QT-Brightek Chip LED Series

SMD 0606 Tri-Color LED

Part No.: QBLP600-SAGB

Table of Contents:

Introduction

Feature:

- Diffused lens
- Package in tape and reel
- Ultra bright 0606 LED package
- AlInGaP technology for Deep Red/ Yellow Green
- InGaN technology for Blue
- 140° Viewing Angle

Description:

These ultra bright 0606 SAGB 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.

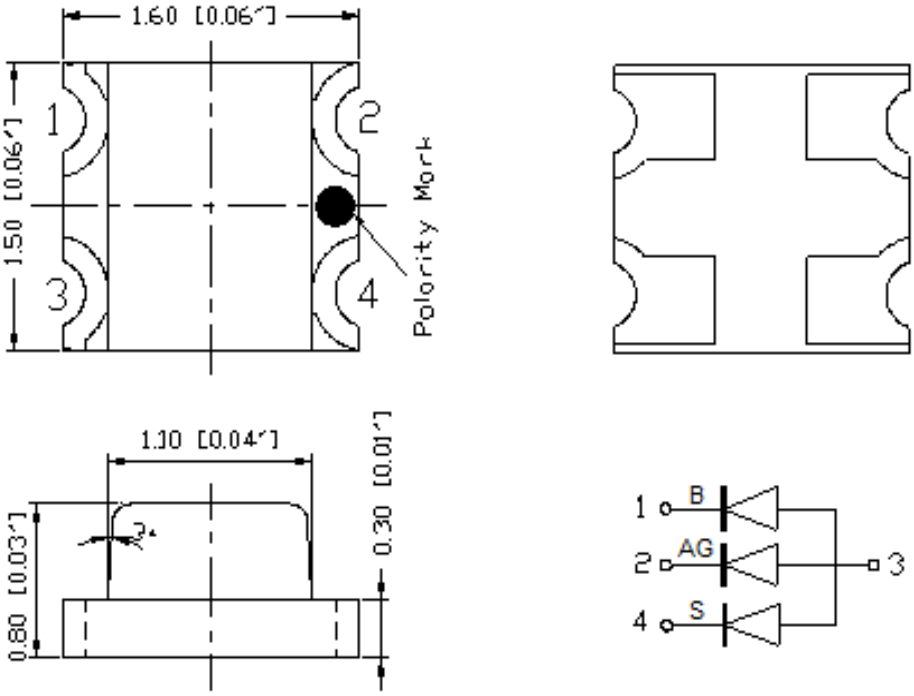
Application:

- Status indication
- Back lighting application

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.1mm

Electrical / Optical Characteristic (T=25 °C)

Product	Color	I_F(mA)	V_F(V)		λ_D (nm)			I_V(mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP600-SAGB	Deep Red	20	2.0	2.5	630	640	650	32	55
	Yellow Green	20	2.0	2.5	565	570	576	20	35
	Blue	20	3.1	3.7	465	470	475	40	75

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	75	30	125	5	-40 ~ +80	-40 ~ +85	260
InGaN	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
C	20	25	mcd
D	25	32	
E	32	40	
F	40	50	
G	50	63	
H	63	80	
I	80	100	
J	100	125	

Dominant Wavelength λ_D for Red @ I_F=20mA

Bin	Min.	Max.	Unit
v	630	635	nm
w	635	650	

Dominant Wavelength λ_D for Yellow Green @ I_F=20mA

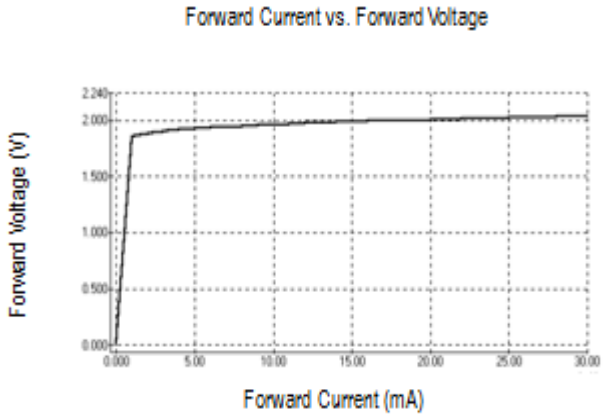
Bin	Min.	Max.	Unit
h	565	568	nm
i	568	572	
j	572	576	

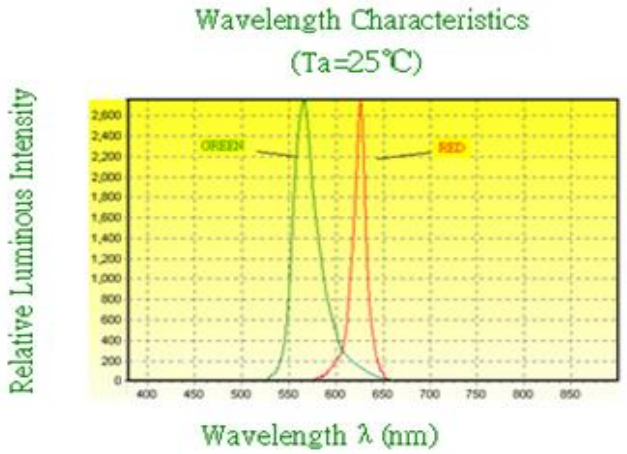
Dominant Wavelength λ_D for Blue @ I_F=20mA

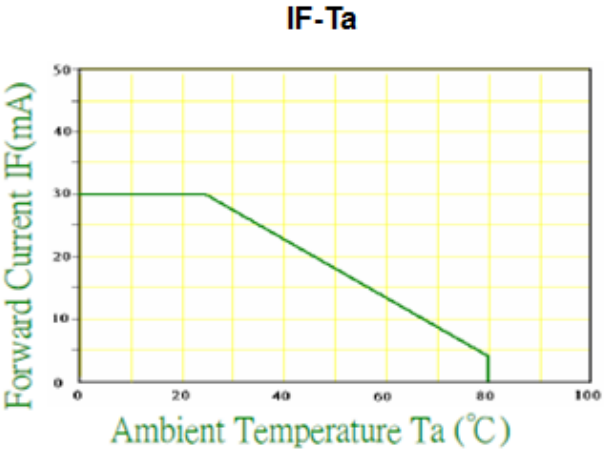
Bin	Min.	Max.	Unit
G	465	467.5	nm
H	467.5	470	
I	470	472.5	
J	472.5	475	

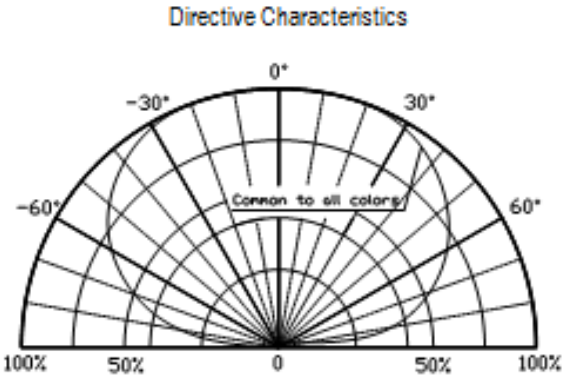
Characteristic Curves

AlInGaP

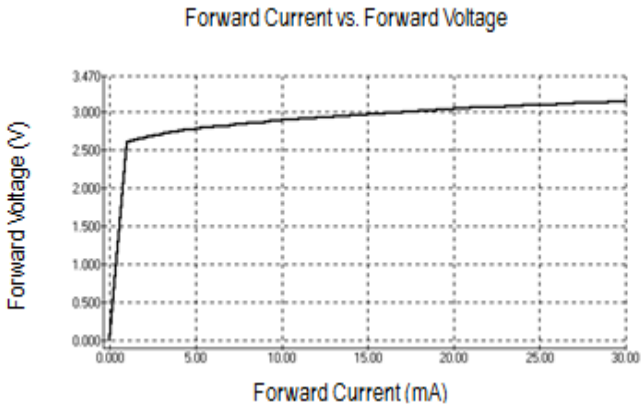


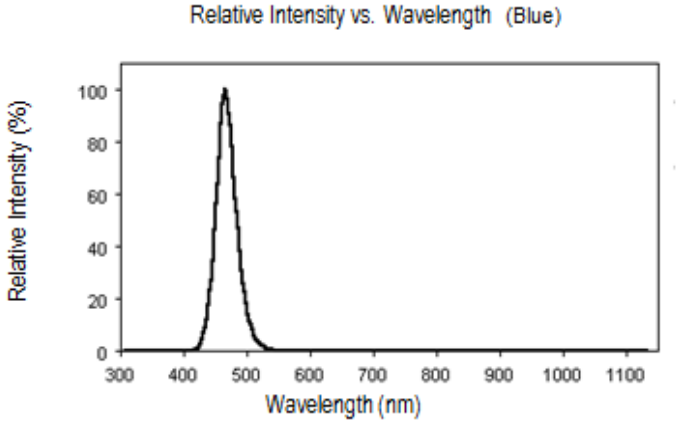


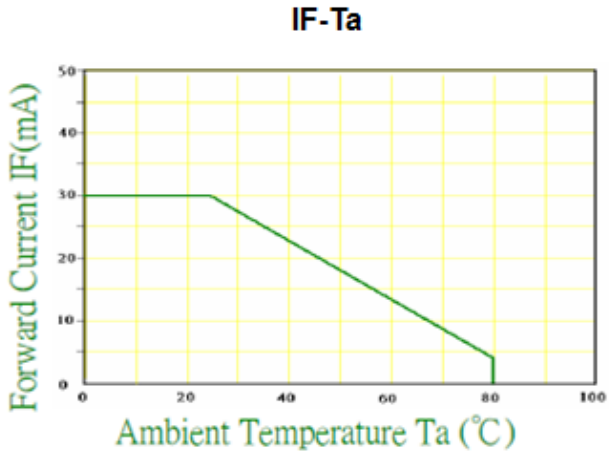


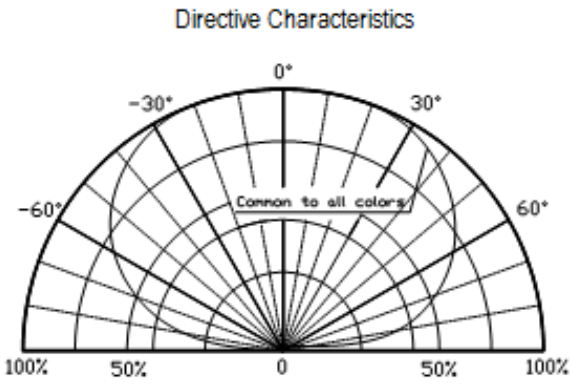


InGaN


Forward Current vs. Forward Voltage
Forward Voltage (V)
Forward Current (mA)

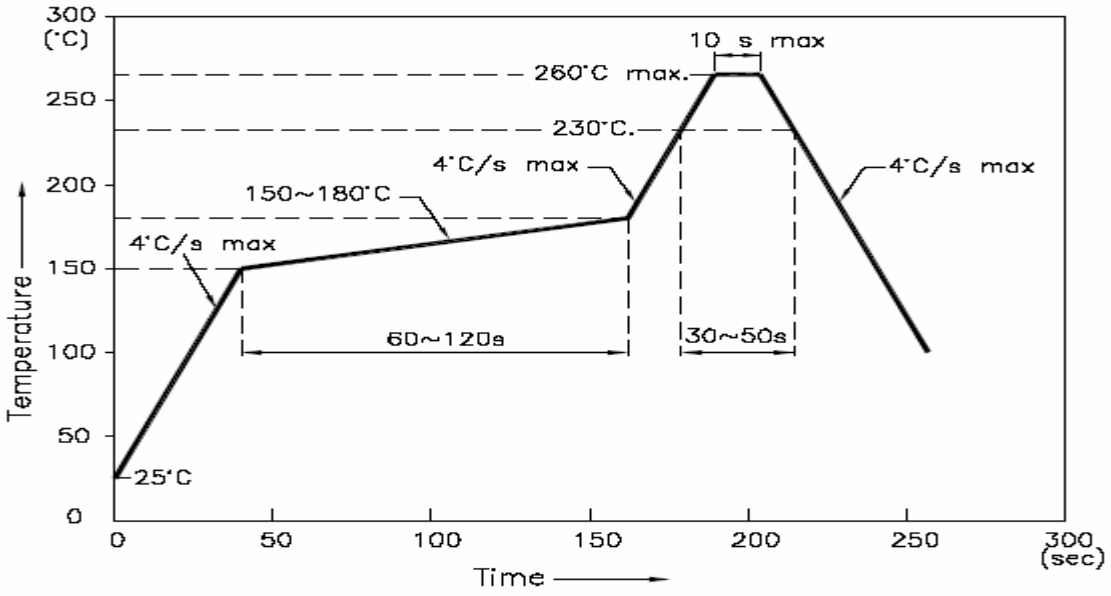

Relative Intensity vs. Wavelength (Blue)
Relative Intensity (%)
Wavelength (nm)


IF-Ta
Forward Current IF(mA)
Ambient Temperature Ta (℃)

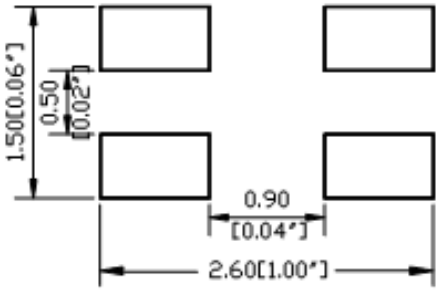

Directive Characteristics
Common to all colors

Solder Profile & Footprint

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



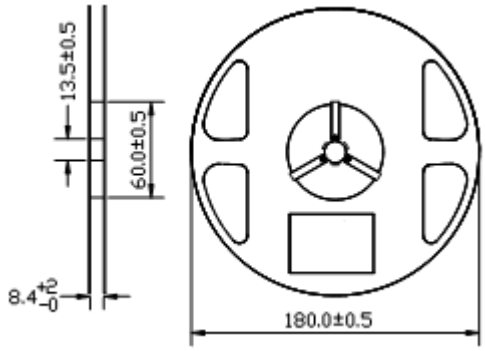
RECOMMEND PAD LAYOUT



Units: mm tolerance: +/- 0.1mm

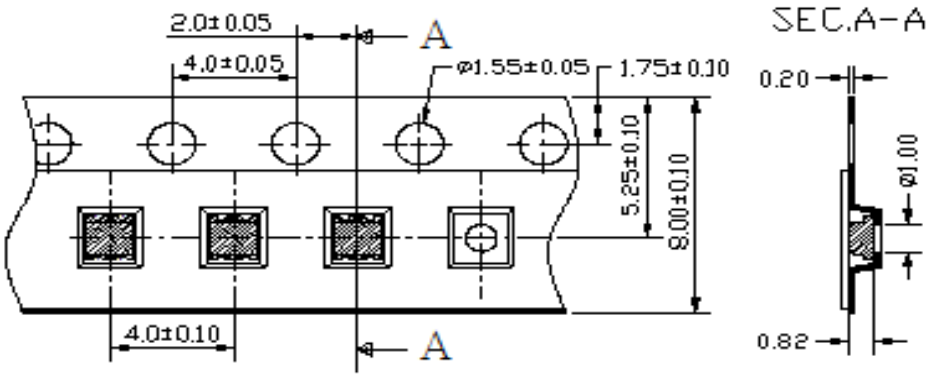
Packing

Reel Dimension:



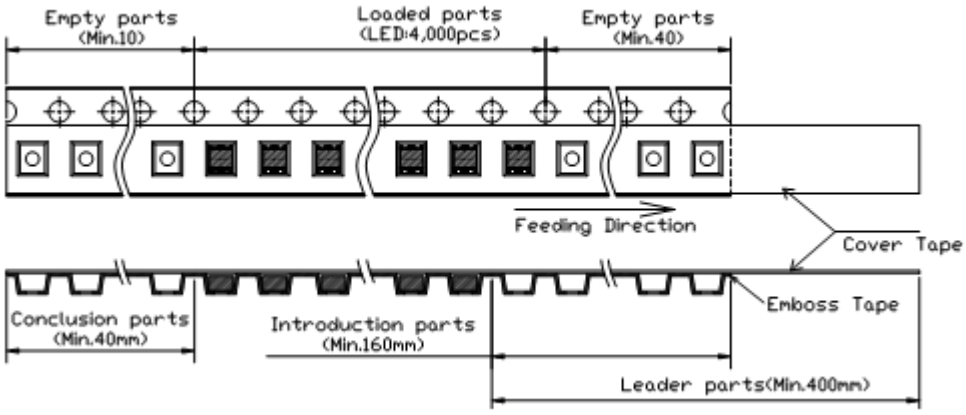
Unit: mm

Tape Dimension:

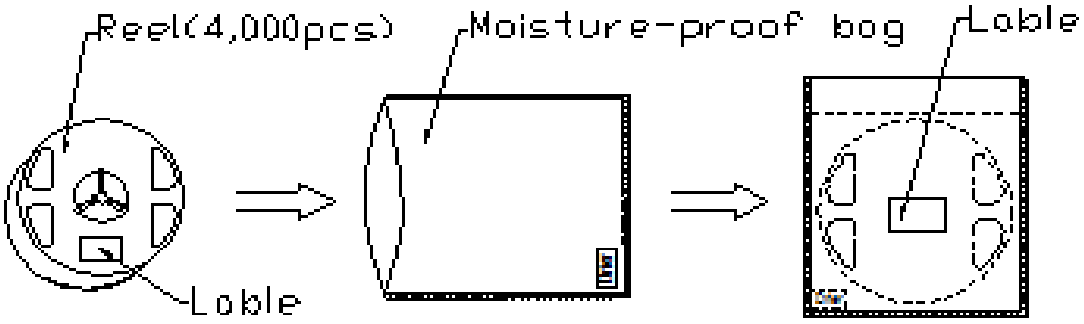


Unit in mm

Arrangement of Tape:



Packaging Specifications:



Labeling

Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP600-SAGB	QBLP600-SAGB	Deep Red: I_V=55mcd Typ. @ 20mA / λ_D: 630nm to 650nm	4,000 units
		Yellow Green: I_V=35mcd Typ. @ 20mA / λ_D: 565nm to 576nm	
		Blue: I_V=75mcd Typ. @ 20mA / λ_D: 465nm to 475nm	

Revision History

Description:	Revision #	Revision Date
New Release of QBLP600-SAGB	V1.0	02/08/2013

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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.