

QT-Brightek Chip LED Series**SMD 0404 RGB LED****Part No.: QBLP599-RGB**



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Introduction

Feature:

- Clear lens
- Package in tape and reel
- Ultra bright 0404 LED package
- Common Anode
- InGaN technology for IB/IG
- AlInGaP technology for R

Description:

These ultra bright 0404 RGB LEDs have a height profile of 0.30mm. Combination of high brightness output and small footprint, these LEDs are ideal for keypad backlighting, status indication, and color mixing applications.

Application:

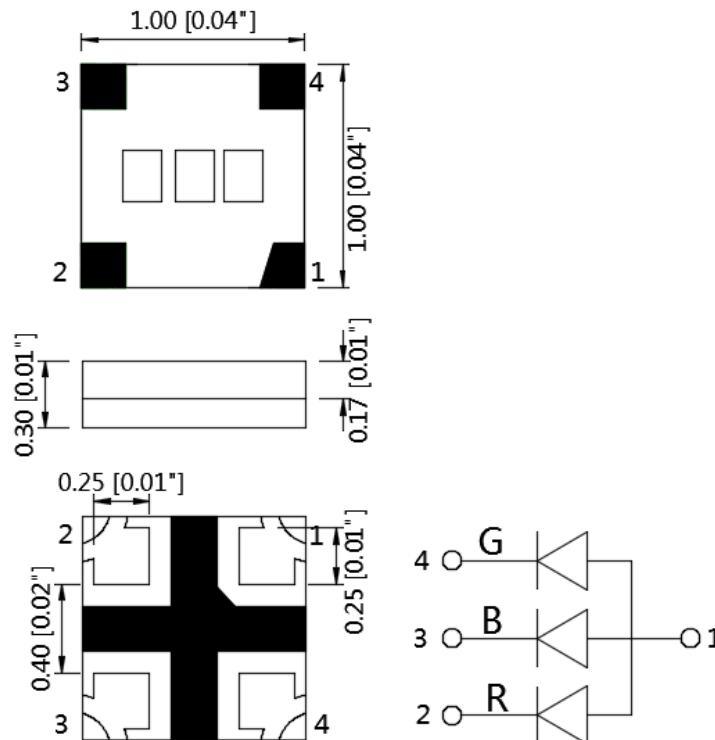
- Status indication
- Back lighting application

Certification & Compliance:

- 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.	Max.
QBLP599-RGB	Red	2	2.0	2.3	620	620	630	25	40	63
	True Green	2	2.4	2.8	532.5	535	540	50	80	125
	Blue	2	2.4	2.8	465	470	472.5	16	25	32

Absolute Maximum Rating

Material	P _d (mW)	I _F (mA)	I _{FP} (mA)*	V _R (V)	T _{OP} (°C)	T _{ST} (°C)	T _{SO L} (°C)**
InGaN (IB/IG)	46	20	50	5	-40 ~ + 80	-40 ~ +85	260
AllnGaP (R)	56	20	50	5	-40 ~ + 80	-40 ~ +85	260

*1/8 duty, f=1kHz

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

Forward Voltage V_F for AllnGaP @ I_F=2mA

Bin	Min.	Max.	Unit
□	1.7	2.3	V

Forward Voltage V_F for InGaN @ I_F=2mA

Bin	Min.	Max.	Unit
d	2.2	2.5	V
e	2.5	2.8	

Luminous Intensity I_V for Red (R) @ I_F=2mA

Bin	Min.	Max.	Unit
D	25	32	mcd
E	32	40	
F	40	50	
G	50	63	

Luminous Intensity I_V for True Green (IG) @ I_F=2mA

Bin	Min.	Max.	Unit
G	50	63	mcd
H	63	80	
I	80	100	
J	100	125	

Luminous Intensity I_V for Blue (IB) @ $I_F=2mA$

Bin	Min.	Max.	Unit
B	16	20	mcd
C	20	25	
D	25	32	

Dominant Wavelength λ_D for Red (R) @ $I_F=2mA$

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

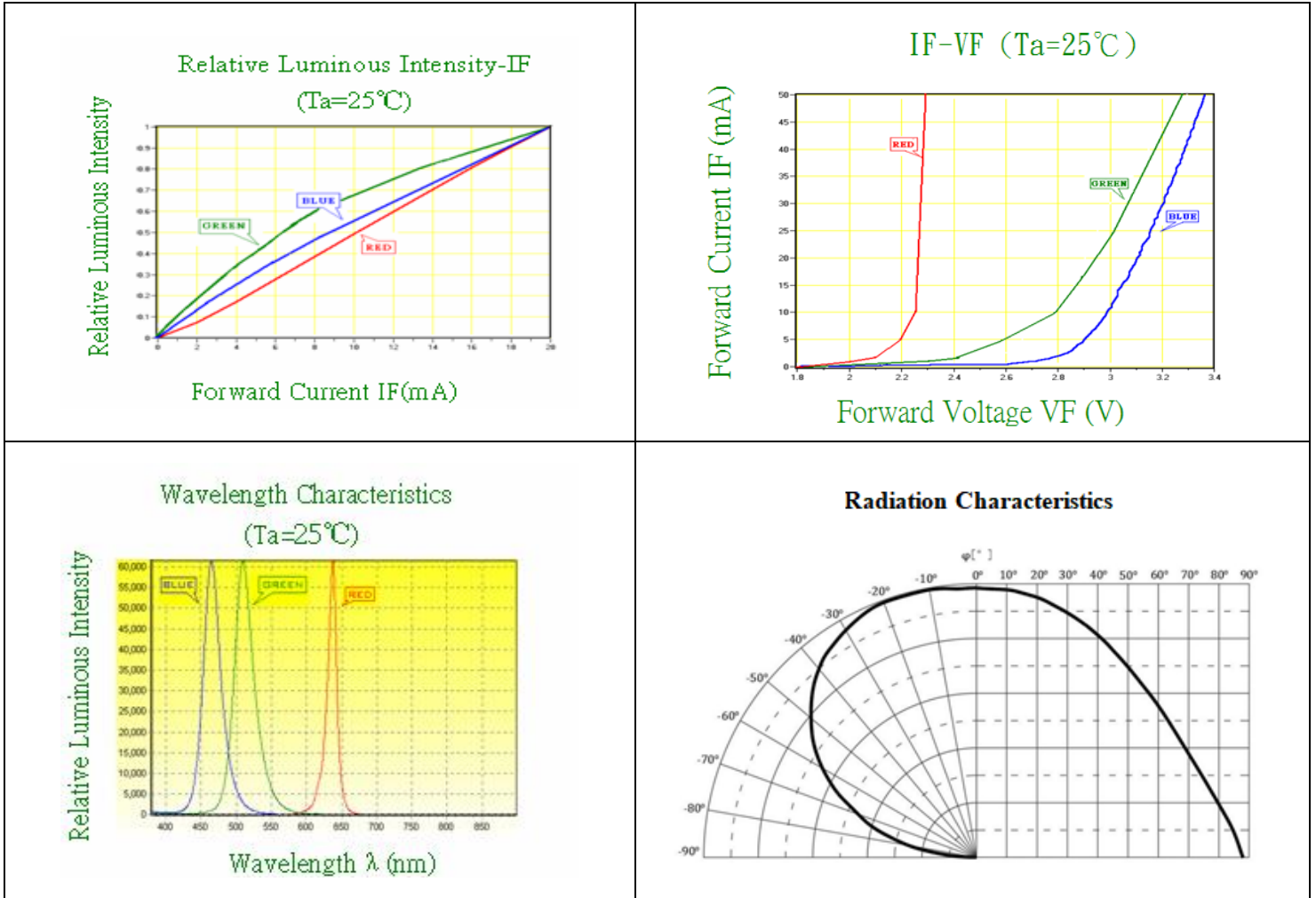
Dominant Wavelength λ_D for Green (IG) @ $I_F=2mA$

Bin	Min.	Max.	Unit
Z	532.5	535	nm
a	535.0	537.5	
b	537.5	540	

Dominant Wavelength λ_D for Blue (IB) @ $I_F=2mA$

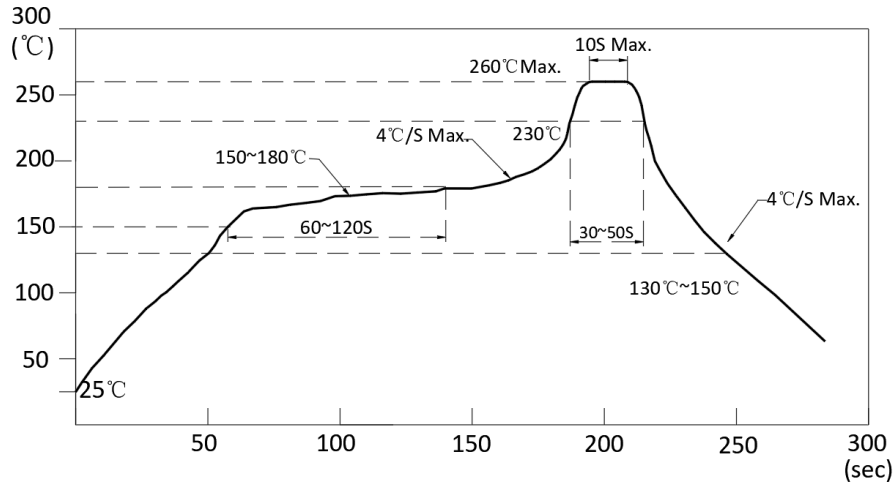
Bin	Min.	Max.	Unit
G	465	467.5	nm
H	467.5	470	
I	470	472.5	

Characteristic Curves

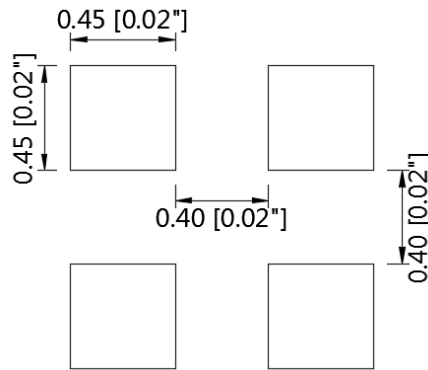


Solder Profile & Footprint

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



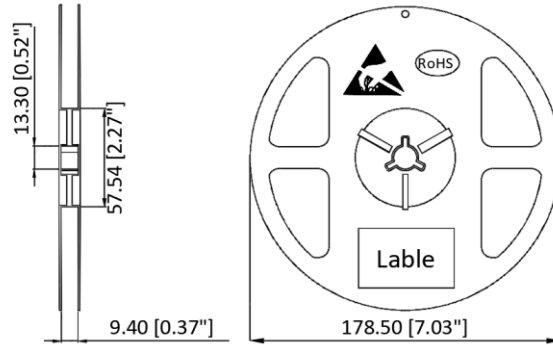
Recommended Pad Layout



Units: mm

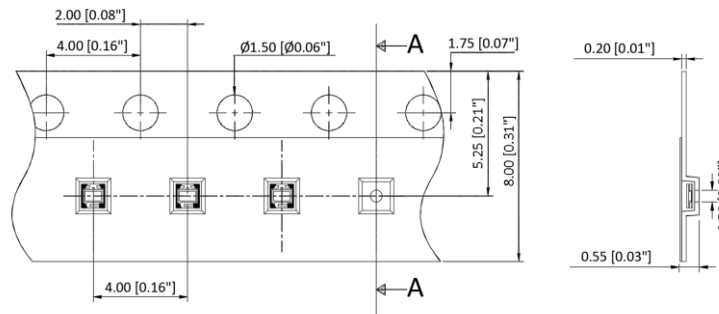
Packing

Reel Dimension:



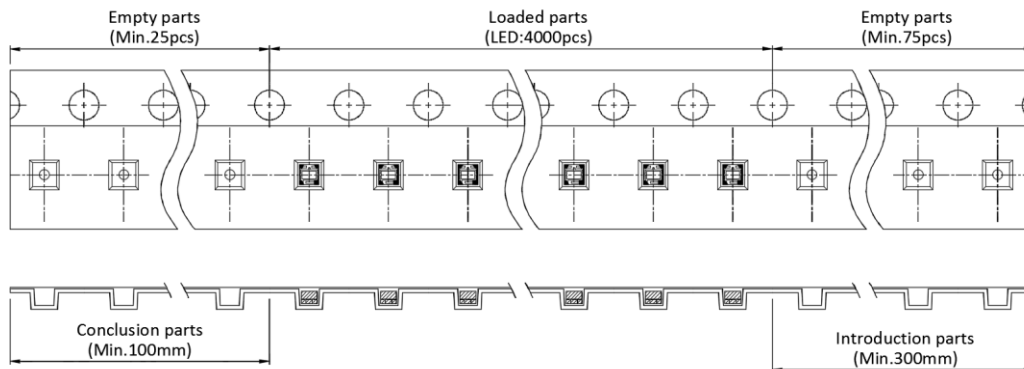
Unit: mm

Tape Dimension:



Unit: mm

Arrangement of Tape:



Unit: mm

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
QBLP599-RGB	QBLP599-RGB	Red: $I_v=40\text{mcd typ. @ } I_F=2\text{mA}$, $\lambda_D=620\text{nm to } 630\text{nm}$	4,000 units
		True Green: $I_v=80\text{mcd typ. @ } I_F=2\text{mA}$, $\lambda_D=532.5 \text{ to } 540\text{nm}$	
		Blue: $I_v=25\text{mcd typ. @ } I_F=2\text{mA}$, $\lambda_D=465 \text{ to } 472.5\text{nm}$	



Revision History

Description:	Revision #	Revision Date
New Release of QBLP599-RGB	V1.0	08/04/2020

Disclaimer

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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.