

**QT-Brightek Chip LED Series**

**SMD Side View 0802 LED**

**Part No.: QBLP612 Series**

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## Introduction

**Feature:**

- Water clear lens (except for white color)
- Yellow lens for White
- Package in tape and reel
- Side View Ultra bright 0802 LED package
- AllInGaP technology for R/Y/AG
- InGaN technology for IG/IW
- Viewing Angle = 150° typ.

**Description:**

These ultra bright 0802 LEDs have a height profile of 0.6mm. With higher packing density and smaller footprint, these LEDs are ideal for smaller equipment and miniature application.

**Application:**

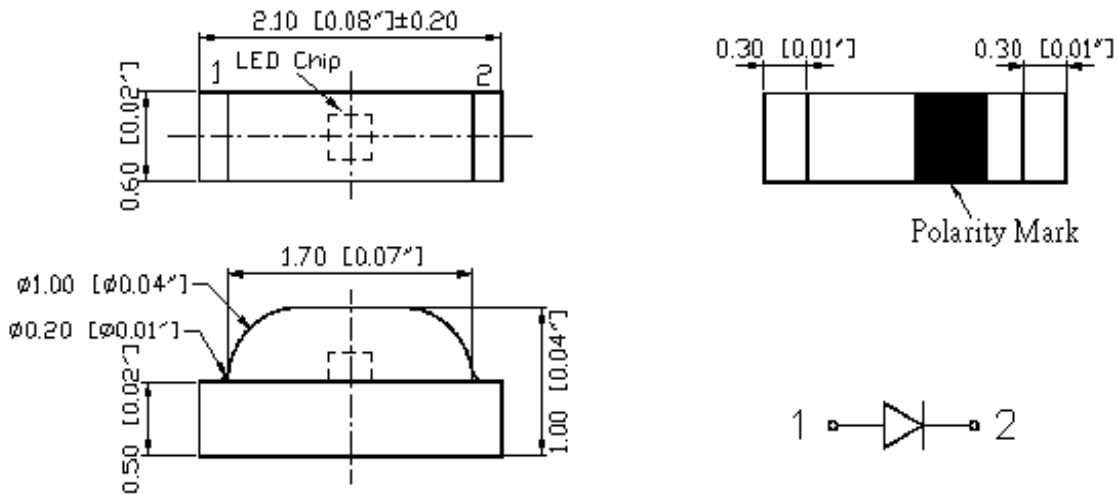
- Status indication
- Back lighting application
- General Use

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.1mm

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

Product	Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ <sub>D</sub> (nm)			I <sub>V</sub> (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP612-R	Red	20	2.0	2.5	625	630	635	40	70
QBLP612-Y	Yellow	20	2.0	2.5	585	590	595	63	110
QBLP612-AG	Yellow Green	20	2.0	2.5	565	570	576	25	40
QBLP612-IG	True Green	20	3.2	3.7	520	525	530	250	430
QBLP612-IW-CW	Cool White	20	3.2	3.7	X=0.25 Y=0.24	-	X=0.33 Y=0.34	160	320

**Absolute Maximum Rating**

Material	P <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> (mA)*	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)	T <sub>SOL</sub> (°C)**
AllnGaP	75	30	125	5	-40 to +80	-40 to +85	260
InGaN	111	30	125	5	-40 to +80	-40 to +85	260

\*Duty 1/8 @ 1kHz

\*\*IR Reflow for no more than 10 sec @ 260 °C

**Forward Voltage V<sub>F</sub> for AllnGaP @ I<sub>F</sub>=20mA**

Bin	Min.	Max.	Unit
□	1.7	2.5	V

**Forward Voltage V<sub>F</sub> for InGaN @ I<sub>F</sub>=20mA**

Bin	Min.	Max.	Unit
f	2.8	3.1	V
g	3.1	3.4	
h	3.4	3.7	

**Luminous Intensity IV @ IF=20mA**

Bin	Min.	Max.	Unit
D	25	32	mcd
E	32	40	
F	40	50	
G	50	63	
H	63	80	
I	80	100	
J	100	125	
K	125	160	
L	160	200	
M	200	250	
N	250	320	
O	320	400	
P	400	500	
Q	500	630	
R	630	800	

**Dominant Wavelength  $\lambda_D$  for Red @ IF=20mA**

Bin	Min.	Max.	Unit
u	625	630	nm
v	630	635	

**Dominant Wavelength  $\lambda_D$  for Yellow @ IF=20mA**

Bin	Min.	Max.	Unit
m	585	590	nm
n	590	595	

**Dominant Wavelength  $\lambda_D$  for Yellow Green @ IF=20mA**

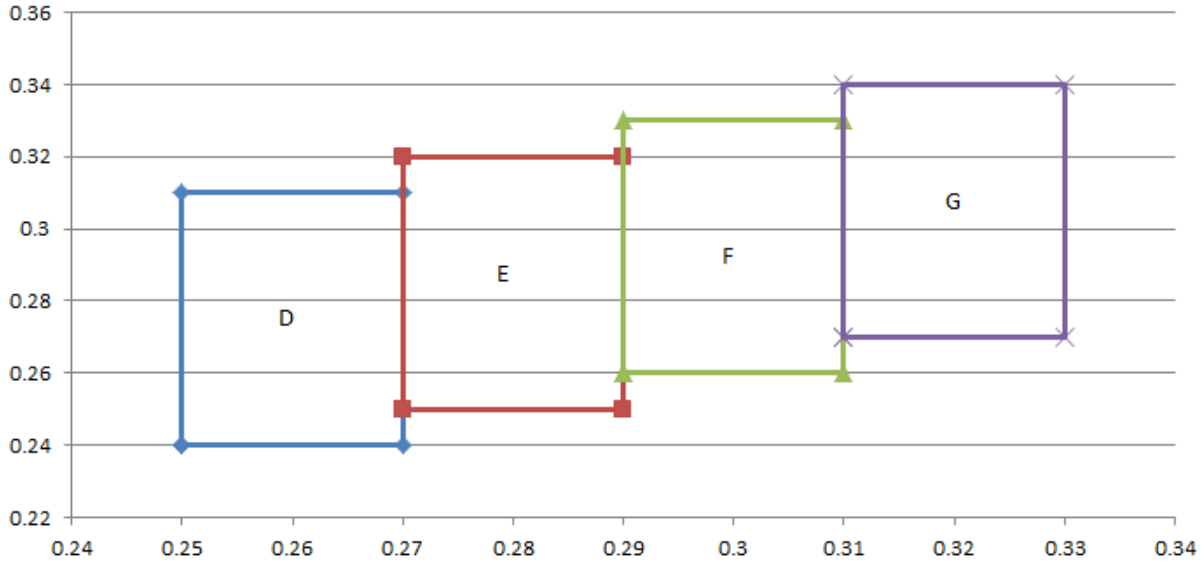
Bin	Min.	Max.	Unit
h	565	568	nm
i	568	572	
j	572	576	

**Dominant Wavelength  $\lambda_D$  for True Green @ IF=20mA**

Bin	Min.	Max.	Unit
U	520	522.5	nm
V	522.5	525	
W	525	527.5	
X	527.5	530	

# CIE Chromaticity Diagram

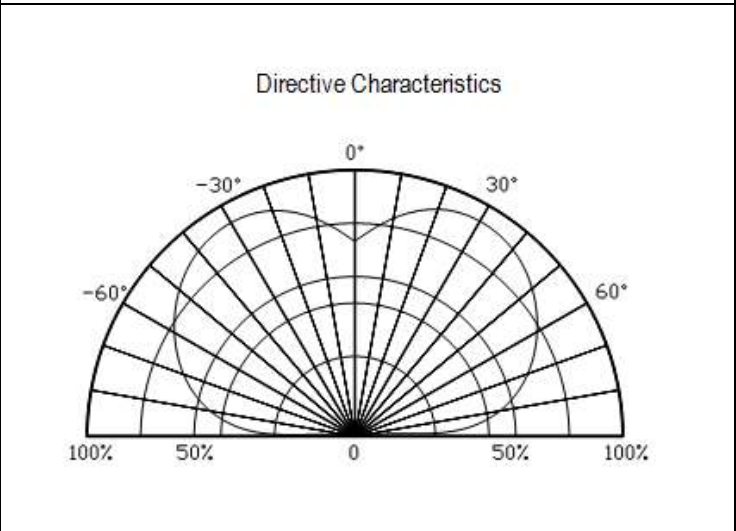
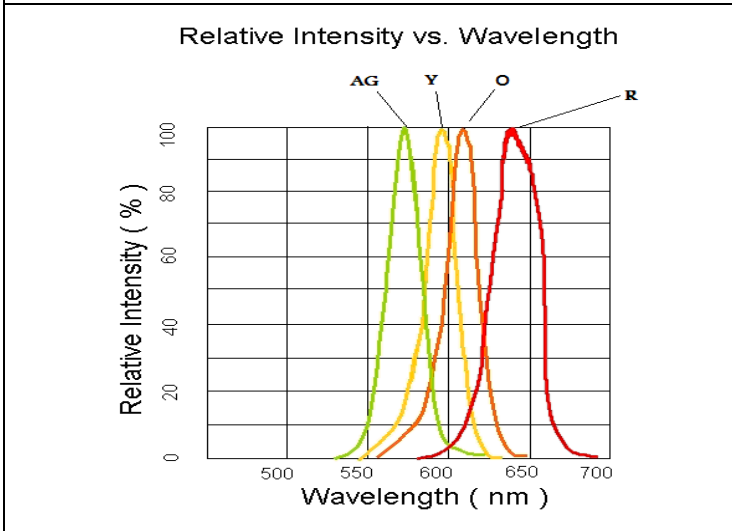
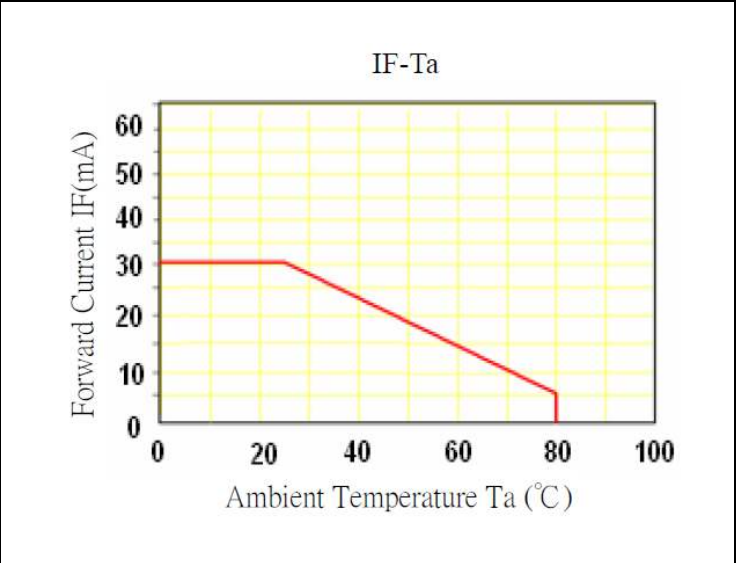
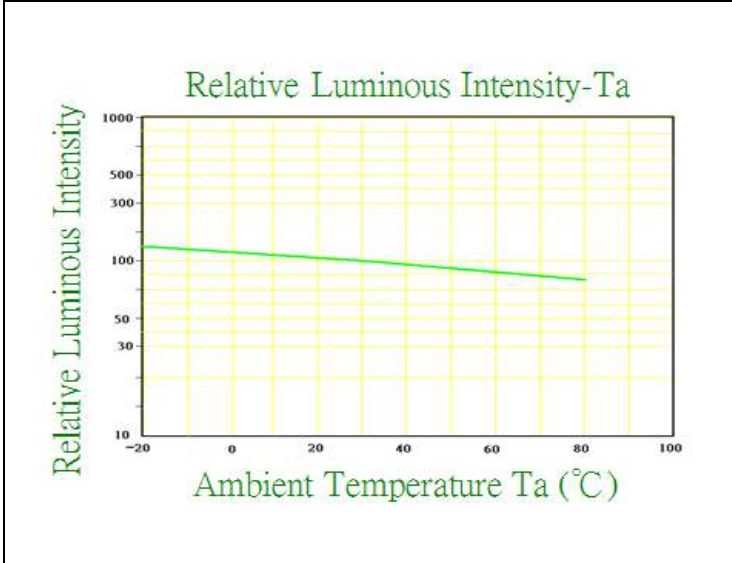
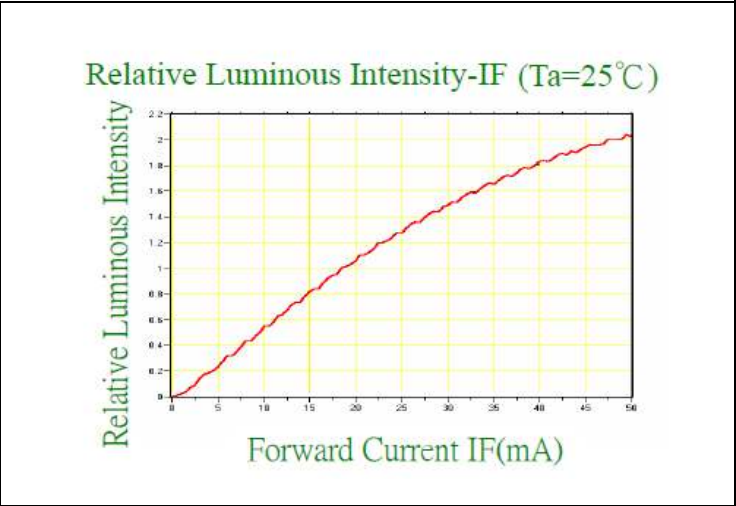
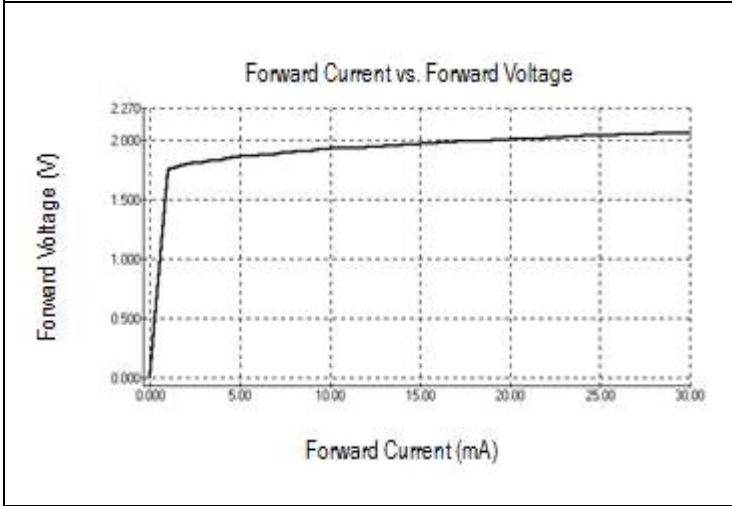
**Chromaticity Diagram**



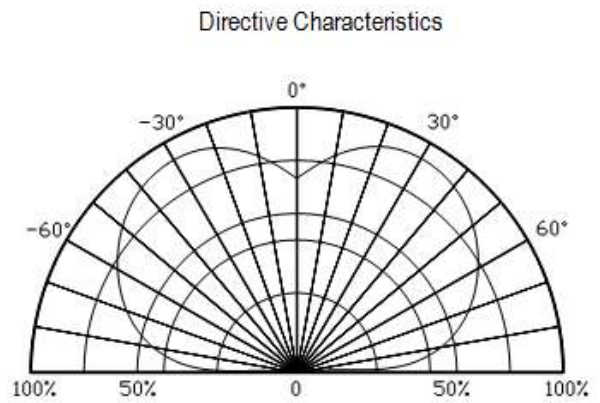
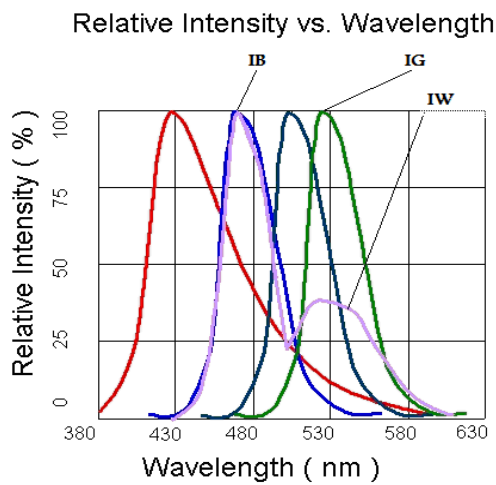
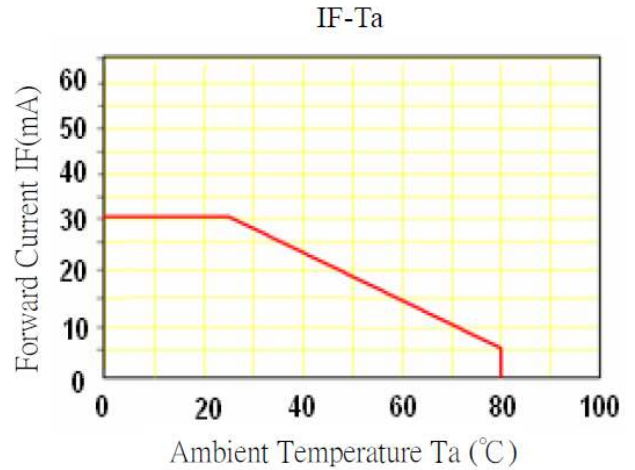
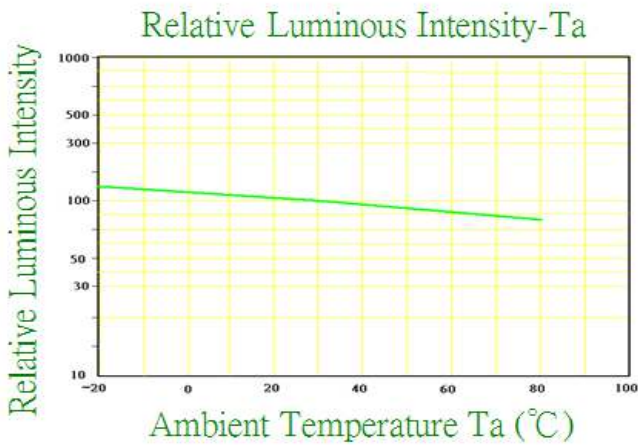
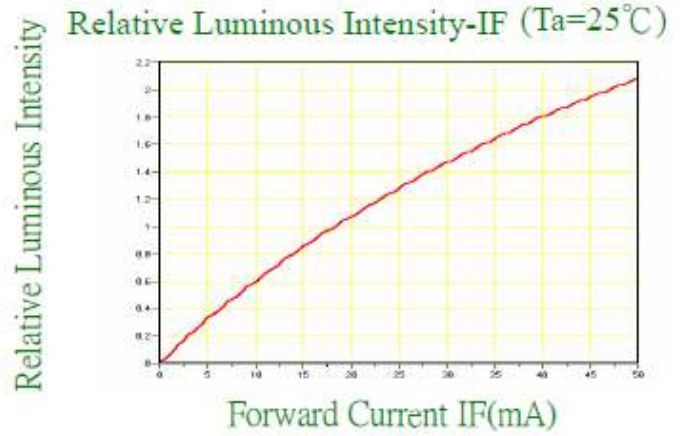
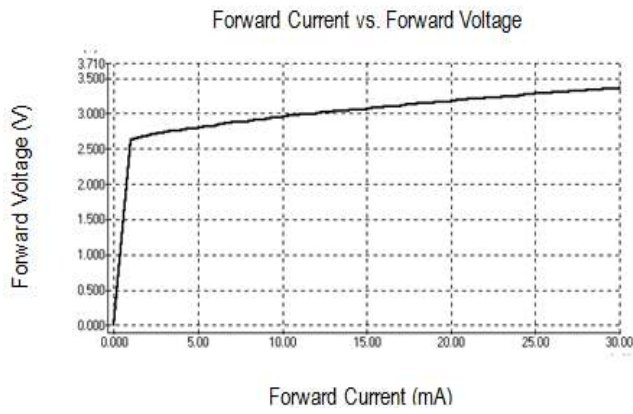
D		E		F		G	
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27
0.25	0.31	0.27	0.32	0.29	0.33	0.31	0.34
0.27	0.31	0.29	0.32	0.31	0.33	0.33	0.34
0.27	0.24	0.29	0.25	0.31	0.26	0.33	0.27
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27

**Characteristic Curves**

AllnGaP Technology (R/Y/AG)



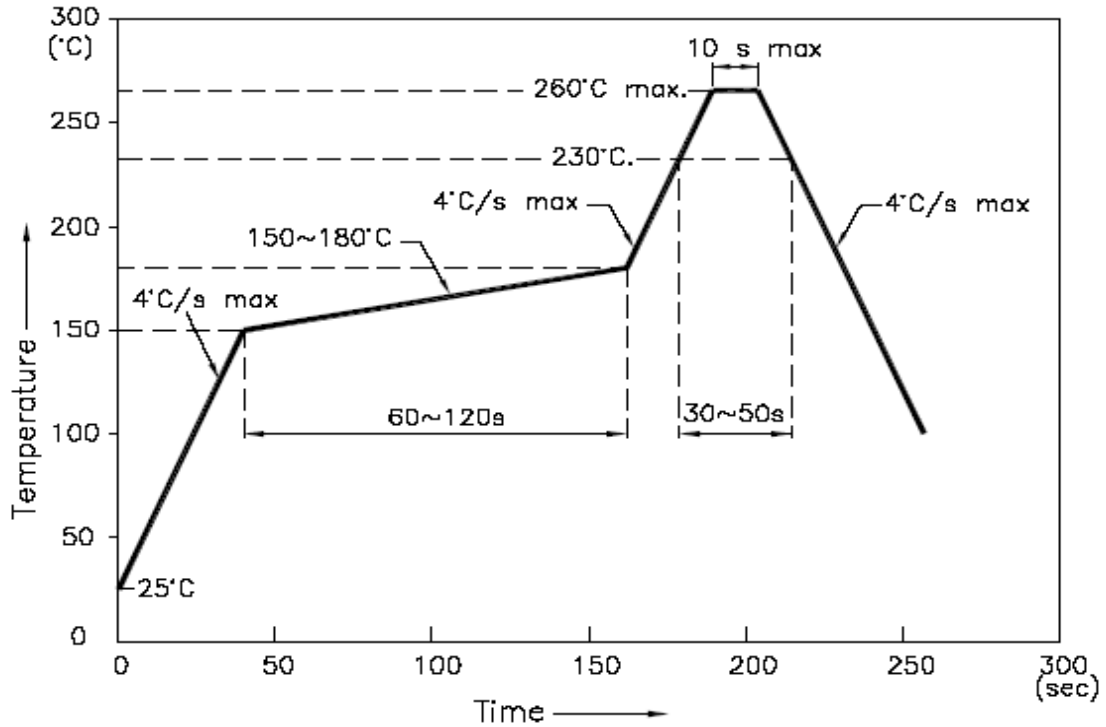
**InGaN Technology (IB/IG/IW)**



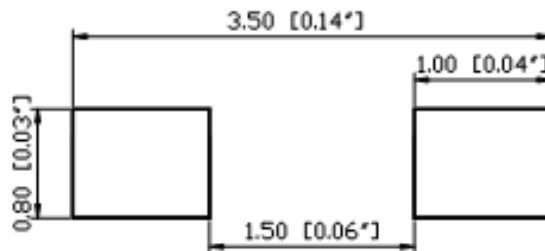


## Solder Profile & Footprint

-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



### Recommended Pad Layout

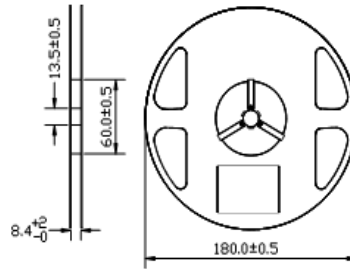


Units: mm

Tolerance: ± 0.1mm

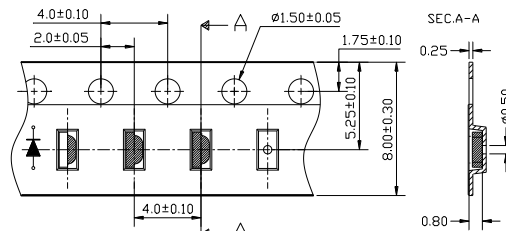
## Packing

### Reel Dimension:



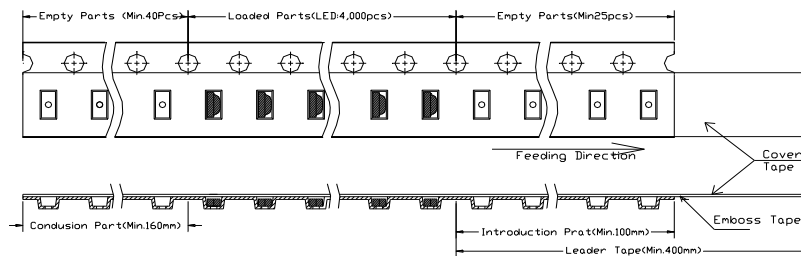
Unit: mm

### Tape Dimension:

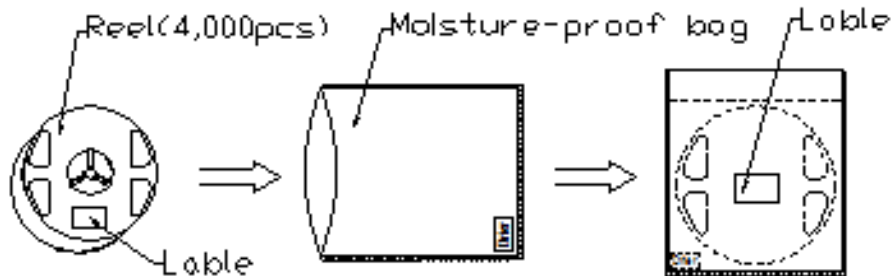


Unit: mm

### Arrangement of Tape:



### Packaging Specifications:



**Labeling**

Part No: \_\_\_\_\_

Customer P/N: \_\_\_\_\_

Item: \_\_\_\_\_

Q'ty: \_\_\_\_\_

Vf: \_\_\_\_\_

Iv: \_\_\_\_\_

WI: \_\_\_\_\_

Date: \_\_\_\_\_

**Made in China****Ordering Information**

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP612-R	QBLP612-R	Iv=70mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> : 625nm ~ 635nm	4,000 units
QBLP612-AG	QBLP612-AG	Iv=40mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> : 565nm ~ 576nm	4,000 units
QBLP612-IG	QBLP612-IG	Iv=430mcd typ. @ I <sub>F</sub> =20mA, λ <sub>D</sub> : 520nm ~ 530nm	4,000 units
QBLP612-IW-CW	QBLP612-IW-CW	Iv=320mcd typ. @ I <sub>F</sub> =20mA, Chromaticity Coordinate: (X=0.25, Y=0.24) min.	4,000 units

## Revision History

Description:	Revision #	Revision Date
New Release of QBLP612 Series	V1.0	09/16/2014
Add yellow color	V1.1	11/27/2017

## 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.

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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.