

# QT-Brightek SMD Display Series

## 0.56" Single Digit Display

**Part No.: QBSS56ZXX**

**XX= Color**

**Z= 1: Common Cathode**

**Z = 0: Common Anode**

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## Introduction

### Feature:

- 0.56" Single digit seven segments display
- Low power consumption
- Packed in reel
- White segment and grey surface
- XX = color code
- Z=1: Common Cathode or 0: Common Anode

### Description:

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

### Application:

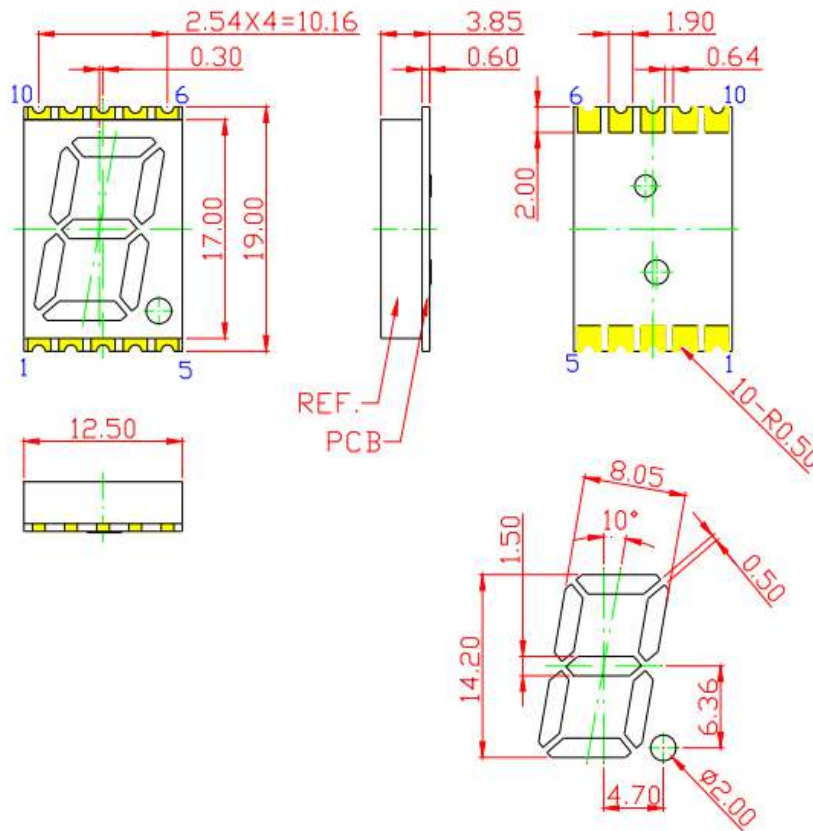
- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

### Certification & Compliance:

- ISO9001
- RoHS Compliant



## Dimension:



Units: mm / tolerance = +/-0.25mm

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

Product		Material	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)
CC	CA				Typ.	Max.	Min.	Typ.	Max.	Typ.	Typ.
QBSS561R	QBSS560R	AllnGaP	Red	20	2.1	2.4	619	624	629	632	60
QBSS561S	QBSS560S	AllnGaP	Deep Red	20	2.1	2.4	635	640	648	650	18
QBSS561Y	QBSS560Y	AllnGaP	Yellow	20	2.1	2.4	585	590	595	593	65
QBSS561O	QBSS560O	AllnGaP	Orange	20	2.0	2.4	601	606	613	612	58
QBSS561AG	QBSS560AG	AllnGaP	Green	20	2.1	2.4	567	570	576	573	16
QBSS561IG	QBSS560IG	InGaN	True Green	20	3.0	3.4	515	520	530	-	530
QBSS561IB	QBSS560IB	InGaN	Blue	20	3.0	3.4	464	470	474	-	100

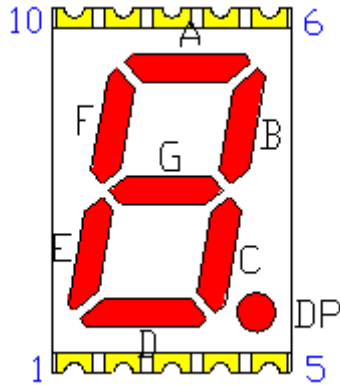
**Absolute Maximum Rating**

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)	T <sub>SOL</sub> (°C)**
AllnGaP	48	20	40	5	-40 to +105	-40 to +105	260
InGaN	90	30	100	5	-40 to +105	-40 to +105	260

\*Duty 1/10 @ 1KHz

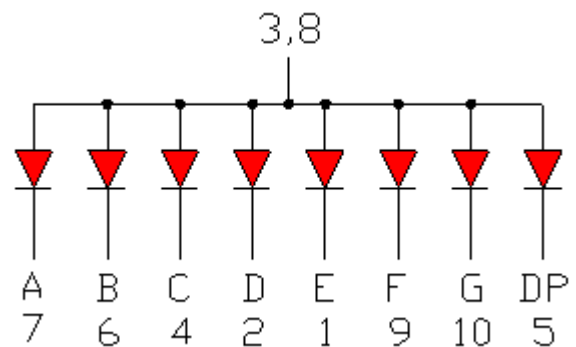
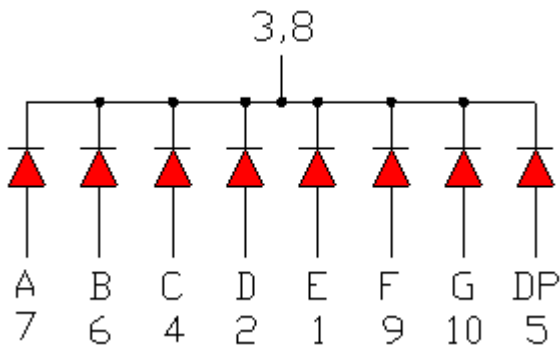
\*\*IR Reflow for no more than 5 sec @ 260 °C

**Pin Configuration**



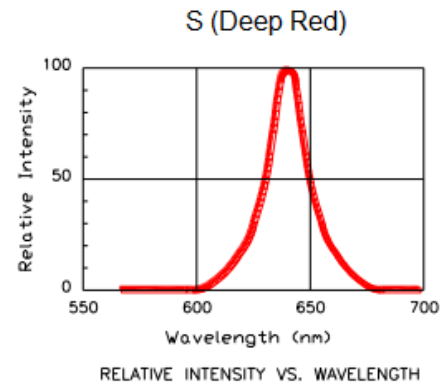
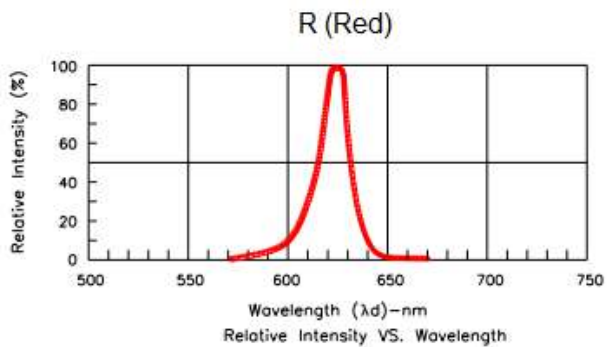
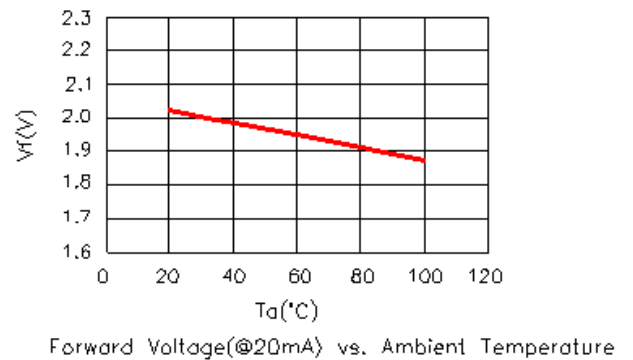
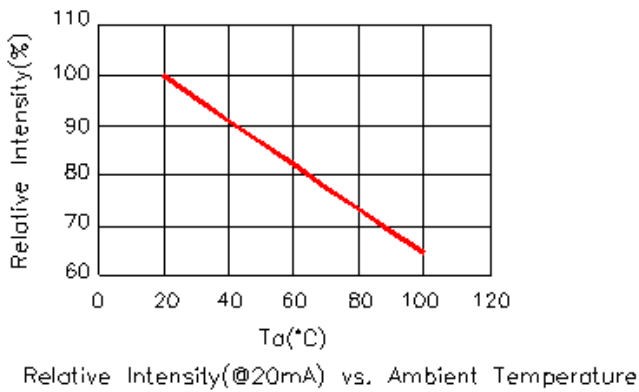
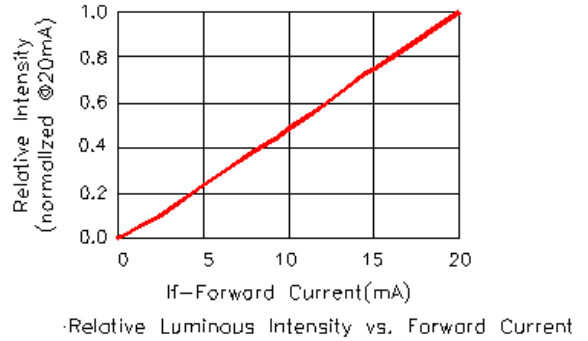
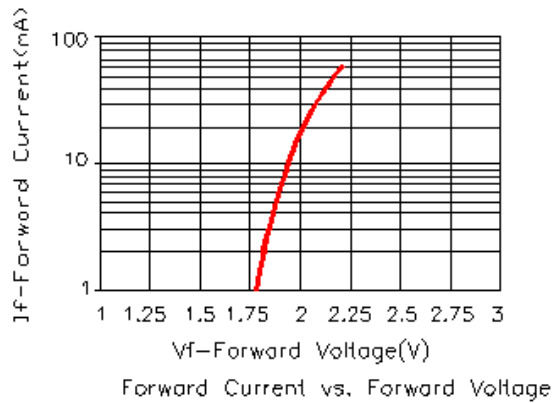
**Common Cathode (QBSS561XX)**

**Common Anode (QBSS560XX)**

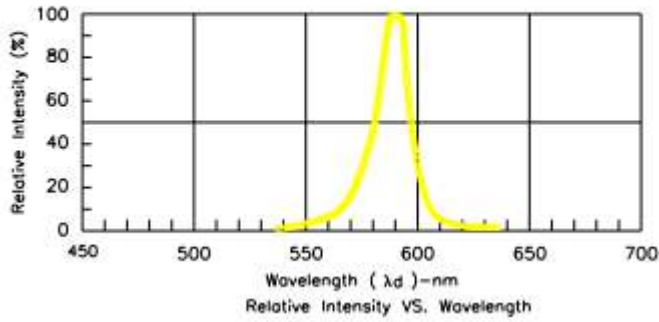


**Characteristic Curves**

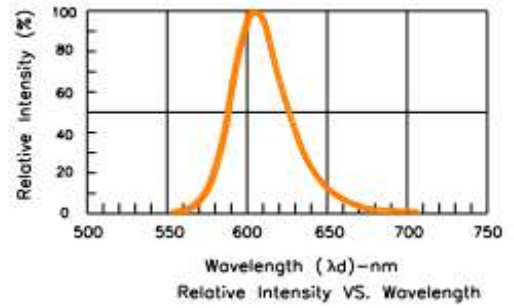
AllnGaP (R/S/Y/O/AG)



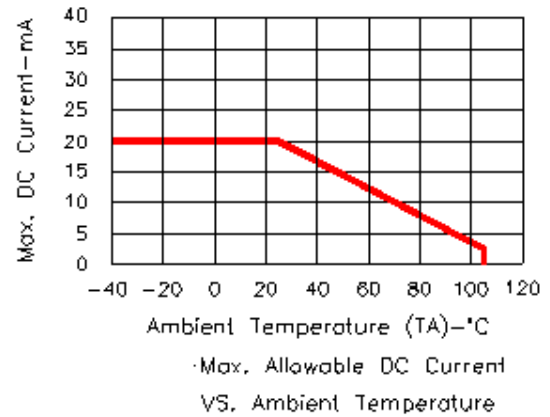
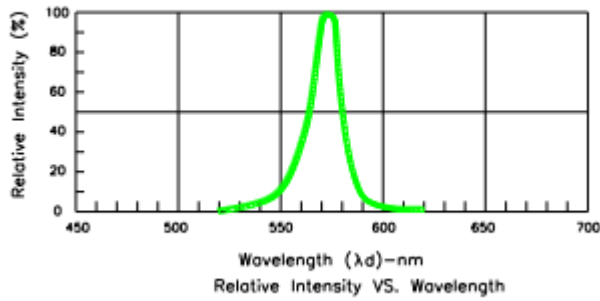
Y (Yellow)



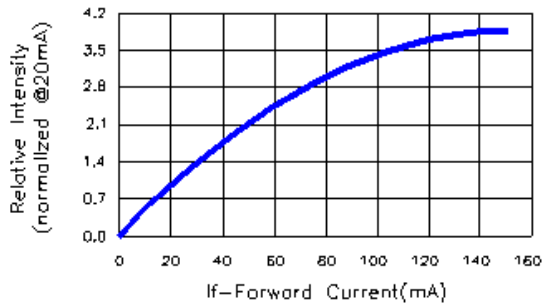
O (Orange)



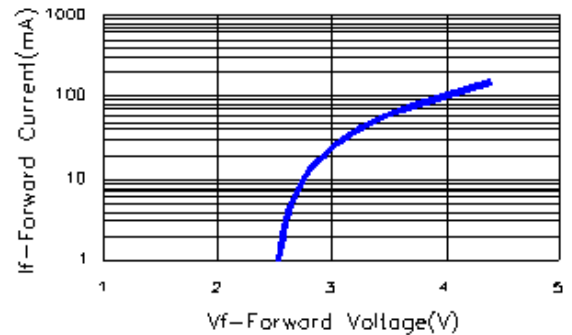
AG (Green)



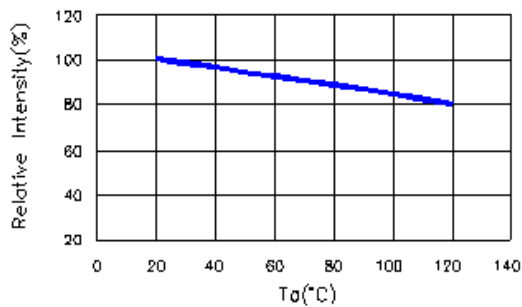
## InGaN (IG/IB)



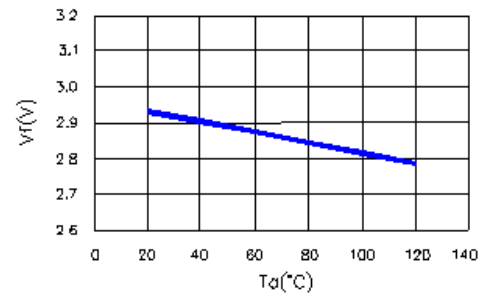
Relative Luminous Intensity vs. Forward Current



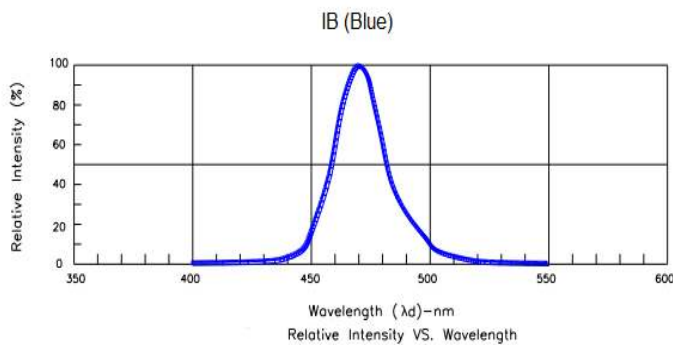
Forward Current vs. Forward Voltage



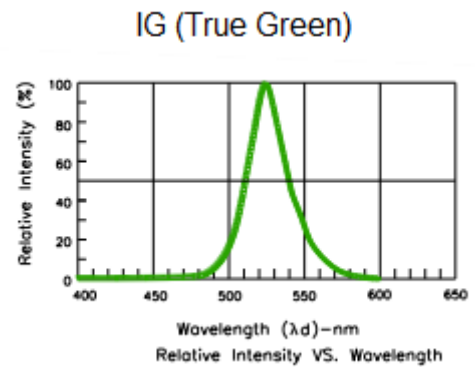
Relative Intensity(@20mA)VS Ambient Temperature



Forward Voltage(@20mA)VS. Ambient Temperature

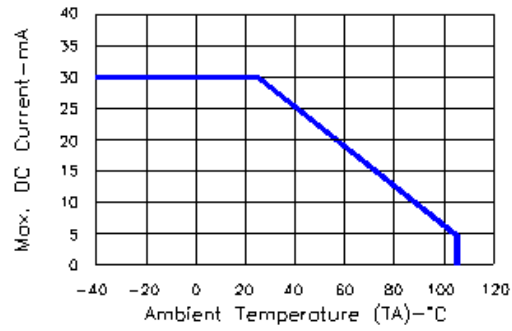


Relative Intensity VS. Wavelength



Relative Intensity VS. Wavelength

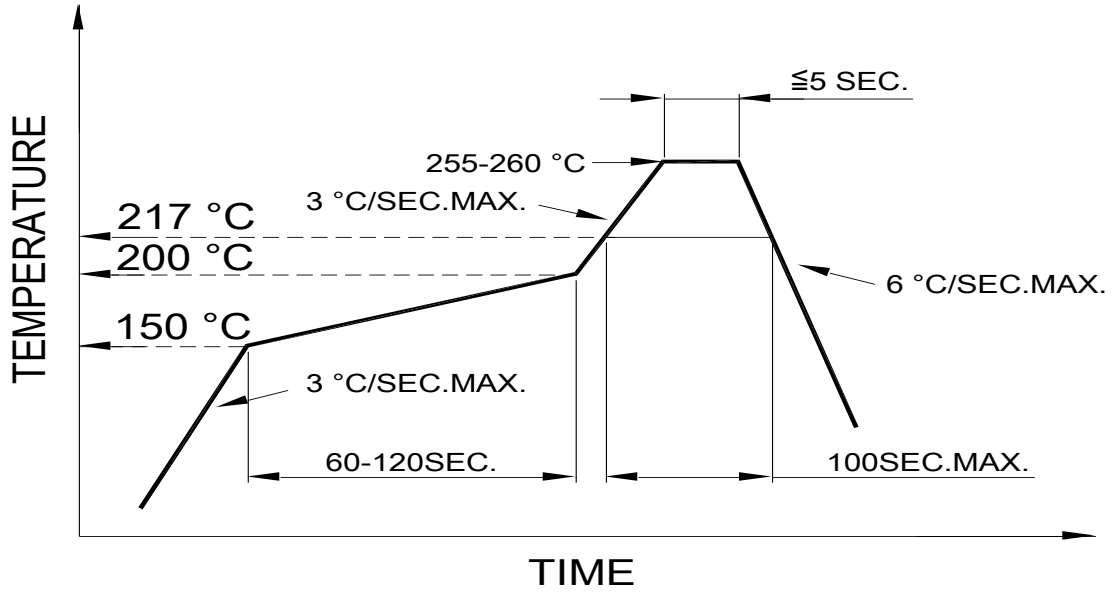




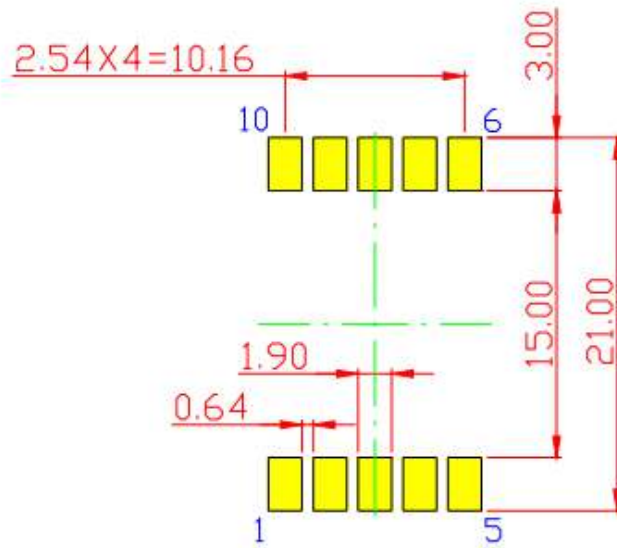
Max. Allowable DC Current  
VS. Ambient Temperature

### Solder Profile & Footprint

Pb free reflow soldering Profile



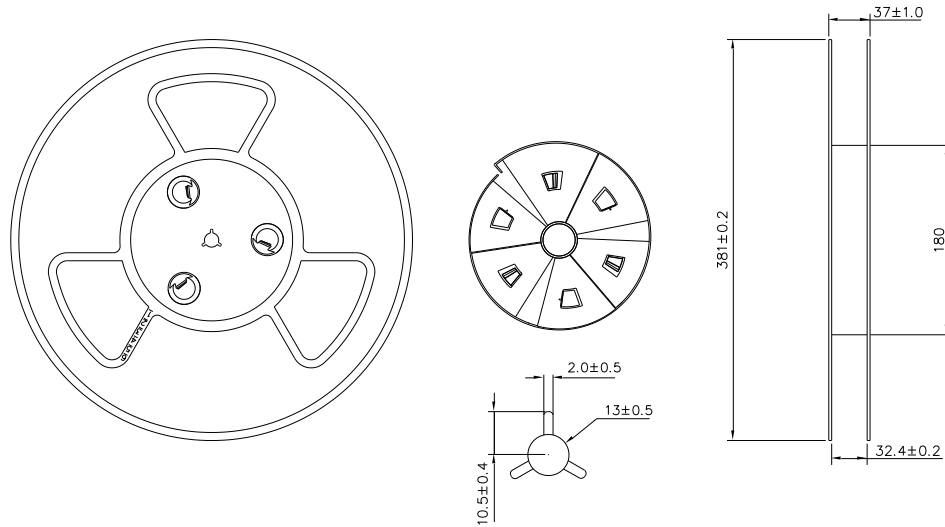
Recommended Pad Layout



Units: mm

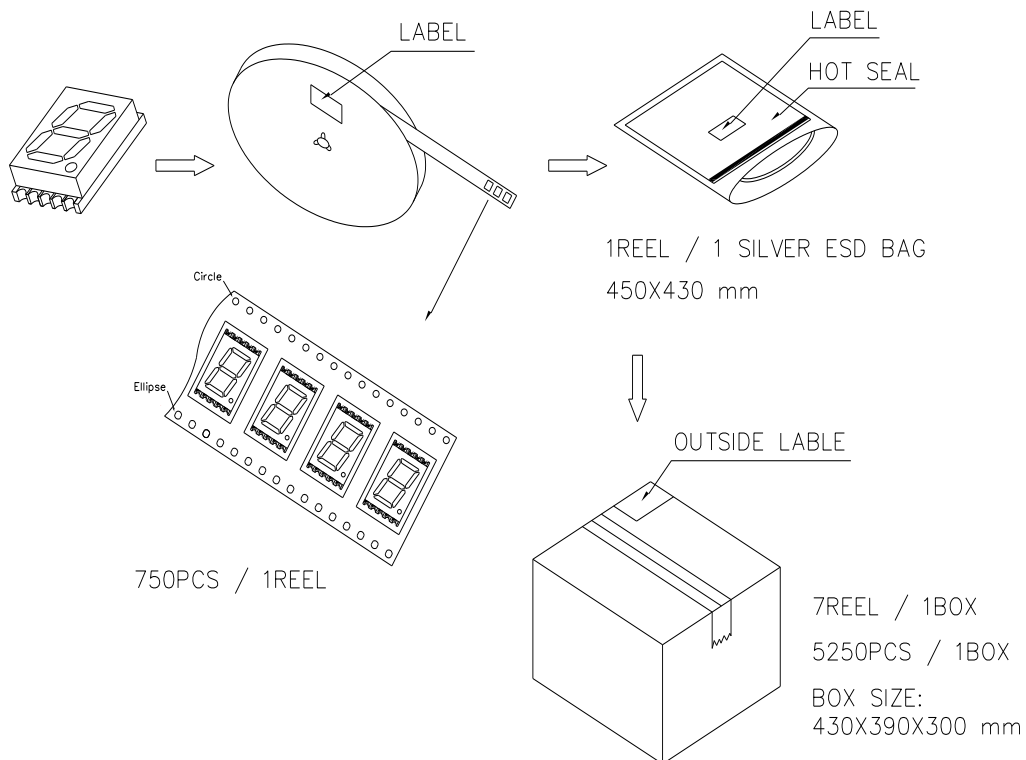
## Packing & Labeling

Reel Dimensions:



Unit: mm

Packing Method:



### Ordering Information

Product		Orderable Part #		Spec Range	Quantity per Reel
CC	CA	CC	CA		
QBSS561R	QBSS560R	QBSS561R	QBSS560R	Iv=60mcd typ. @ I <sub>F</sub> =20mA / λ <sub>D</sub> :624nm typ.	750
QBSS561S	QBSS560S	QBSS561S	QBSS560S	Iv=18mcd typ. @ I <sub>F</sub> =20mA / λ <sub>D</sub> :640nm typ.	750
QBSS561Y	QBSS560Y	QBSS561Y	QBSS560Y	Iv=65mcd typ. @ I <sub>F</sub> =20mA / λ <sub>D</sub> :590nm typ.	750
QBSS561O	QBSS560O	QBSS561O	QBSS560O	Iv=58mcd typ. @ I <sub>F</sub> =20mA / λ <sub>D</sub> :606nm typ.	750
QBSS561AG	QBSS560AG	QBSS561AG	QBSS560AG	Iv=16mcd typ. @ I <sub>F</sub> =20mA / λ <sub>D</sub> :571nm typ.	750
QBSS561IG	QBSS560IG	QBSS561IG	QBSS560IG	Iv=530mcd typ. @ I <sub>F</sub> =20mA / λ <sub>D</sub> :525nm typ.	750
QBSS561IB	QBSS560IB	QBSS561IB	QBSS560IB	Iv=100mcd typ. @ I <sub>F</sub> =20mA / λ <sub>D</sub> :470nm typ.	750

**Revision History**

Description:	Revision #	Revision Date
New Release of QBSS56ZXX	V1.0	06/24/2011
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

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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.