QT-Brightek Chip LED Series

SMD 1205 Bi-Color LED

Part No.: QBLP655-RIG

R: Red
IG: True Green

Table of Contents:

Introduction

Feature:

- Clear lens
- Package in tape and reel
- Ultra bright 1205 package
- InGaN technology for IG
- AlInGaP technology for R
- Viewing angle: 140 degrees
- Top Mountable

Description:

These ultra-bright 655 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.

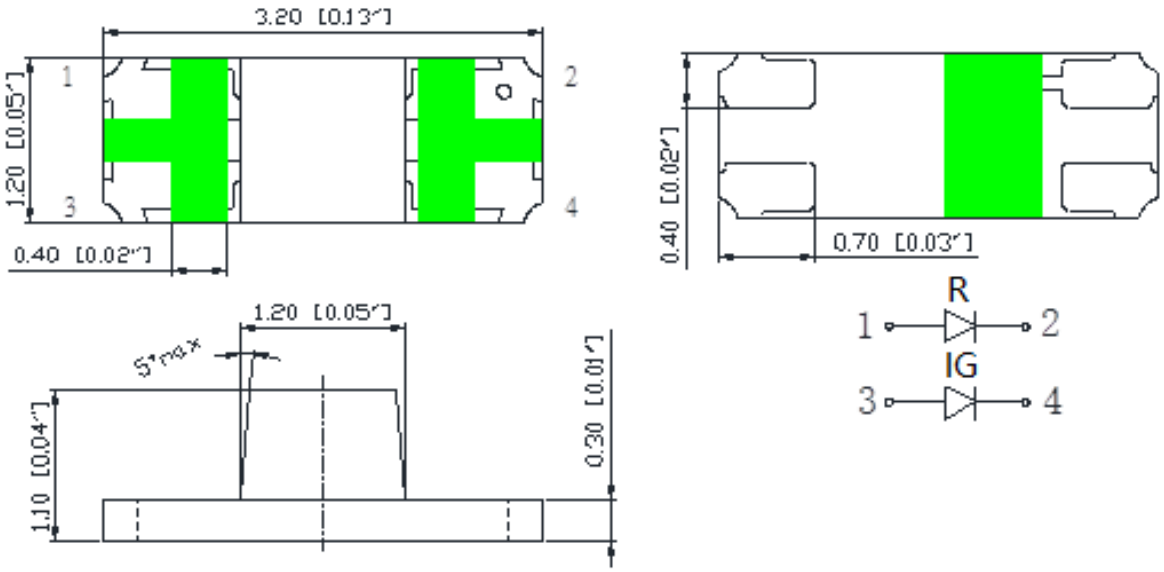
Application:

- Status indication
- Back lighting application

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.1mm

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.
QBLP655-RIG	Red	20	2.0	2.5	615	623	630	50	90
	True Green	20	3.1	3.7	515	520	525	250	450

Absolute Maximum Rating

Material	P_d (mW)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)	T_{SOL} (°C)**
AlInGaP (R/AG/Y/O)	75	30	125	5	-40 ~ +85	-40 ~ +100	260
InGaN (IB/IG/IW)	120	30	125	5	-40 ~ +85	-40 ~ +100	260

*Duty 1/8 @ 1kHz
**IR Reflow for no more than 10 sec @ 260 °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
G	50	63	mcd
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 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	

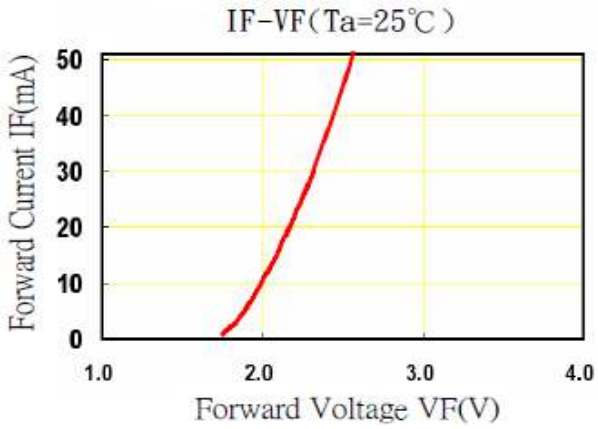
Dominant Wavelength λ_D for Red @ I_F=20mA

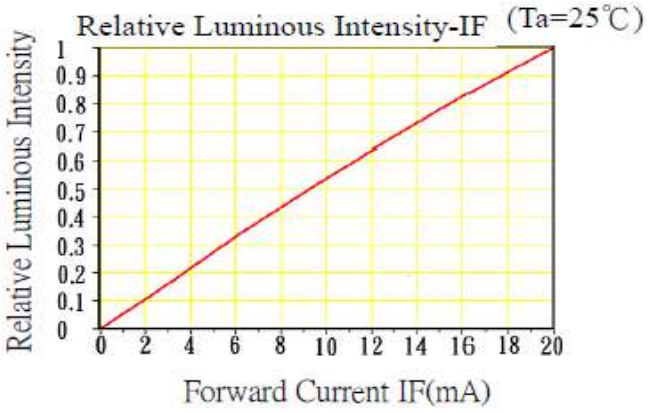
Bin	Min.	Max.	Unit
s	615	620	nm
t	620	625	
u	625	630	

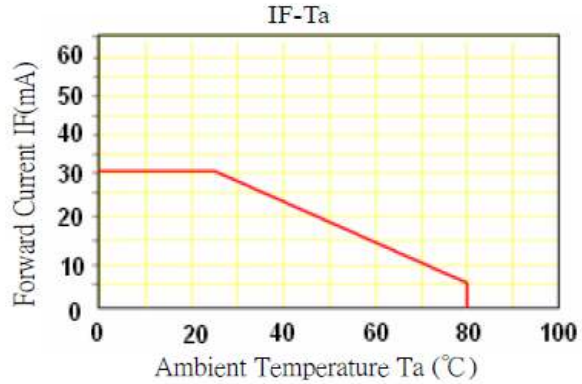
Note:
Tolerance of measurement of forward voltage: ±0.1V
Tolerance of measurement of luminous intensity: ±15%
Tolerance of measurement of dominant wavelength: ±2nm

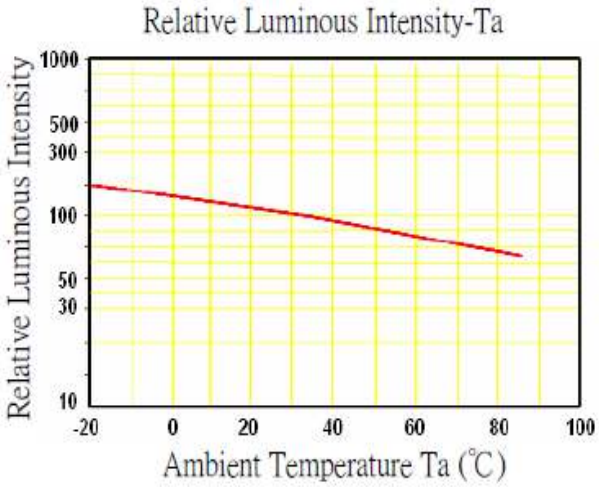
Characteristic Curves

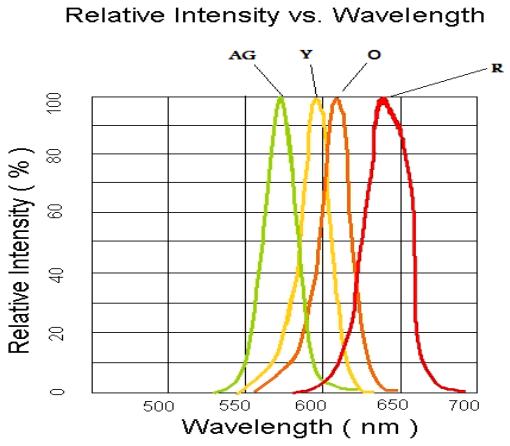
AlInGaP (R)

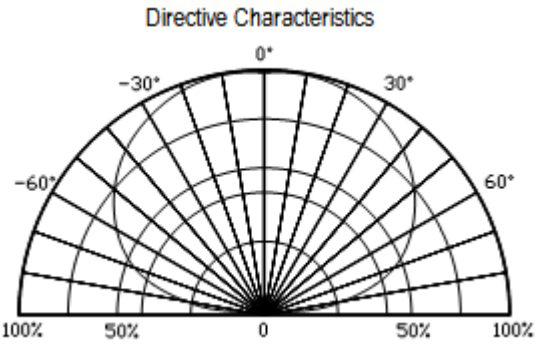




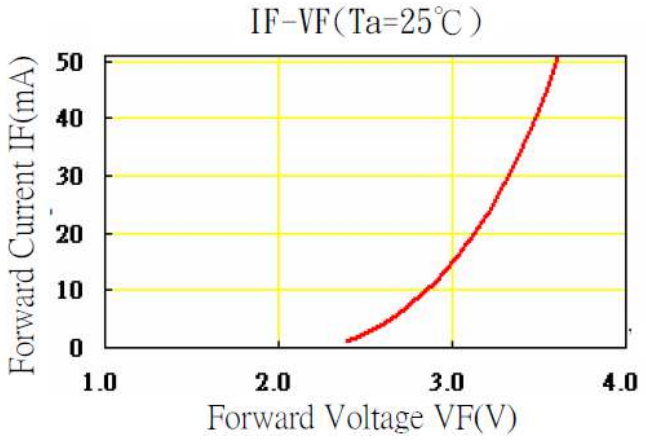


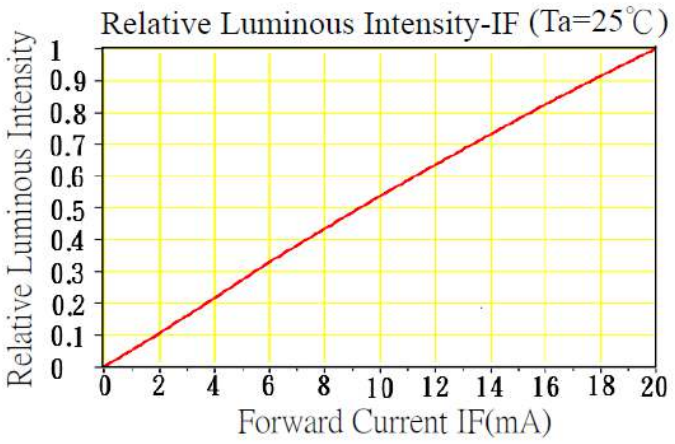


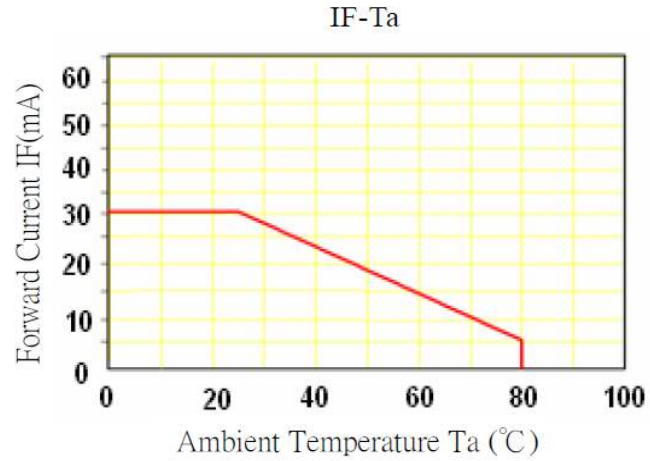


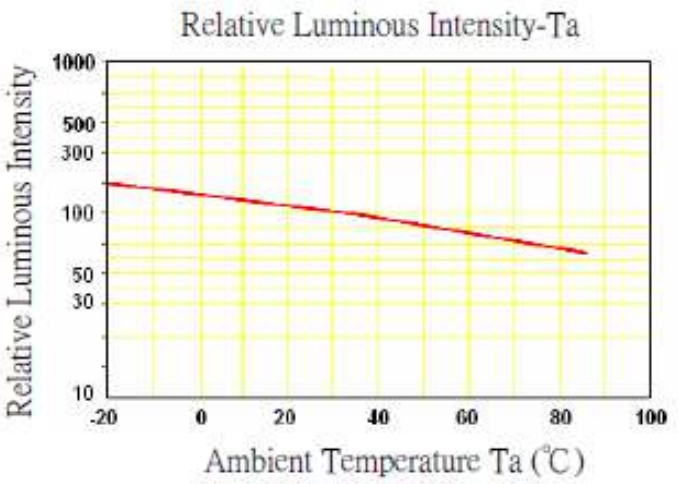


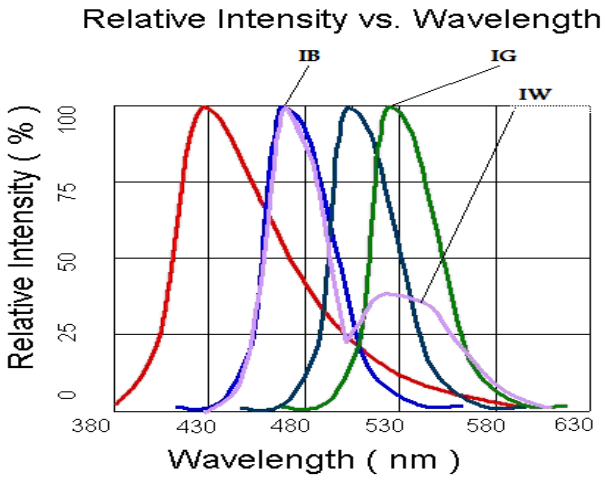
InGaN (IG)

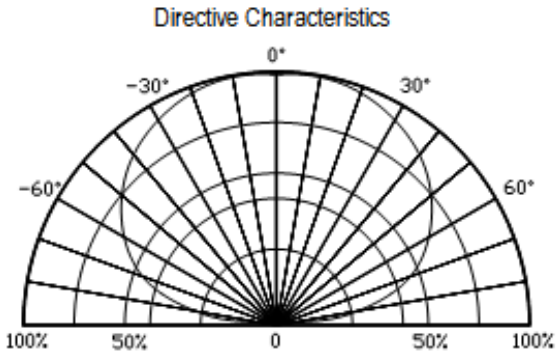

IF-VF(Ta=25℃)
Forward Current IF(mA)
50
40
30
20
10
0
1.0
2.0
3.0
4.0
Forward Voltage VF(V)


Relative Luminous Intensity-IF (Ta=25℃)
Relative Luminous Intensity
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0 2 4 6 8 10 12 14 16 18 20
Forward Current IF(mA)


IF-Ta
Forward Current IF(mA)
60
50
40
30
20
10
0
0 20 40 60 80 100
Ambient Temperature Ta (℃)

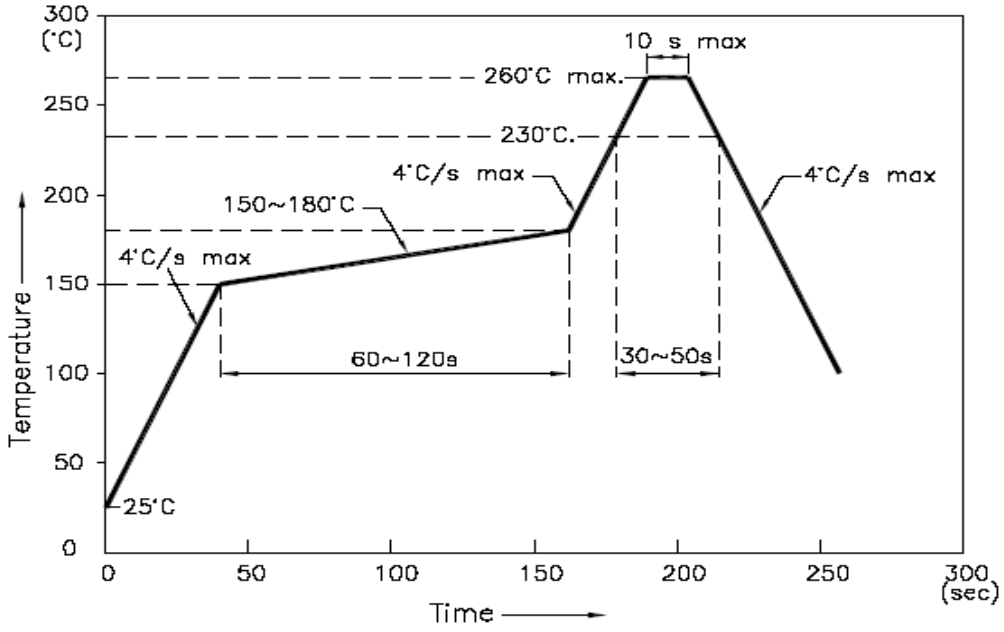

Relative Luminous Intensity-Ta
Relative Luminous Intensity
1000
500
300
100
50
30
10
-20 0 20 40 60 80 100
Ambient Temperature Ta (℃)


Relative Intensity vs. Wavelength
IB
IG
IW
Relative Intensity (%)
100
75
50
25
0
380 430 480 530 580 630
Wavelength (nm)

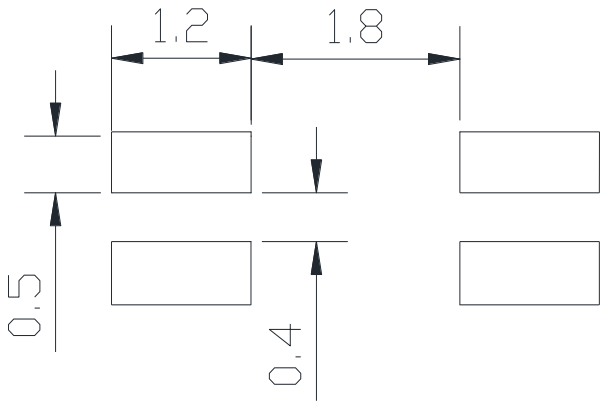

Directive Characteristics
0°
-30°
30°
-60°
60°
100% 50% 0 50% 100%

Solder Profile & Footprint

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



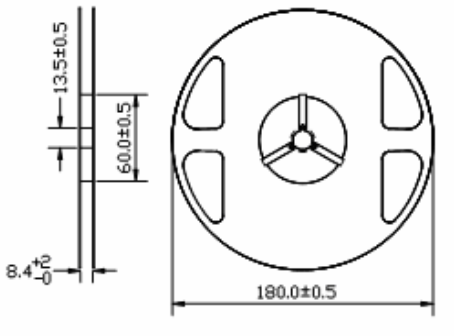
Recommended Pad Layout



Units: mm	tolerance: +/- 0.1mm

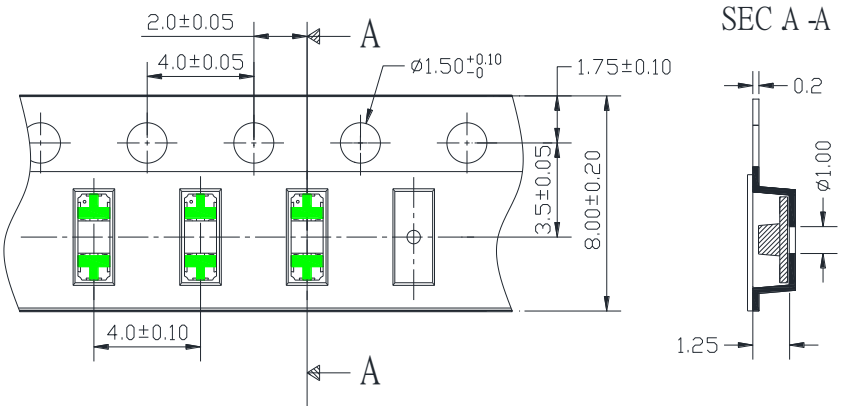
Packing

Reel Dimension:



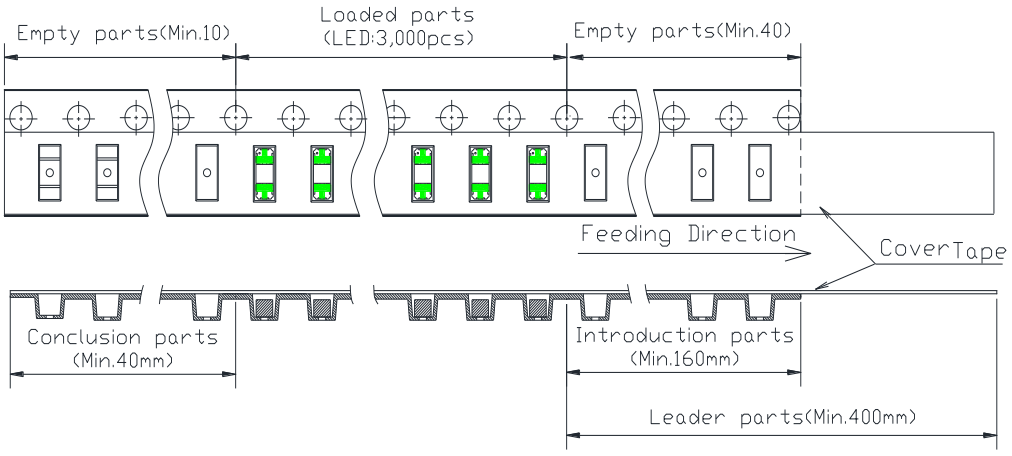
Unit: mm

Tape Dimension:

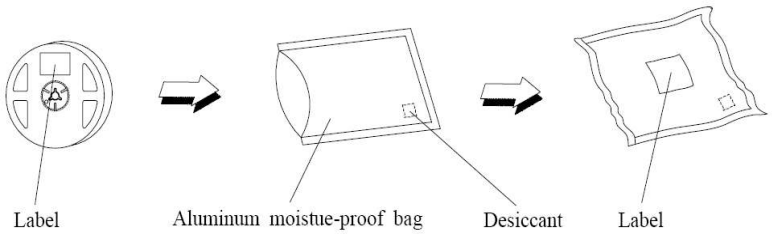


Unit: mm

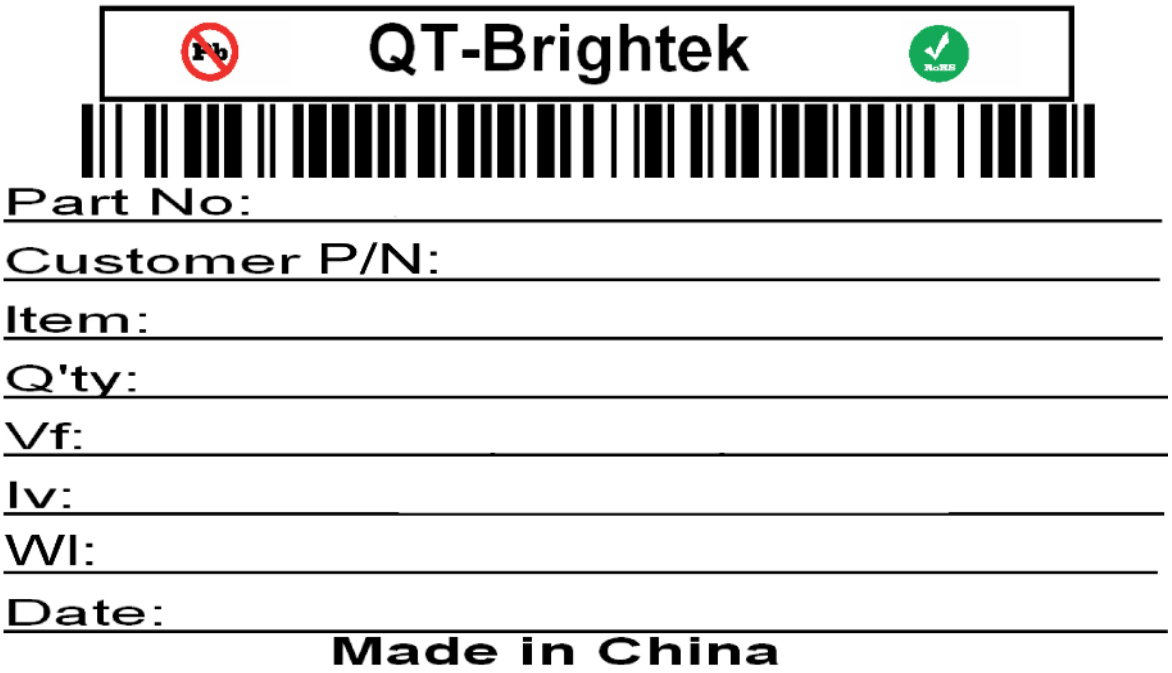
Arrangement of Tape:



Packaging Specifications:



Labeling



Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP655-RIG	QBLP655-RIG	Iv=90mcd typ. @ 20mA / λ_D=615-630nm Iv=450mcd typ. @ 20mA / λ_D=515-525nm	3,000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBLP655-RIG	V1.0	06/23/2017

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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.