

QT-Brightek Chip LED Series

SMD 0603 BI-Color LED

Part No.: QBLP601-IR1SW

**IR1: 940nm
SW: White (CCT 2700K)**

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Introduction

Feature:

- Yellow Diffused Lens
- Package in tape and reel
- Bi Color: IR 940nm + soft white
- AlGaAs technology for IR
- InGaN technology for soft white
- Viewing angle: 140° typ.

Description:

These ultra bright 0603 LEDs have a height profile of 0.55mm. Combination of high brightness output and small footprint, these LEDs are ideal for dual color tight space application.

Application:

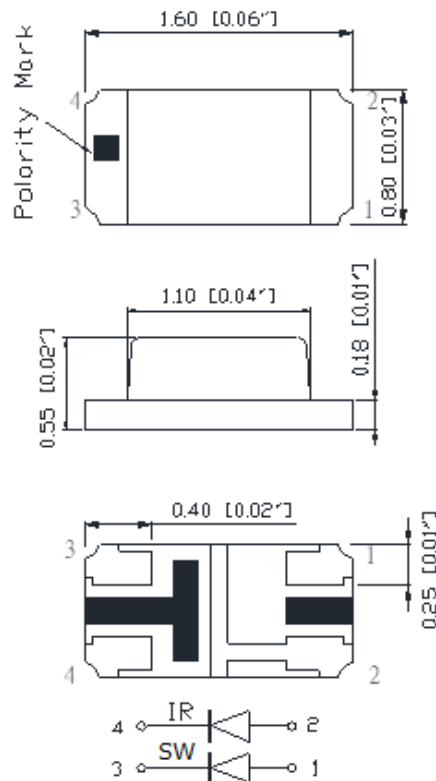
- Status indication
- Back lighting application
- Sensor

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)			I _E (mW/sr)		
			Typ.	Max	Min.	Typ.	Max.	Min.	Typ.	Max.
QBLP601-IR1SW	IR	20	1.2	1.6	930	940	950	0.2	0.6	1.1
					CIE Coordinate					
	White	20	3.0	3.7	-	X=0.46 Y=0.42 CCT: 2700K	-	200	340	630

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)***
AlGaAs	80	50	800*	5	-40 ~ +80	-40 ~ +85	260
InGaN	111	30	125**	5	-40 ~ +80	-40 ~ +85	260

*Pulse width 100μs, duty cycle=1%

**1/8 duty, f=1kHz

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

Forward Voltage V_F for AlGaAs @ I_F=20mA

Bin	Min.	Max.	Unit
□	0.8	1.6	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	

Radiant Intensity I_E for IR @ $I_F=20mA$

Bin	Min.	Max.	Unit
A	0.2	0.6	mW/sr
B	0.6	1.1	

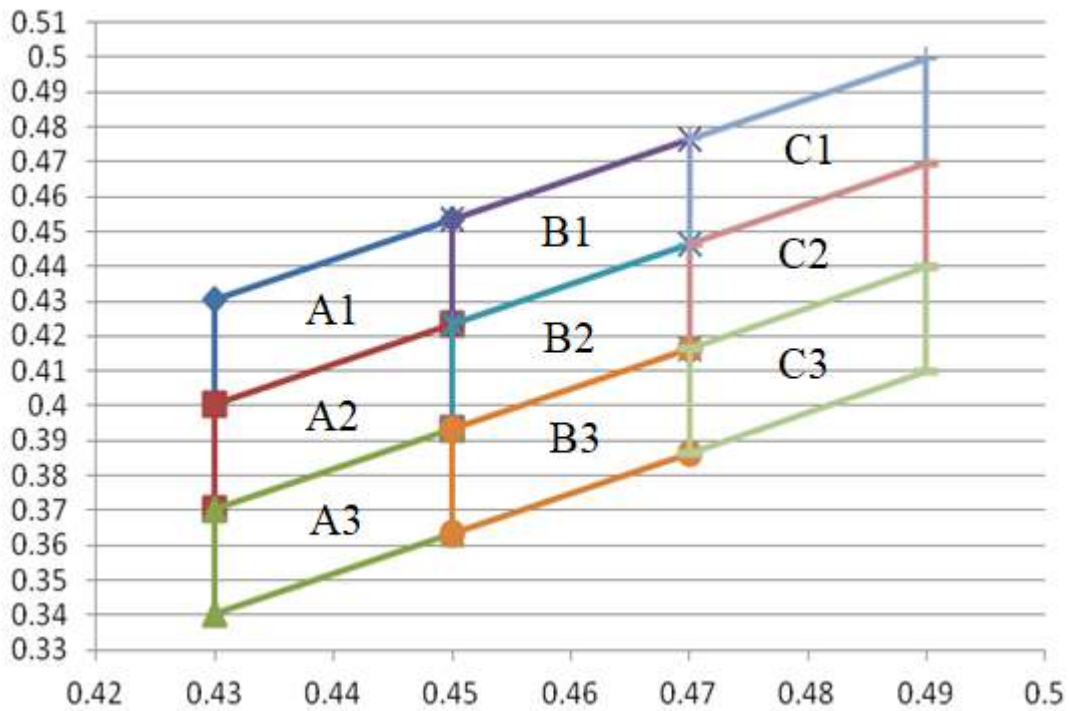
Luminous Intensity I_V for Soft White @ $I_F=20mA$

Bin	Min.	Max.	Unit
M	200	250	mcd
N	250	320	
O	320	400	
P	400	500	
Q	500	630	

Peak Wavelength λ_P for IR @ $I_F=20mA$

Bin	Min.	Max.	Unit
□	930	950	nm

CIE Chromaticity Diagram

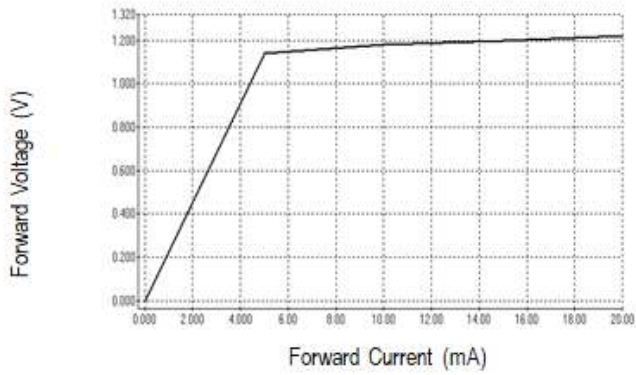


Rank	Chromaticity coordinates				
	X	Y	X	Y	X
A1	X	0.430	0.430	0.450	0.450
	Y	0.400	0.430	0.453	0.423
A2	X	0.430	0.430	0.450	0.450
	Y	0.370	0.400	0.423	0.393
A3	X	0.430	0.430	0.450	0.450
	Y	0.340	0.370	0.393	0.363
B1	X	0.450	0.450	0.470	0.470
	Y	0.423	0.453	0.477	0.447
B2	X	0.450	0.450	0.470	0.470
	Y	0.393	0.423	0.447	0.417
B3	X	0.450	0.450	0.470	0.470
	Y	0.363	0.393	0.417	0.387
C1	X	0.470	0.470	0.490	0.490
	Y	0.447	0.477	0.500	0.470
C2	X	0.470	0.470	0.490	0.490
	Y	0.417	0.447	0.470	0.440
C3	X	0.470	0.470	0.490	0.490
	Y	0.387	0.417	0.440	0.410

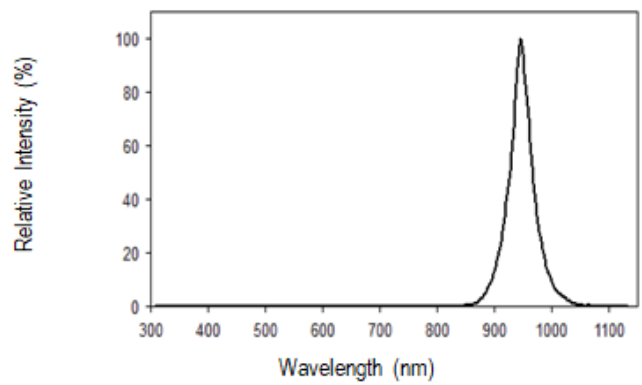
Characteristic Curves

AlGaAs (IR)

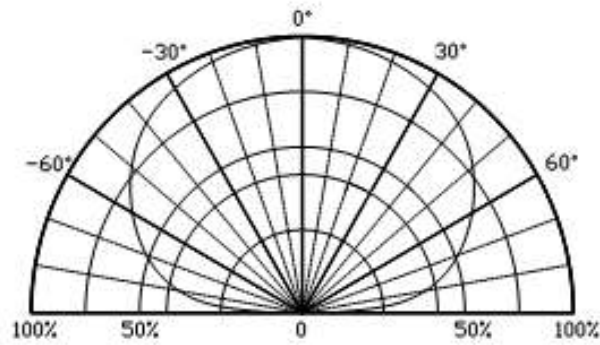
Forward Current vs. Forward Voltage



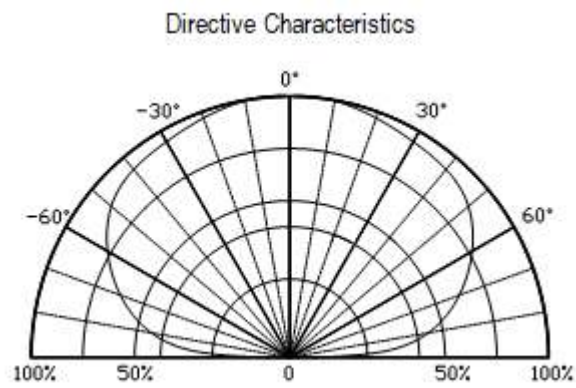
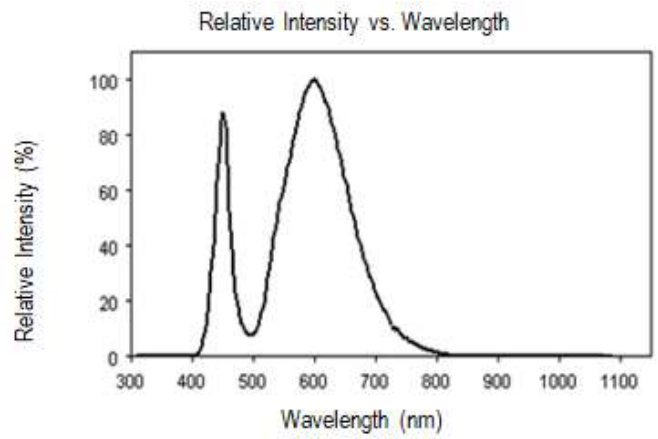
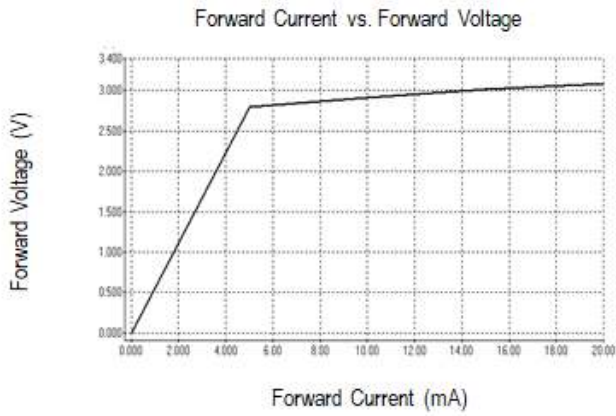
Relative Intensity vs. Wavelength



Directive Characteristics

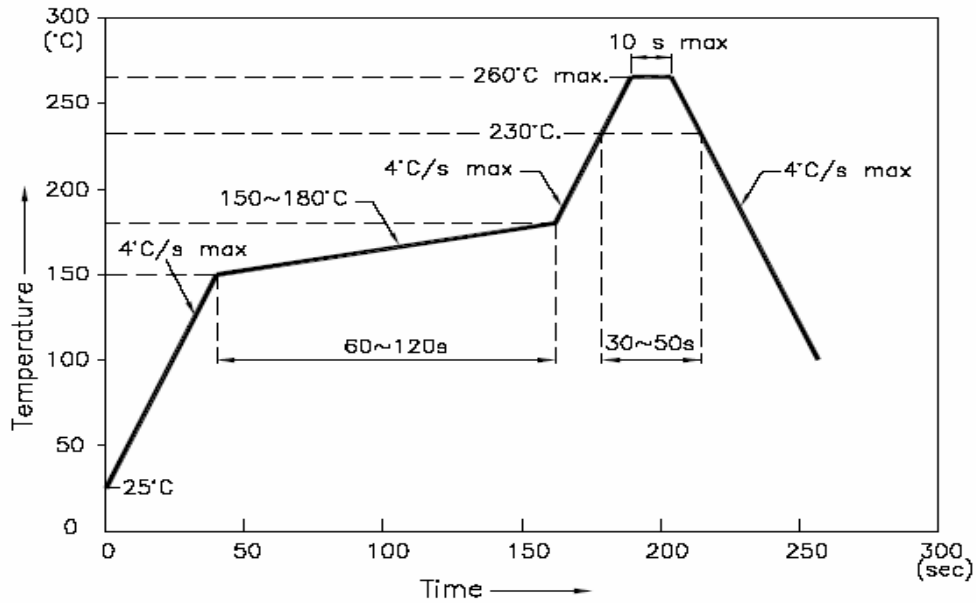


InGaN (White)

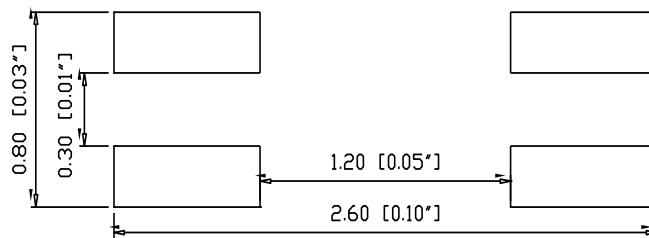


Solder Profile & Footprint

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



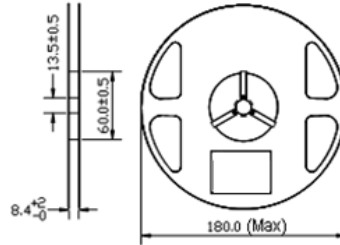
RECOMMEND PAD LAYOUT



Units: mm

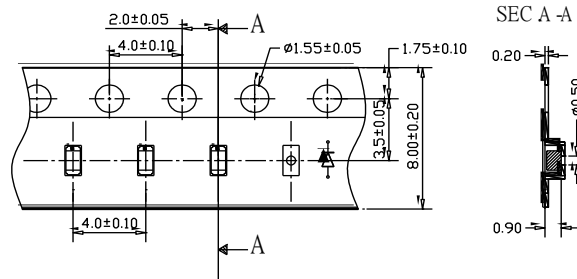
Packing

Reel Dimension:



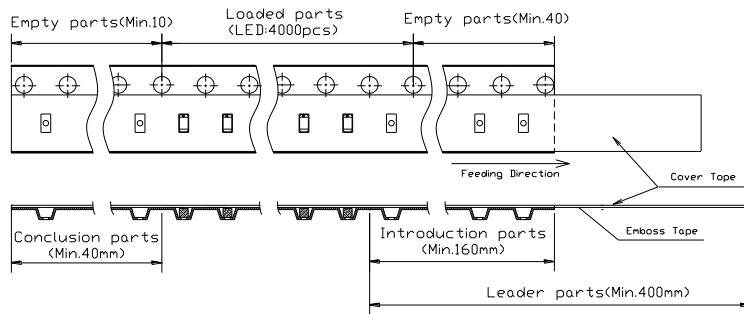
Unit: mm

Tape Dimension:

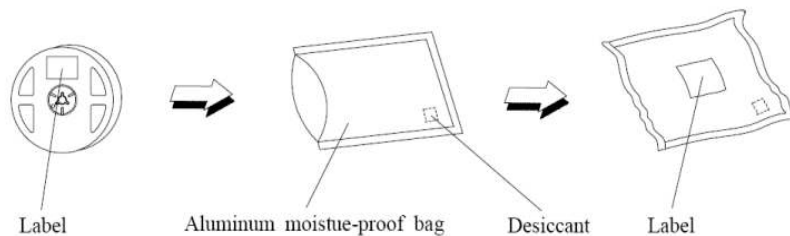


Unit: mm

Arrangement of Tape:



Packaging Specifications:



Product: QBLP601-IR1SW	Date: November 16, 2021	Page 10 of 12
	Version# 1.0	

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
QBLP601-IR1SW	QBLP601-IR1SW	IR: $I_E=0.6\text{mW/sr}$ typ. @ 20mA / λ_D : 930nm to 950nm Soft White: $I_V=340\text{mcd}$ typ. @ 20mA / CIE Coordinate: (X=0.46, Y=0.42) typ., CCT: 2700K typ.	4000pcs

Revision History

Description:	Revision #	Revision Date
New Release of QBLP601-IR1SW	V1.0	11/16/2021

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.