QT-Brightek Chip LED Series

4-SMD RYG Tri Color LED

Part No.: QBLP600-RYG

Table of Contents:

Introduction

Feature:

- Water clear lens
- Package in tape and reel
- Ultra bright 0606 LED package
- Common anode
- InGaN technology for G
- AlInGaP technology for R/Y
- Viewing angle: 140 deg typ.

Description:

These ultra bright 0606 RGB LEDs have a height profile of 0.80mm. Combination of high brightness output and small footprint, these LEDs are ideal for keypad backlighting, status indication, and color mixing applications.

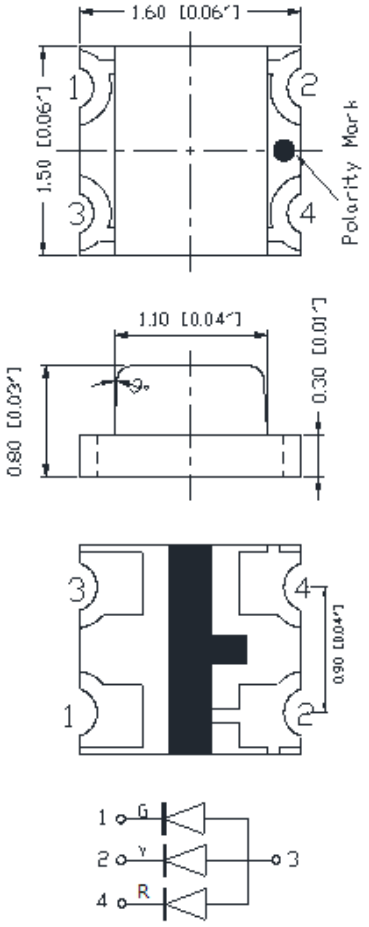
Application:

- Status indication
- Back lighting application

Certification & Compliance:

- 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)			λ_P (nm)	I_V (mcd)		
			Typ.	Max	Min	Typ.	Max	Typ.	Min	Typ.	Max.
QBLP600-RYG	Red	20	2.0	2.5	615	622	630	630	80	150	250
	Yellow	20	2.0	2.5	585	590	595	590	80	160	250
	Green	20	3.2	3.7	515	520	525	518	250	450	800

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/Y)	75	30	125	5	-40 ~ + 80	-40 ~ +85	260
InGaN (G)	111	30	125	5	-40 ~ + 80	-40 ~ +85	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
I	80	100	mcd
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 Red @ I_F=20mA

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

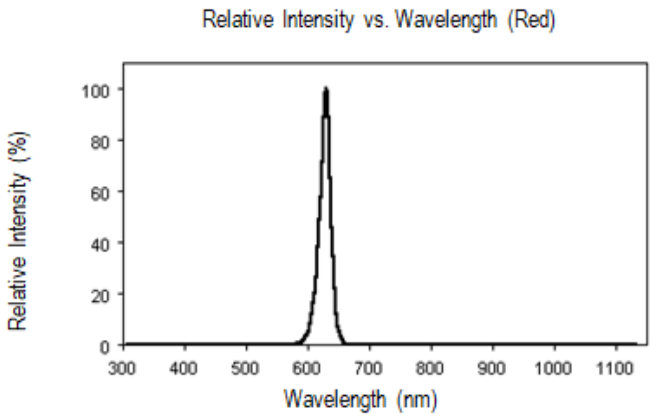
Dominant Wavelength λ_D for Yellow @ I_F=20mA

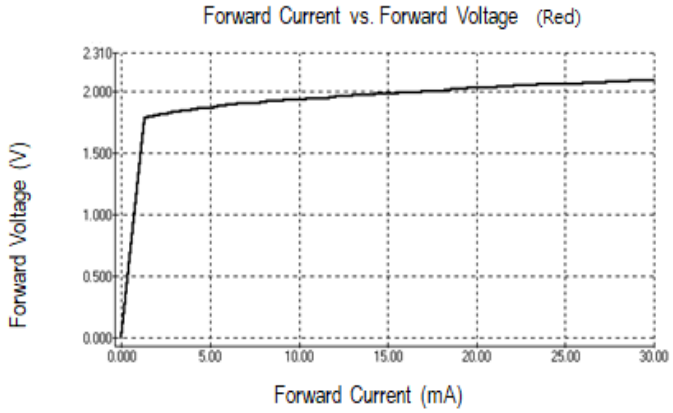
Bin	Min.	Max.	Unit
m	585	590	nm
n	590	595	

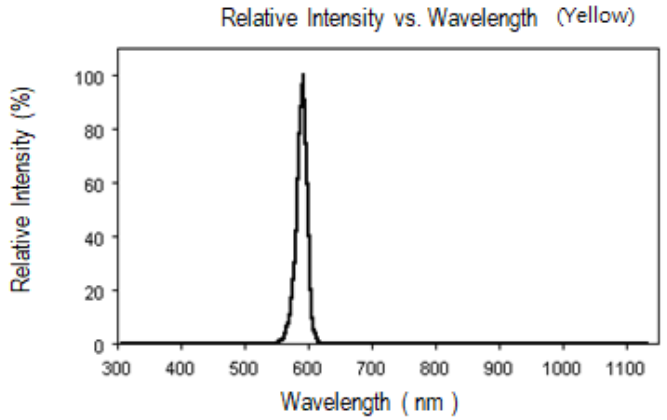
Dominant Wavelength λ_D for Green @ I_F=20mA

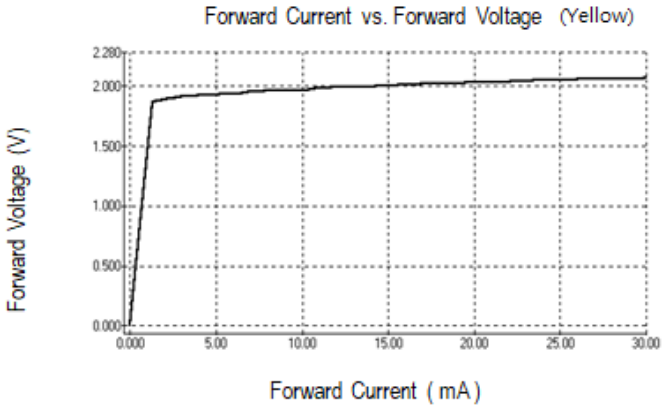
Bin	Min.	Max.	Unit
A	515	520	nm
B	520	525	

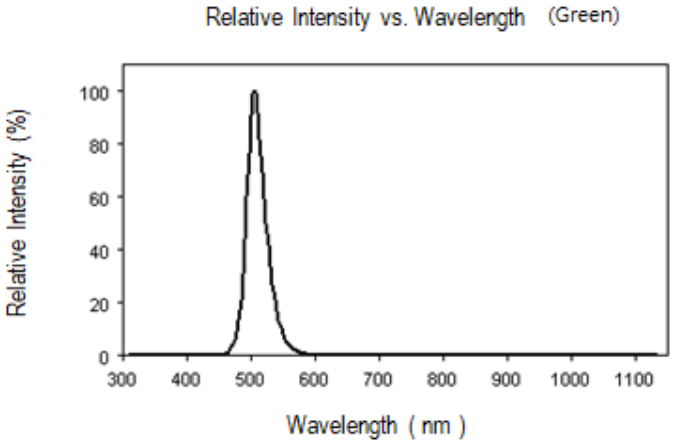
Characteristic Curves

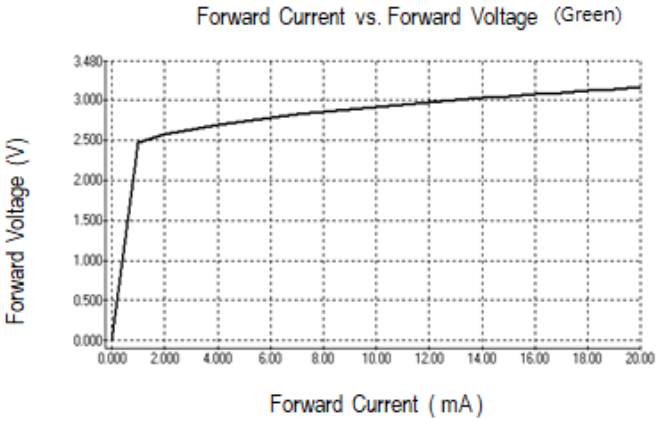




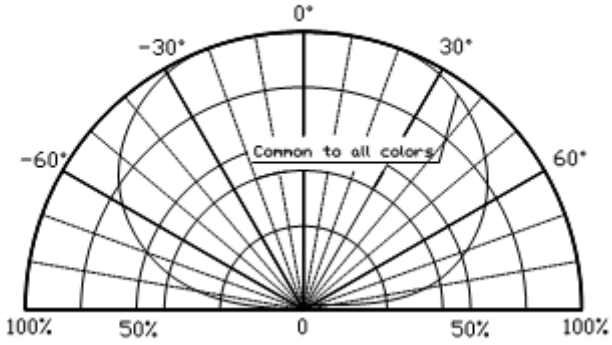






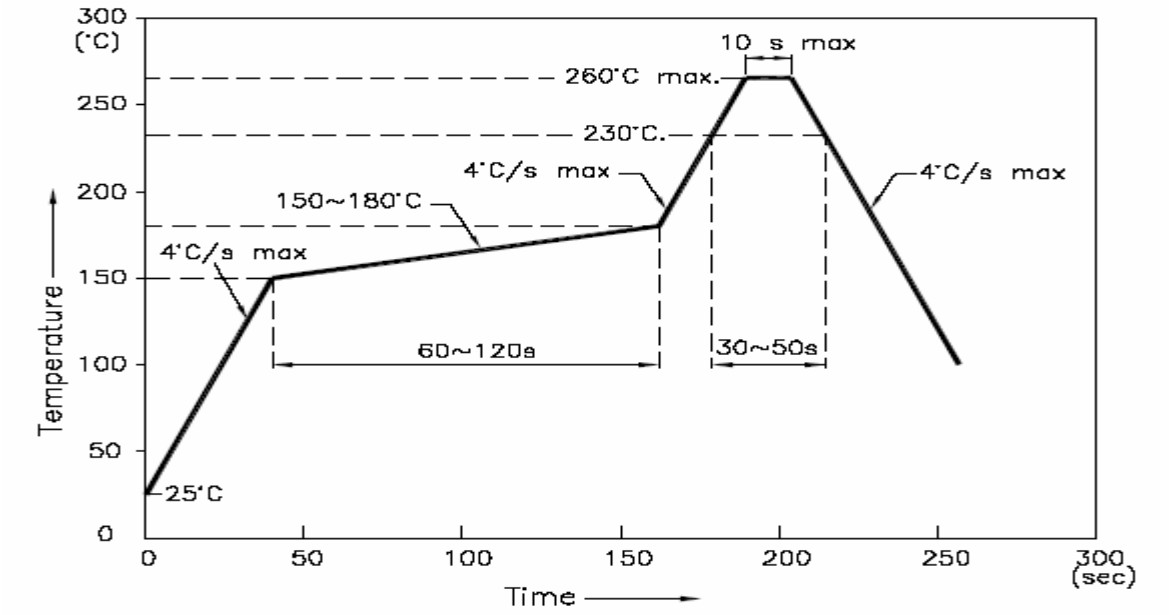


Directive Characteristics

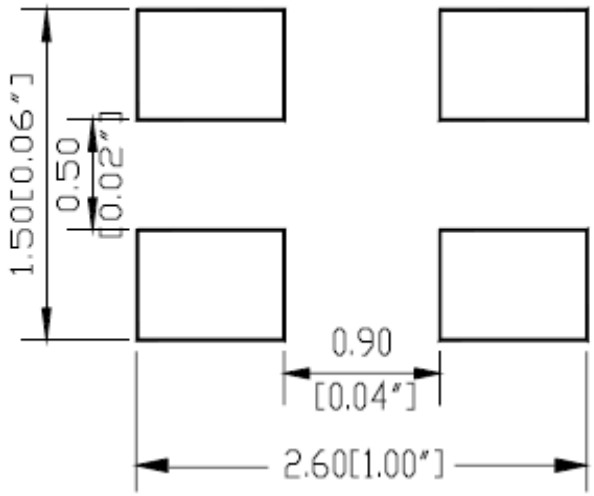


Solder Profile & Footprint

-Recommended tin solder specifications: melting temperature in the range of 178~192 °C
-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



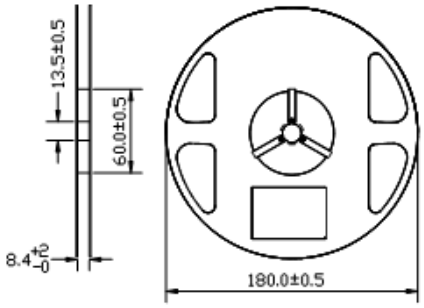
Recommended Pad Layout



Units: mm

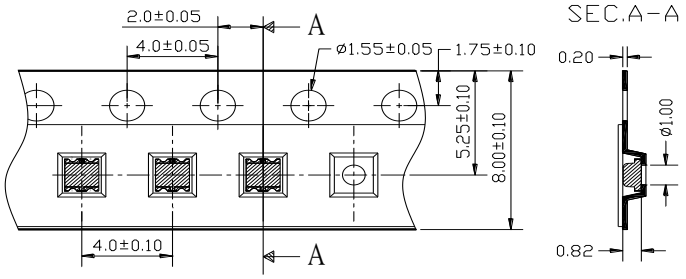
Packing

Reel Dimension:



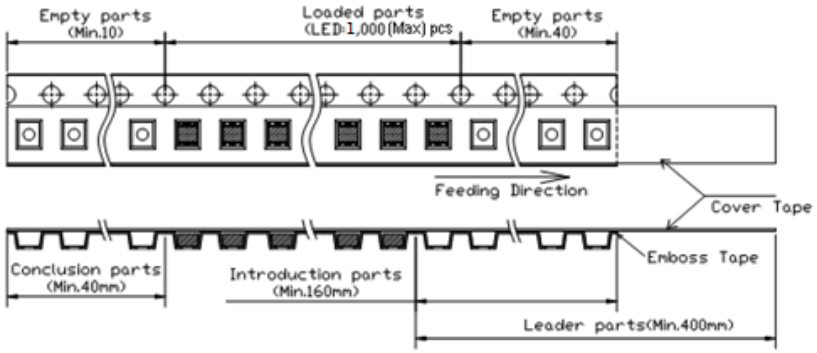
Unit: mm

Tape Dimension:

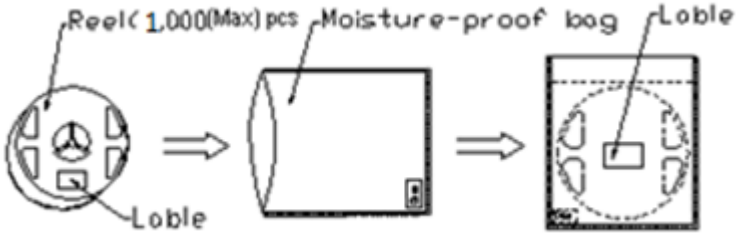


Unit: mm

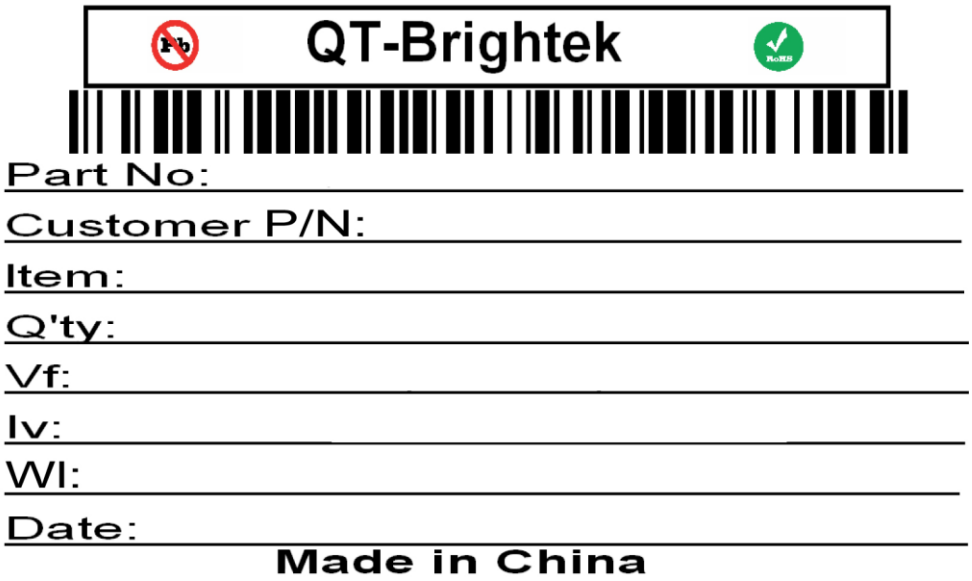
Arrangement of Tape:



Packaging Specification:



Labeling



Ordering Information

Orderable Part #	Spec Range	Quantity per reel
QBLP600-RYG	Red: Iv=150mcd typ. @ I_F=20mA, λ_D=615nm to 630nm	1,000 units
	Yellow: Iv=160mcd typ. @ I_F=20mA, λ_D=585nm to 595nm	
	Green: Iv=450mcd typ. @ I_F=20mA, λ_D=515nm to 525nm	

Revision History

Description:	Revision #	Revision Date
New Release of QBLP600-RYG	V1.0	11/30/2022
Update typical brightness for Y	V1.1	12/06/2022

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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.