QT-Brightek Chip LED Series

SMD 1205 LED

Part No.: QBLP655R series

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Introduction

Feature:

- Water clear lens (R/AG/Y/O/IG/IB)
- Package in tape and reel
- Ultra bright 1205 package
- InGaN technology for IB/IG/IW
- AlInGaP technology for R/AG/Y/O
- Viewing angle: 140 degrees
- Reverse mount
- ESD Rating: 2kV

Description:

These ultra-bright 655R LEDs have a height profile of 1.10mm. With a combination of high brightness output and small footprint, these LEDs are ideal for keypad backlighting and status indication.

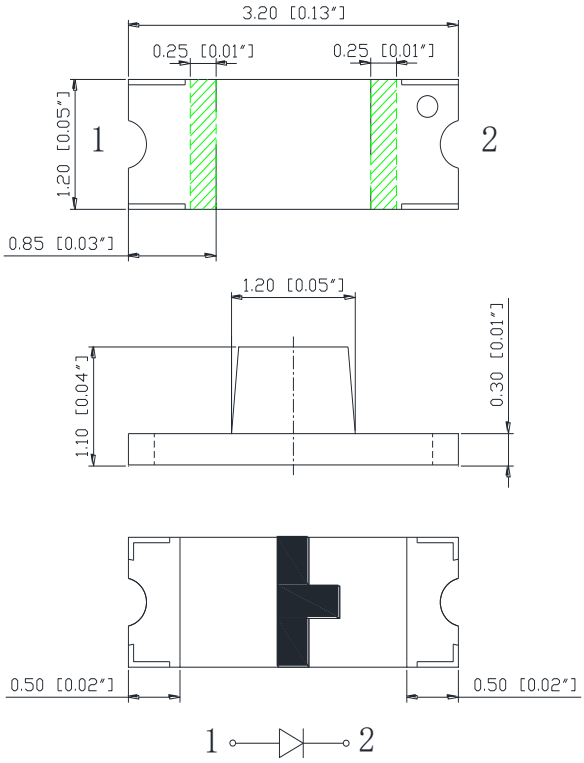
Application:

- Status indication
- Back lighting application

Certification & Compliance:

- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.1mm

Electrical / Optical Characteristic (Ta=25 ^{o}C)

Product	Color	I_F (mA)	V_F (V)		λ_D (nm)			I_V (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP655R-R	Red	20	2.0	2.4	615	625	630	63	100
QBLP655R-Y	Yellow	20	2.0	2.5	585	590	595	40	65
QBLP655R-AG	Yellow Green	20	2.0	2.5	565	570	576	16	25
QBLP655R-O	Orange	20	2.0	2.5	600	605	610	63	100
QBLP655R-IG	True Green	20	3.1	3.7	515	520	525	200	525
QBLP655R-IB	Blue	20	3.1	3.7	465	470	475	32	60
QBLP655R-IW	White	20	3.1	3.7	-	X=0.29 Y=0.28	-	100	180

Absolute Maximum Rating

Material	P_d (mW)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (^{o}C)	T_{ST} (^{o}C)	T_{SOL} (^{o}C)**
AlInGaP (R/AG/Y/O)	75	30	100	5	-40 ~ +85	-40 ~ +100	260
InGaN (IB/IG/IW)	120	30	100	5	-40 ~ +85	-40 ~ +100	260

*Duty 1/10 @ 1KHz
**IR Reflow for no more than 10 sec @ 260 ^{o}C

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
B	16	20	mcd
C	20	25	
D	25	32	
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	
S	800	1000	

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	

Dominant Wavelength λ_D for True Green @ I_F=20mA

Bin	Min.	Max.	Unit
S	515	517.5	nm
T	517.5	520	
U	520	522.5	
V	522.5	525	

Dominant Wavelength λ_D for Red @ I_F=20mA

Bin	Min.	Max.	Unit
s	615	620	nm
t	620	625	
u	625	630	

Dominant Wavelength λ_D for Yellow Green @ I_F=20mA

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

Dominant Wavelength λ_D for Yellow @I_F=20mA

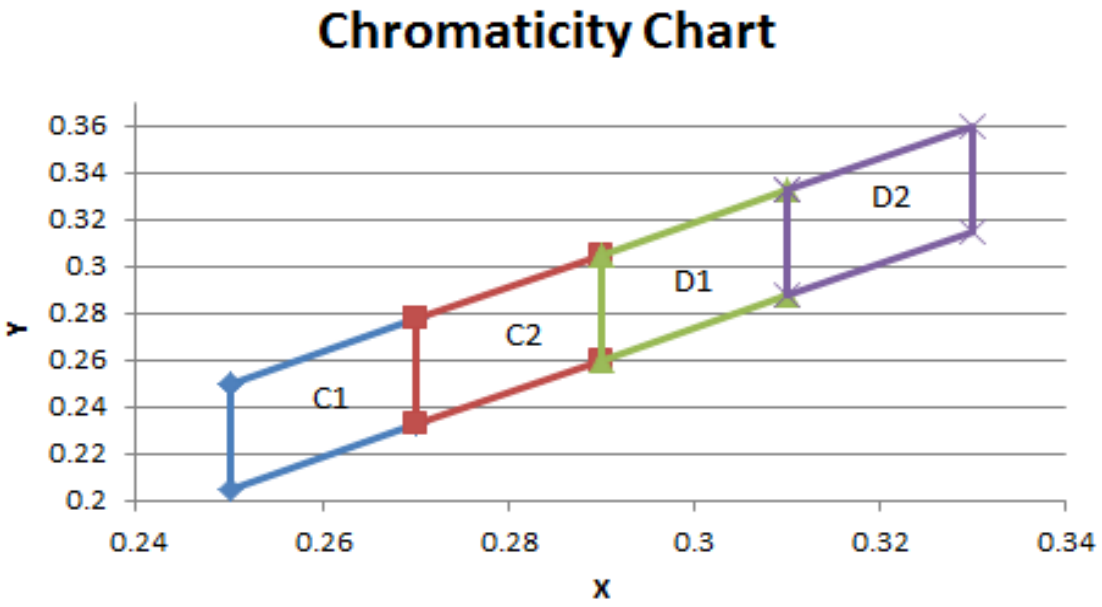
Bin	Min.	Max.	Unit
m	585	590	nm
n	590	595	

Dominant Wavelength λ_D for Orange @I_F=20mA

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

Note:
Tolerance of measurement of forward voltage: ±0.1V
Tolerance of measurement of luminous intensity: ±15%
Tolerance of measurement of dominant wavelength: ±2nm

Chromaticity Coordinates for White

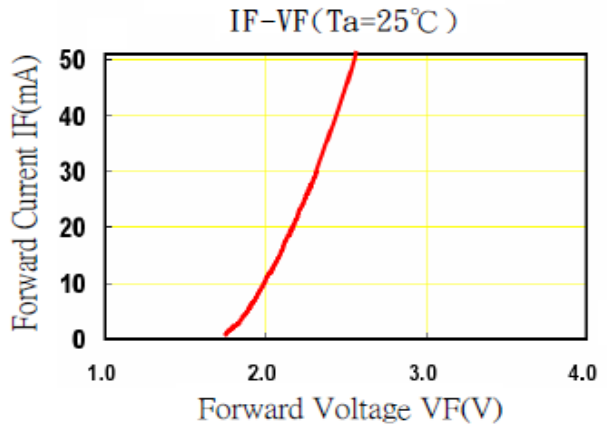


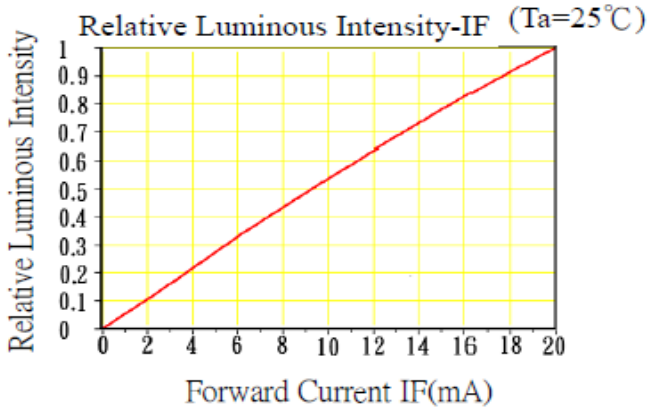
Rank	Chromaticity coordinates				
C1	X	0.2500	0.2700	0.2700	0.2500
	Y	0.2500	0.2775	0.2325	0.2050
C2	X	0.2700	0.2900	0.2900	0.2700
	Y	0.2775	0.3050	0.2600	0.2325
D1	X	0.2900	0.3100	0.3100	0.2900
	Y	0.3050	0.3325	0.2875	0.2600
D2	X	0.3100	0.3300	0.3300	0.3100
	Y	0.3325	0.3600	0.3150	0.2875

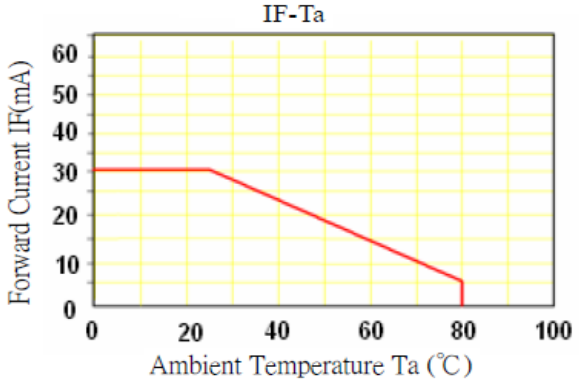
Note:
Tolerance of measurement of color coordinates: ±0.01

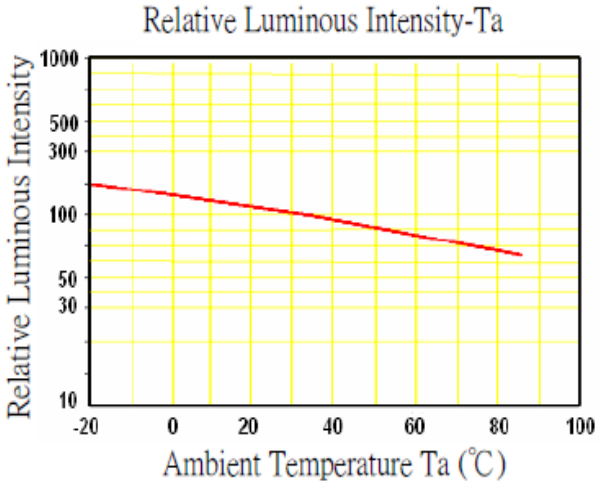
Characteristic Curves

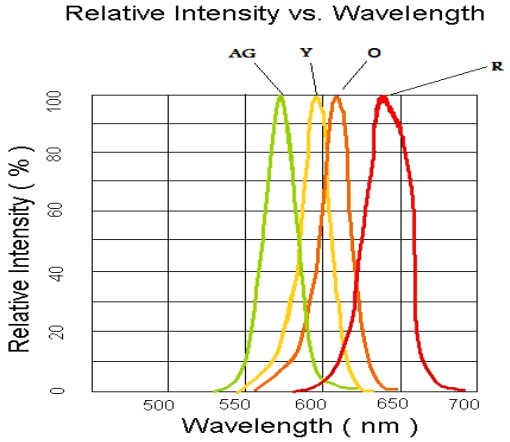
AlInGaP (R/AG/Y/O)

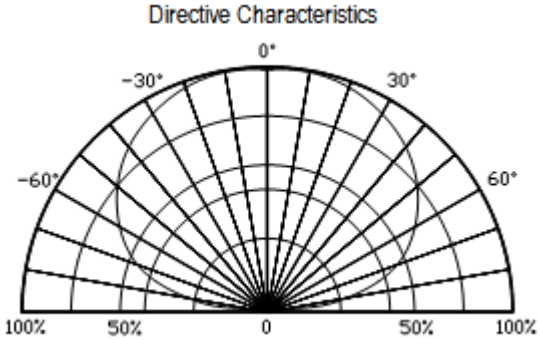




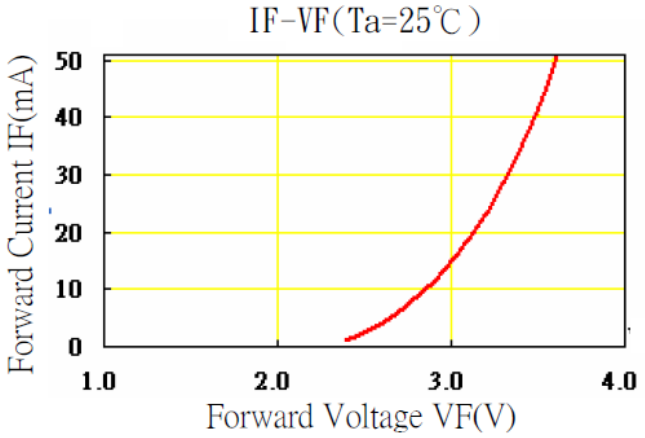


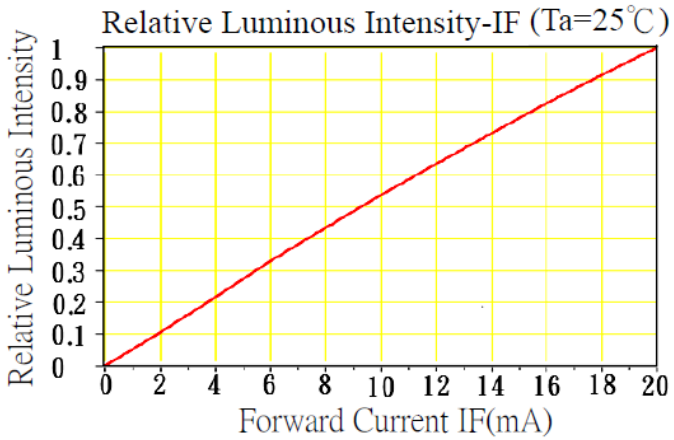


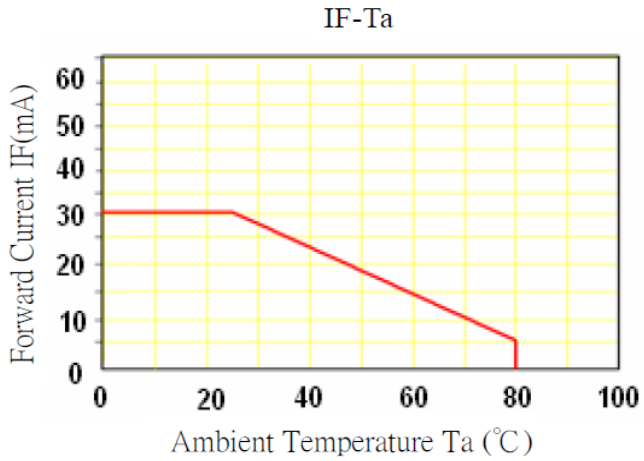


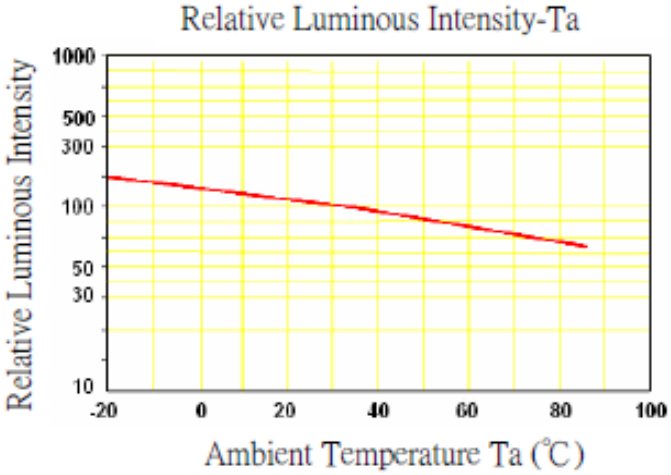


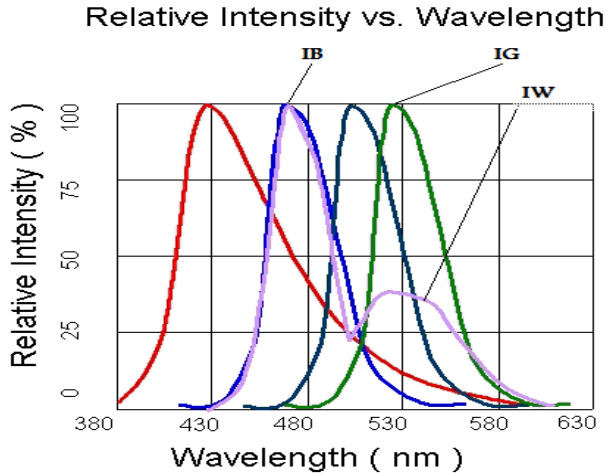
InGaN (IB/IG/IW)

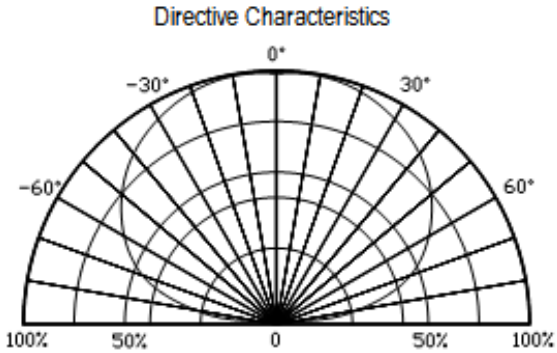






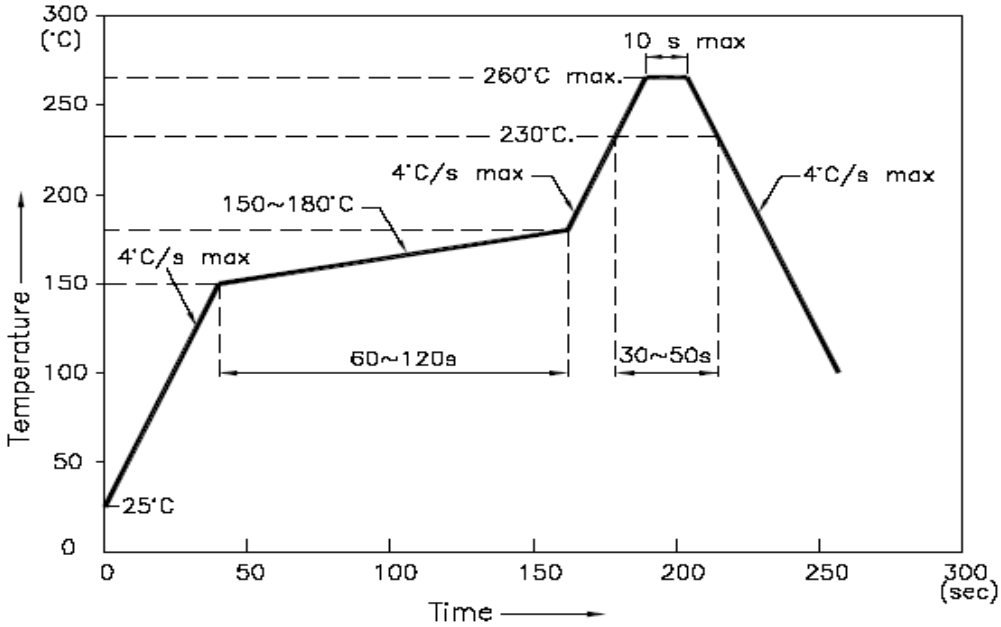




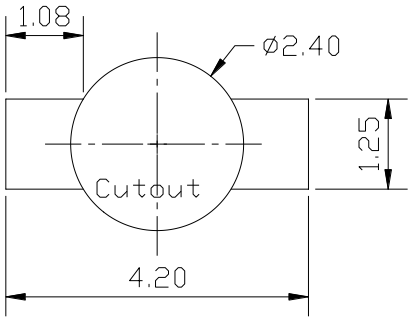


Solder Profile & Footprint

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



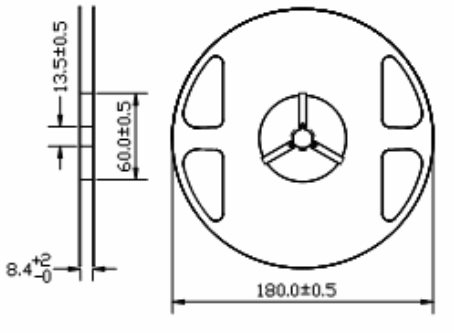
Recommended Pad Layout



Units: mm

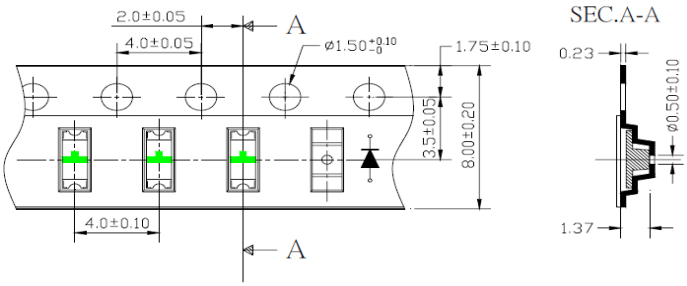
Packing

Reel Dimension:



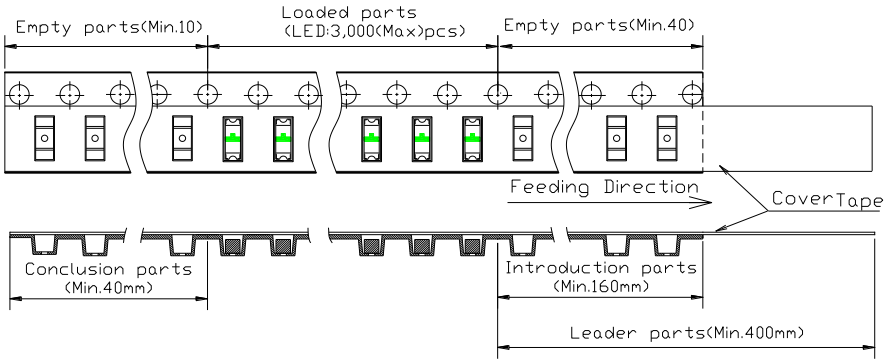
Unit: mm

Tape Dimension:

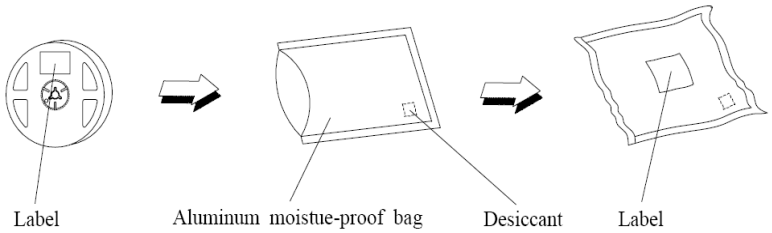


Unit: mm

Arrangement of Tape:



Packaging Specifications:



Labeling

Ordering Information

Orderable Part #	Spec Range	Quantity per reel
QBLP655R-R	Iv=100mcd typ. @ 20mA / λ_D=615-630nm	3,000 units
QBLP655R-Y	Iv=65mcd typ. @ 20mA / λ_D=585-595nm	3,000 units
QBLP655R-AG	Iv=25mcd typ. @ 20mA / λ_D=565-576nm	3,000 units
QBLP655R-O	Iv=100mcd typ. @ 20mA / λ_D=600-610nm	3,000 units
QBLP655R-IG	Iv=525mcd typ. @ 20mA / λ_D=515-525nm	3,000 units
QBLP655R-IB	Iv=60mcd typ. @ 20mA / λ_D=465-475nm	3,000 units
QBLP655R-IW	Iv=180mcd typ. @ 20mA / CCT Coordinate: (X=0.29, Y=0.28) typ.	3,000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBLP655R_series	V1.0	01/13/2012
Update to new format	V1.1	06/05/2012
Minor format update / Update IG (True Green) brightness bin	V1.2	10/14/2015
Update dimension drawing to reflect the new PCB	V2.0	11/21/2016
Update ESD Rating	V2.1	11/20/2023

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.