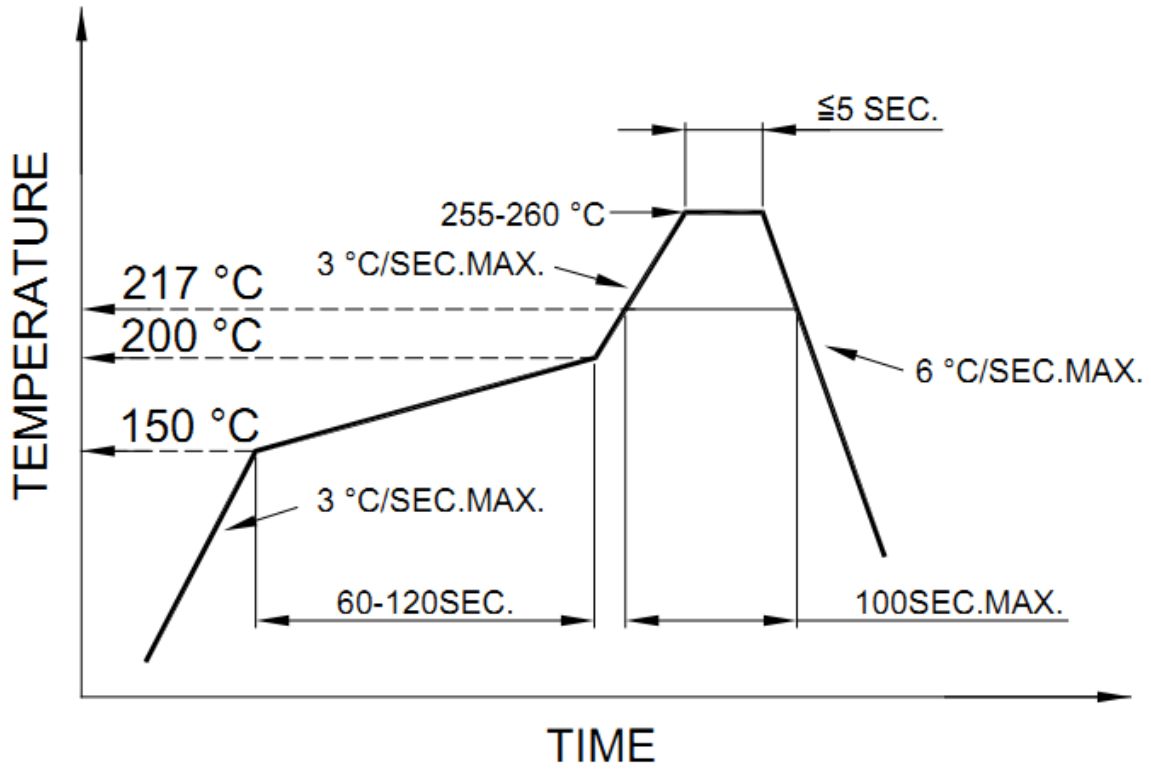
Max. Allowable DC Current  
VS. Ambient Temperature

## InGaN (IG/IB)

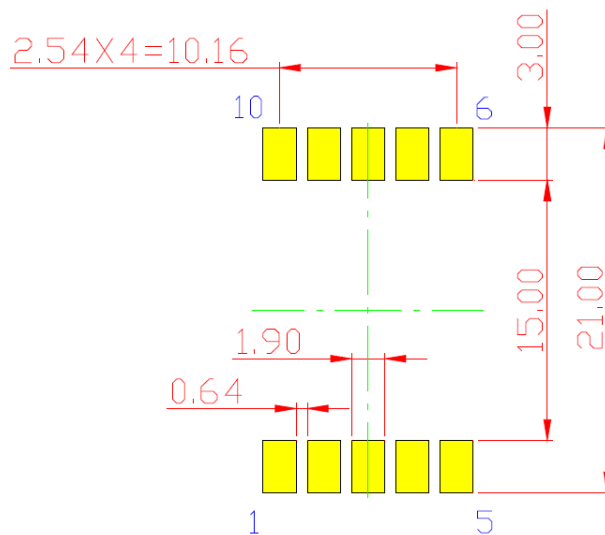


**Solder Profile**

**Recommended Lead Free Solder Profile**



**Recommended Pad Layout**

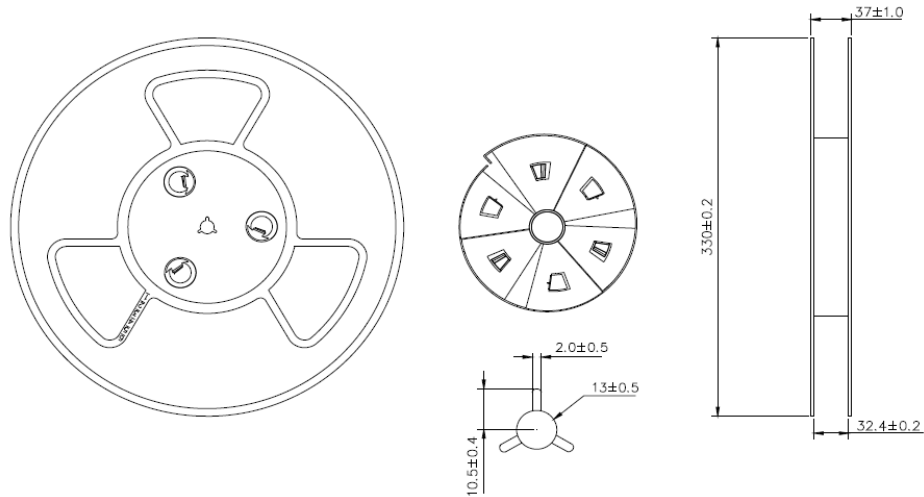


Units: mm



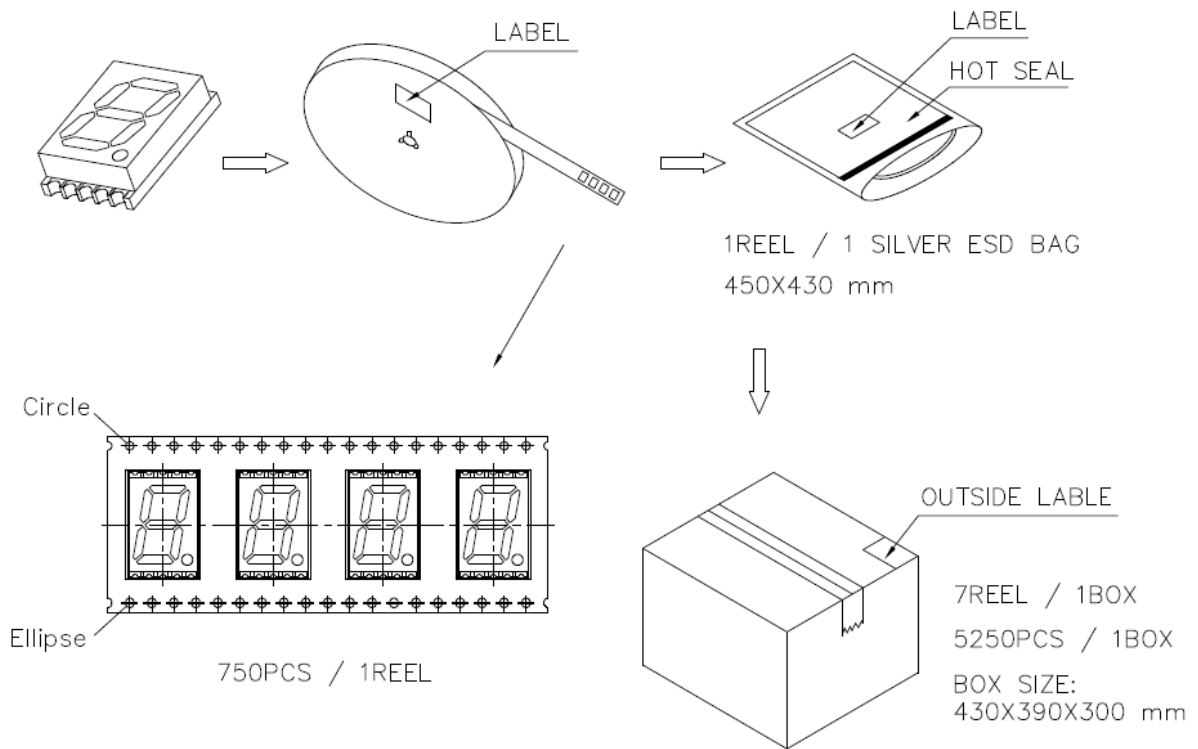
## Packing

Reel Dimensions:



Unit: mm

Packing Specifications:



**Ordering Information**

Orderable Part #		Spec Range	Quantity per reel
CA	CC		
QBSS560S	QBSS561S	Iv=7mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =639nm typ.	750pcs
QBSS560R3	QBSS561R3	Iv=38mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =630nm typ.	
QBSS560R	QBSS561R	Iv=55mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =624nm typ.	
QBSS560O	QBSS561O	Iv=46mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =606nm typ.	
QBSS560Y	QBSS561Y	Iv=46mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =590nm typ.	
QBSS560AG	QBSS561AG	Iv=15mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =571nm typ.	
QBSS560IG	QBSS561IG	Iv=500mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =525nm typ.	
QBSS560IB	QBSS561IB	Iv=50mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> =465nm typ.	

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## Revision History

Description:	Revision #	Revision Date
New Release of QBSS56ZXX	V1.0	06/21/2024
Amend format and optical spec	V1.1	01/20/2014
Add Packing spec	V1.2	08/27/2015
Update dimension drawing and brightness	V1.3	10/29/2015
Update brightness	V1.4	12/16/2022
Update brightness for red , add R3 option	V1.5	12/16/2022

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## 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.