QT-Brightek PLCC Series

Dome Type PLCC2 LED

Part No.: QBLP670D Series

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Introduction

Feature:

- Water Clear lens
- Ultra bright dome type PLCC2 LED
- AlInGaP technology for R/S/Y/O/AG
- InGaN technology for IG/BG/IB
- 30 degree viewing angle
- MSL: Level 3

Description:

This dome type PLCC2 LED has a height profile of 3.6mm. Combination of high brightness output and robust package, this LED is ideal for architecture lighting, status indication, and color mixing applications.

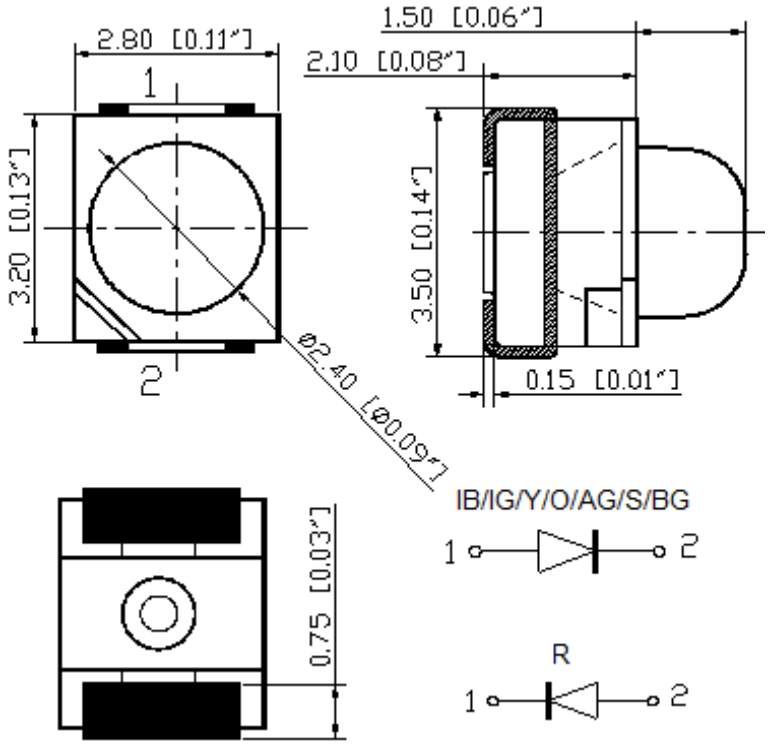
Application:

- Status indication
- Industrial equipment backlighting
- Architecture lighting

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.2mm

Electrical / Optical Characteristic (Ta=25 °C)

Product	Color	I_F (mA)	V_F (V)		λ_D (nm)			I_V (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP670D-R	Red	20	2.0	2.5	620	625	630	2000	3500
QBLP670D-S	Deep Red	20	2.0	2.5	625	630	635	500	900
QBLP670D-Y	Yellow	20	2.1	2.5	585	590	595	1000	1700
QBLP670D-AG	Yellow Green	20	2.0	2.5	565	570	576	200	400
QBLP670D-O	Orange	20	2.0	2.5	600	605	610	1250	2000
QBLP670D-IG	True Green	20	3.3	3.7	520	525	530	2500	4200
QBLP670D-BG	Cyan	20	3.3	3.7	500	505	510	2000	3400
QBLP670D-IB	Blue	20	3.2	3.7	465	470	475	500	900

Absolute Maximum Rating

Material	P_d (mW)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)
AlInGaP	75	30	125	5	-40 ~ +80	-40 ~ +85
InGaN	111	30	125	5	-40 ~+80	-40 ~+85

*Duty 1/8 @ 1KHz

Forward Voltage V_F for AlInGaP @ I_F=20mA

Bin	Min.	Max.	Unit
□	1.7	2.5	V

Forward Voltage V_F for InGaN @ I_F=20mA

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

Luminous Intensity I_V @ I_F=20mA

Bin	Min.	Max.	Unit
M	200	250	mcd
N	250	320	
O	320	400	
P	400	500	
Q	500	630	
R	630	800	
S	800	1000	
T	1000	1250	
U	1250	1600	
V	1600	2000	
W	2000	2500	
X	2500	3200	
Y	3200	4000	
Z	4000	5200	
a	5200	6800	

Dominant Wavelength λ_D for Red @ I_F=20mA

Bin	Min.	Max.	Unit
t	620	625	nm
u	625	630	

Dominant Wavelength λ_D for Deep Red @ I_F=20mA

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

Dominant Wavelength λ_D for Yellow @ I_F=20mA

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

Dominant Wavelength λ_D for Orange @ I_F=20mA

Bin	Min.	Max.	Unit
p	600	605	nm
q	605	610	

Dominant Wavelength λ_D for True Green @ I_F=20mA

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

Dominant Wavelength λ_D for True Green @ I_F=20mA

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

Dominant Wavelength λ_D for Cyan @ I_F=20mA

Bin	Min.	Max.	Unit
M	500	502.5	nm
N	502.5	505	
O	505	507.5	
P	507.5	510	

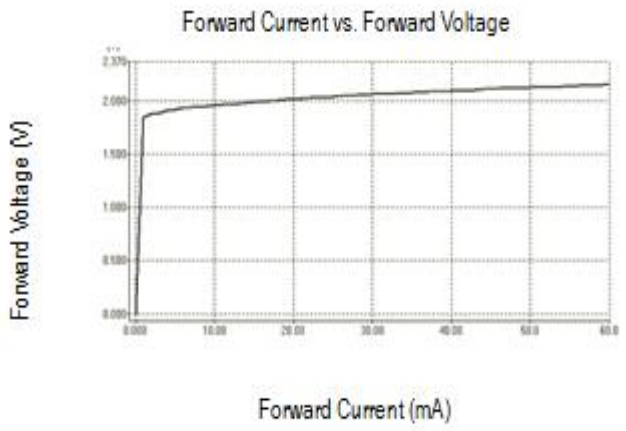
Dominant Wavelength λ_D for Blue @ I_F=20mA

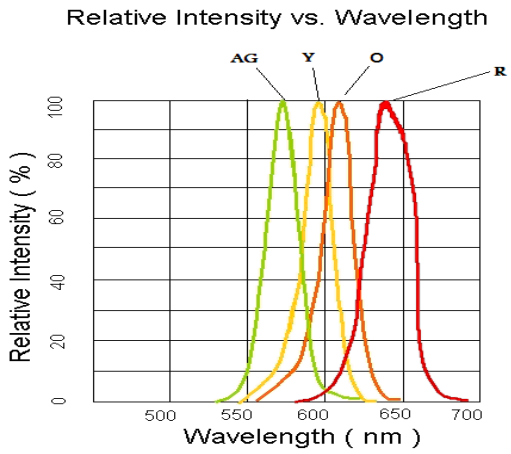
Bin	Min.	Max.	Unit
G	465	467.5	nm
H	467.5	470	
I	470	472.5	
J	472.5	475	

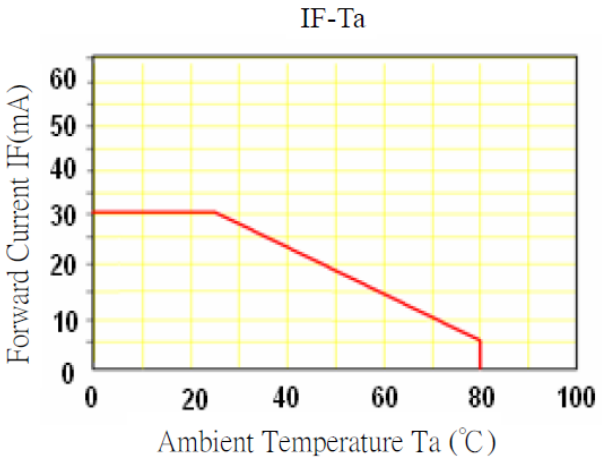
Note:
Tolerance of measurement of forward voltage: ±0.1V
Tolerance of measurement of dominant wavelength: ±1nm
Tolerance of measurement of luminous intensity: ±15%
All parameters are measured by QT-Brightek equipment

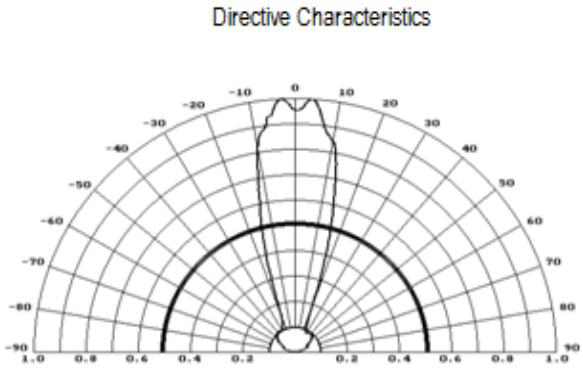
Characteristic Curves

AlInGaP

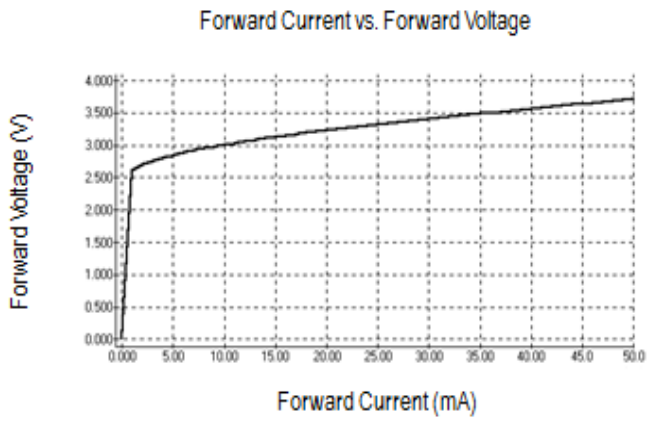


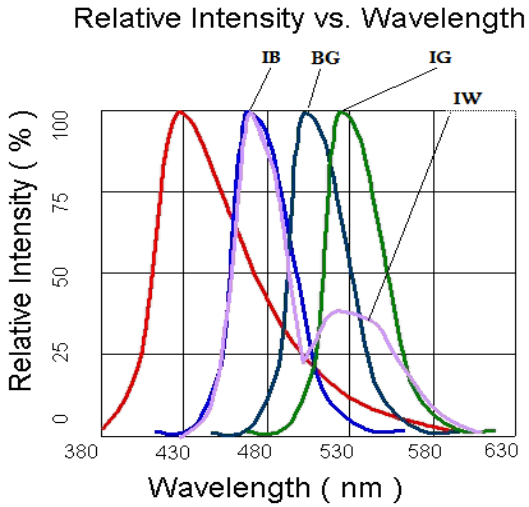


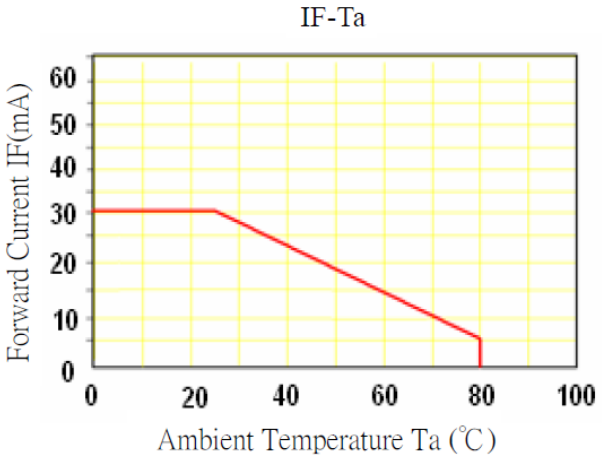


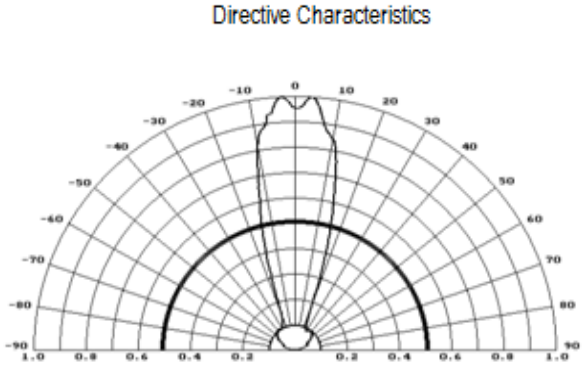


InGaN

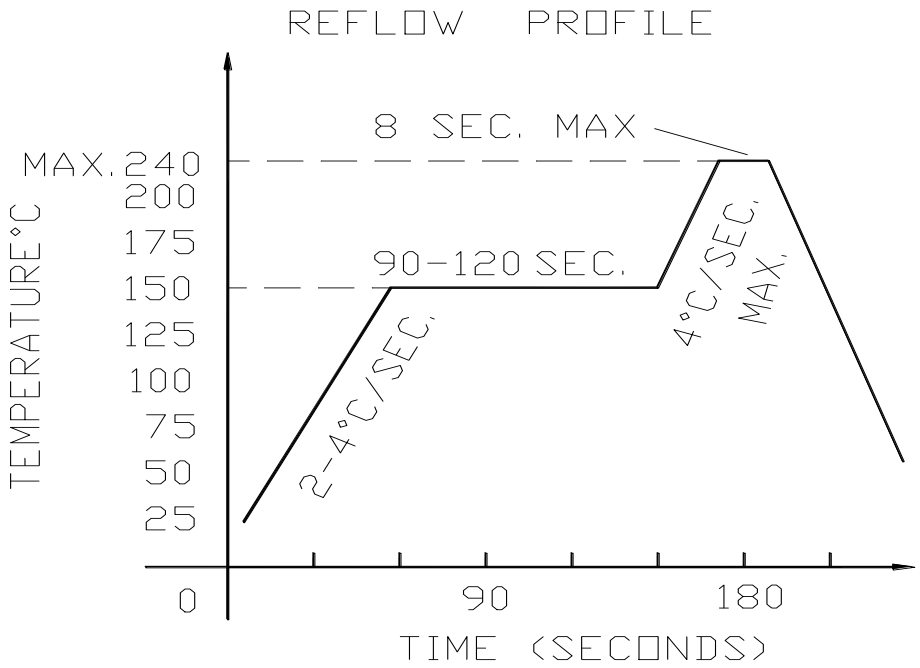

Forward Current vs. Forward Voltage
Forward Voltage (V)
Forward Current (mA)


Relative Intensity vs. Wavelength
IB
BG
IG
IW
Relative Intensity (%)
Wavelength (nm)

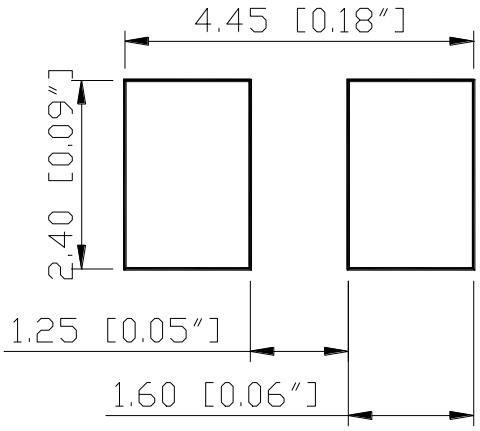

IF-Ta
Forward Current IF(mA)
Ambient Temperature Ta (℃)


Directive Characteristics

Solder Profile & Footprint



Recommended Pad Layout



Units: mm Tolerance: ± 0.2mm

Recommended Handling Precautions

1. It is recommended to store the products in sealed and anti-static bags with desiccant inside at the following condition:
   - Humidity: <60% RH
   - Temperature: 5°C~30°C

2. Shelf life in sealed bag: 12 month at 5°C~30°C and ＜60% R.H

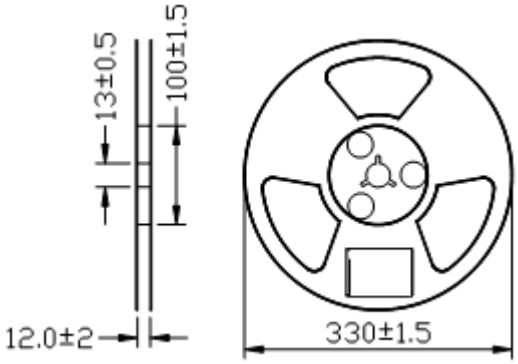
3. After the package is opened:
   3.1 The products should be used within a week (168 hours)
   3.2 Or product should be stored at ≦ 20% RH and (5°C~30°C) with zip-lock sealed bag
   3.3 It is recommended to bake before soldering when the package is unsealed after 72hrs;
   3.3.1 Baking condition (Tape and Reel Type): 60±3°C (24~36 hrs) and < 5% RH
   3.4 Products require baking before soldering/mounting if **3.1** or **3.2** is not met. Baking condition refers to **3.3.1**

4. If the product is not used within 3 months since manufacturing date, it is recommended to bake for 24 hrs @ 60°C before use.

5. If the product is not used after 3 months since manufacturing date, it is recommended to bake for 36~48 hrs @ 60°C before use.

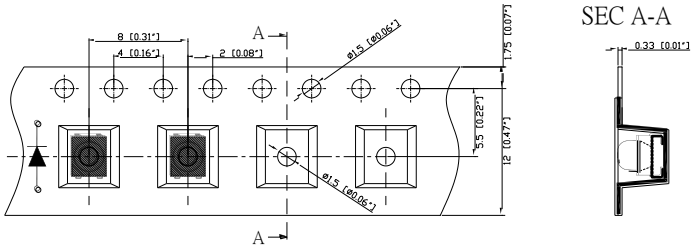
Packing

Reel Dimension:



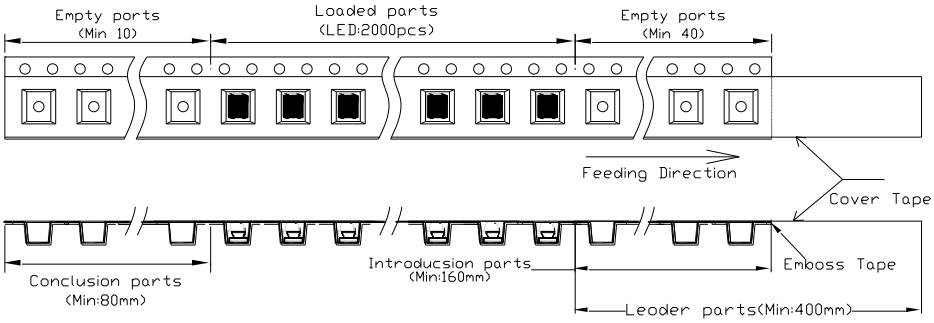
Unit: mm

Tape Dimension:

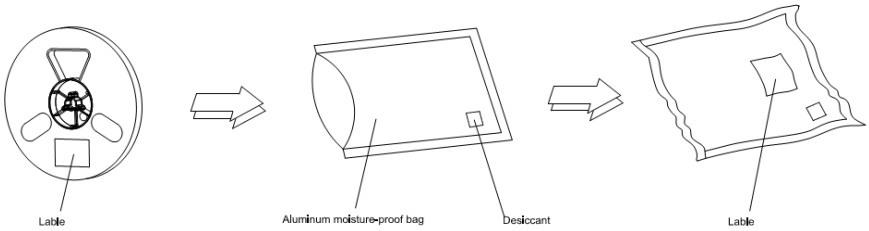


Unit: mm

Arrangement of Tape:



Packaging Specifications:



Labeling

Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per Reel
QBLP670D-R	QBLP670D-R	Iv=3500mcd typ. @ I_F=20mA / λ_D=620nm to 630nm	2,000 units
QBLP670D-S	QBLP670D-S	Iv=900mcd typ. @ I_F=20mA / λ_D=625nm to 635nm	2,000 units
QBLP670D-Y	QBLP670D-Y	Iv=1700mcd typ. @ I_F=20mA / λ_D=585nm to 595nm	2,000 units
QBLP670D-O	QBLP670D-O	Iv=2000mcd typ. @ IF=20mA / λD=600nm to 610nm	2,000 units
QBLP670D-AG	QBLP670D-AG	Iv=400mcd typ. @ I_F=20mA / λ_D=565nm to 576nm	2,000 units
QBLP670D-IG	QBLP670D-IG	Iv=4200mcd typ. @ I_F=20mA / λ_D=520nm to 530nm	2,000 units
QBLP670D-BG	QBLP670D-BG	Iv=3400mcd typ. @ I_F=20mA / λD=500nm to 510nm	2,000 units
QBLP670D-IB	QBLP670D-IB	Iv=900mcd typ. @ I_F=20mA / λ_D=465nm to 475nm	2,000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBLP670D Series	V1.0	02/13/2013
Update spec and drawing	V1.1	03/26/2014
Add yellow green and deep red	V1.2	04/01/2014
Add cyan color	V1.3	09/23/2014
Add orange color	V1.4	01/19/2015

Disclaimer

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QT-BRIGHTEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of QT-BRIGHTEK. 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.