QT-Brightek Chip LED Series

SMD 1208 Tri-Color LED

Part No.: QBLP653-RAGUV

Table of Contents:

Introduction

Feature:

- Water clear dome lens
- Package in tap and reel
- Bright 1208 LED package
- AllnGaP technology for R(red) / AG (yellow green)
- InGaN technology for UV
- 60° Viewing Angle

Description:

These 1208 tri-color LEDs have a height profile of 2.5mm. With narrow viewing angle, LED produces high bright light output.

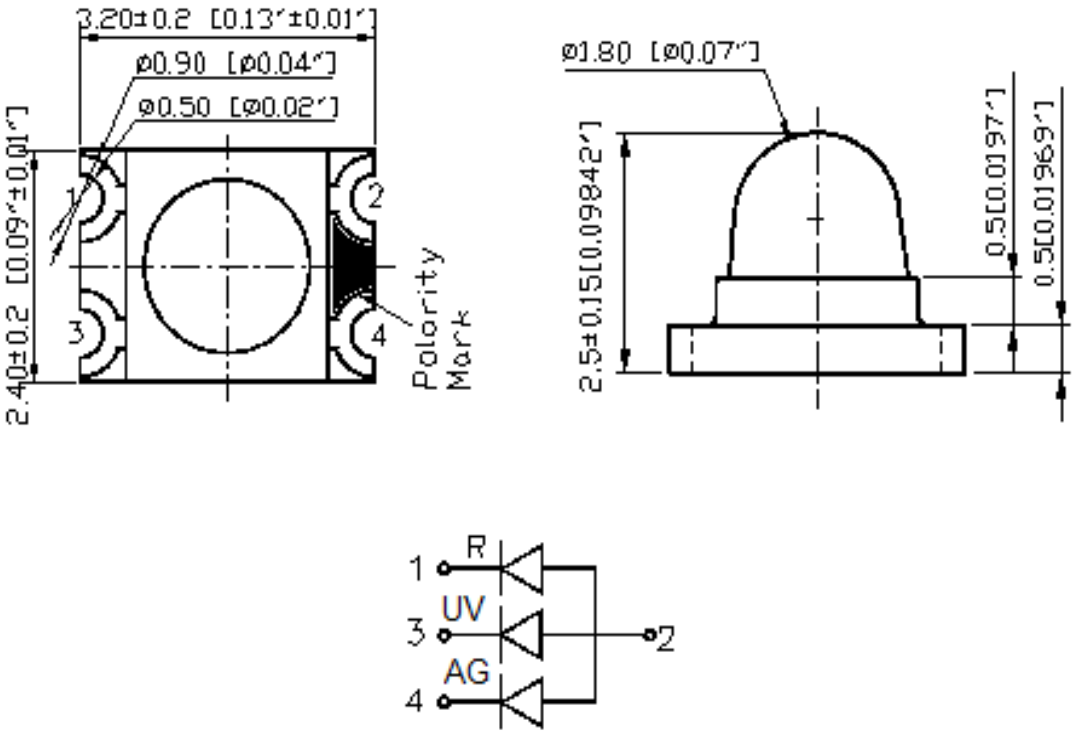
Application:

- 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.
QBLP653-RAGUV	Red	20	2.0	2.5	625	630	635	50	-
	Yellow Green	20	2.0	2.5	565	570	575	32	-
	UV	20	3.1	3.7	-	428	-	1.0	-
					λp (nm)				
					405	410	415		

Absolute Maximum Rating

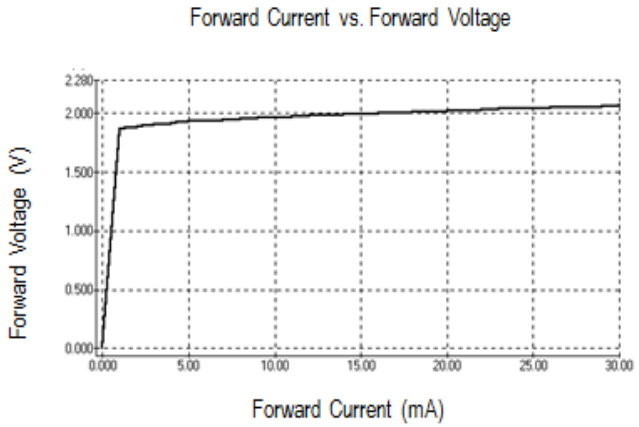
Material	P_d (mW)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)**	T_{SOL} (°C)**
AlInGaP	75	30	125	5	-40 ~ +80	-40 ~ +85	260
InGaN	108	30	125	5	-40 ~ +80	-40 ~ +85	260

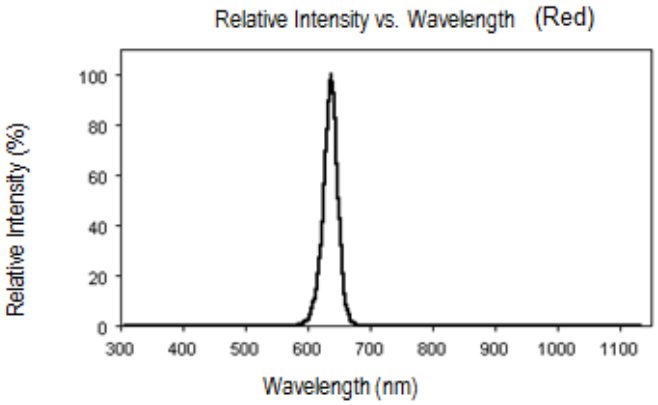
*Duty 1/8 @ 1kHz

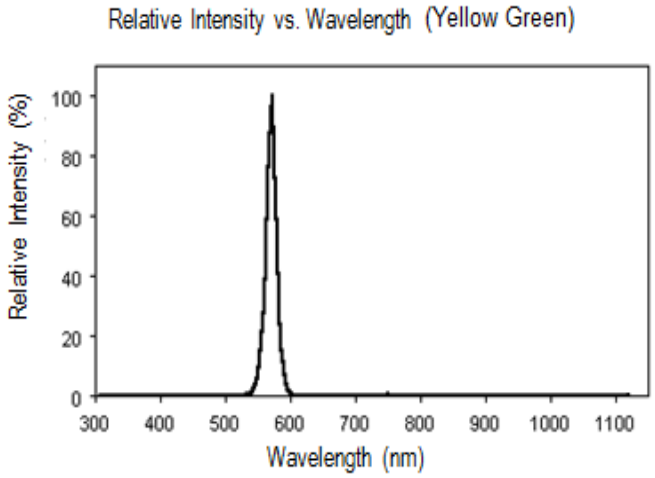
**IR Reflow for no more than 10 sec @ 260 °C

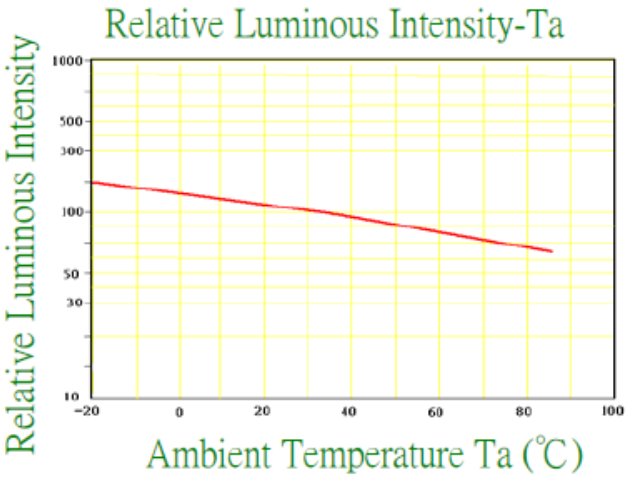
Characteristic Curves

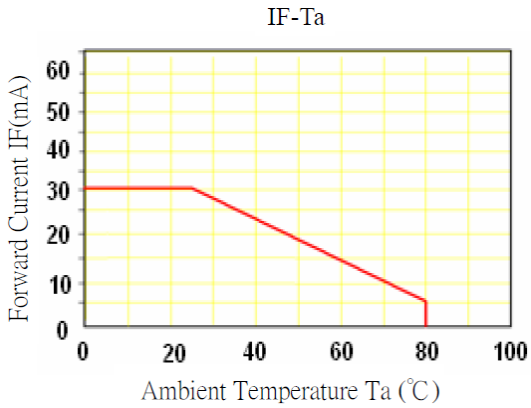
AlInGaP

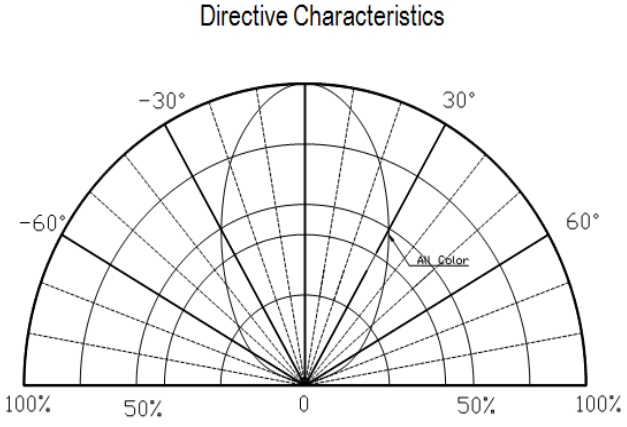




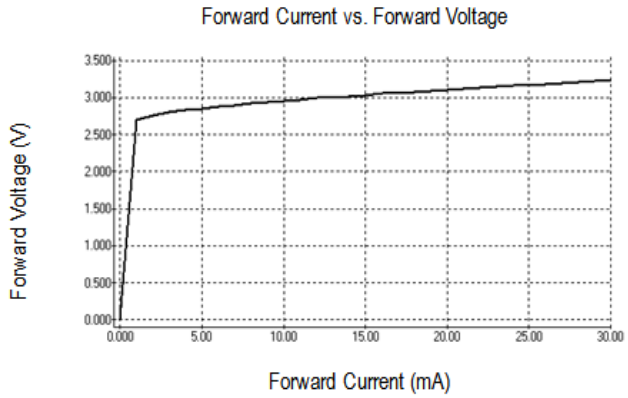


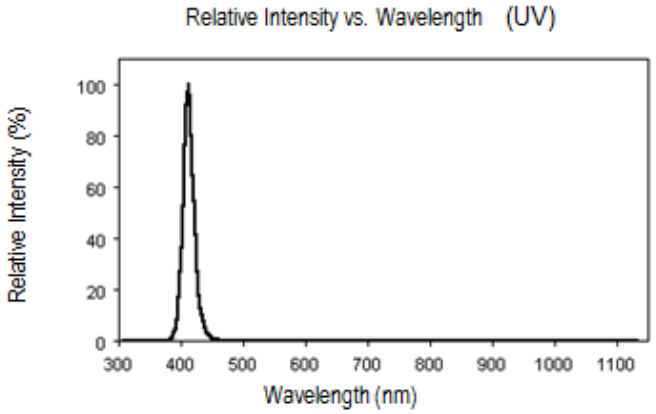


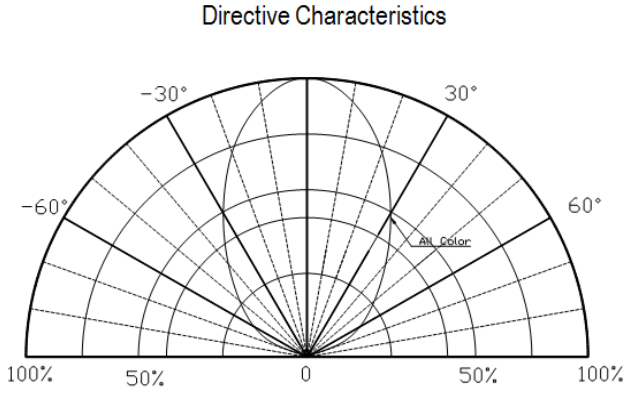




InGaN

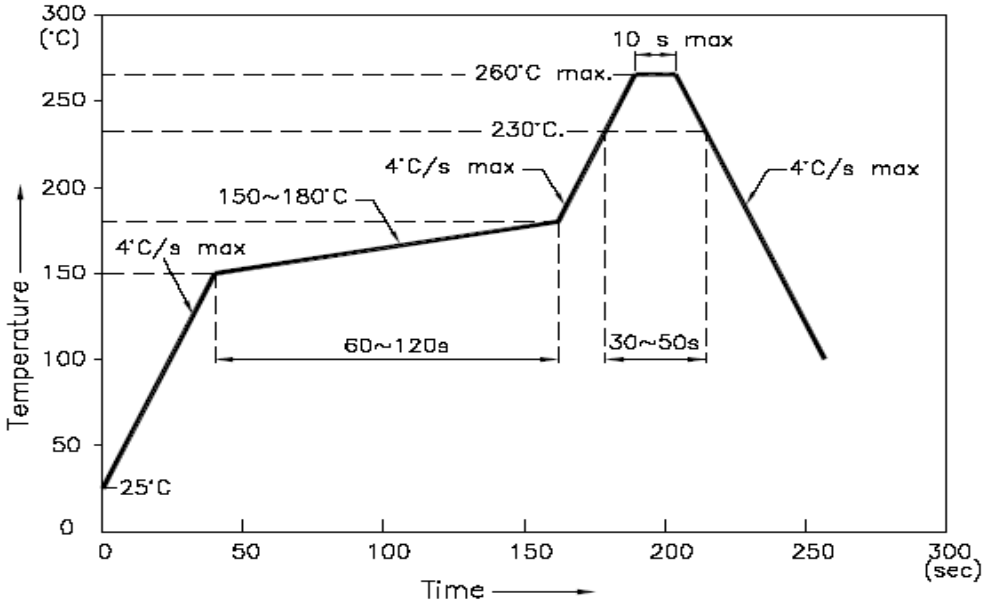

Forward Current vs. Forward Voltage
Forward Voltage (V)
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0.000
5.00
10.00
15.00
20.00
25.00
30.00
Forward Current (mA)


Relative Intensity vs. Wavelength (UV)
Relative Intensity (%)
100
80
60
40
20
0
300
400
500
600
700
800
900
1000
1100
Wavelength (nm)

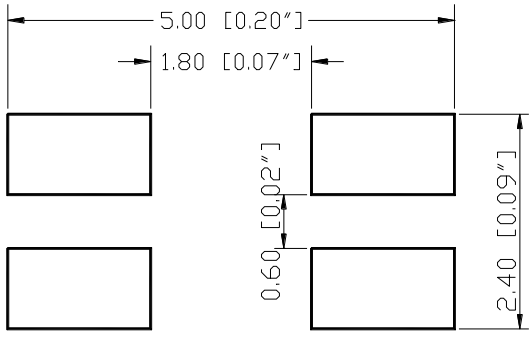

Directive Characteristics
-30°
30°
-60°
60°
All Color
100%
50%
0
50%
100%

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):



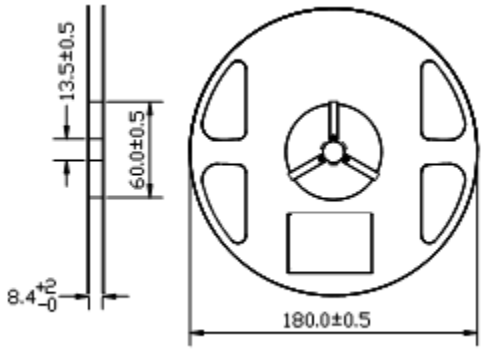
Recommend Pad Layout



Units: mm tolerance: +/- 0.1mm

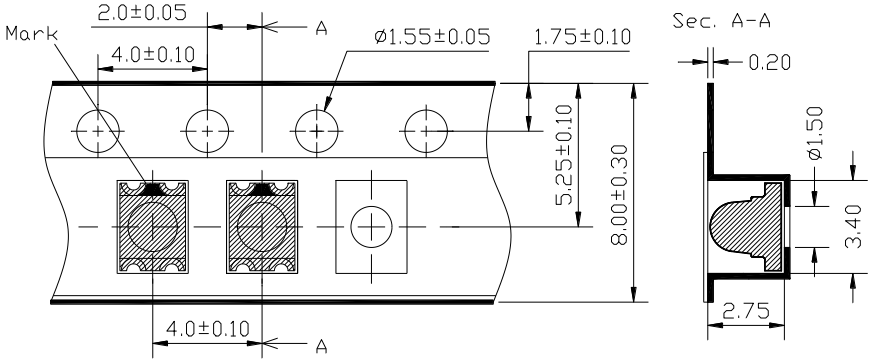
Packing

Reel Dimension:



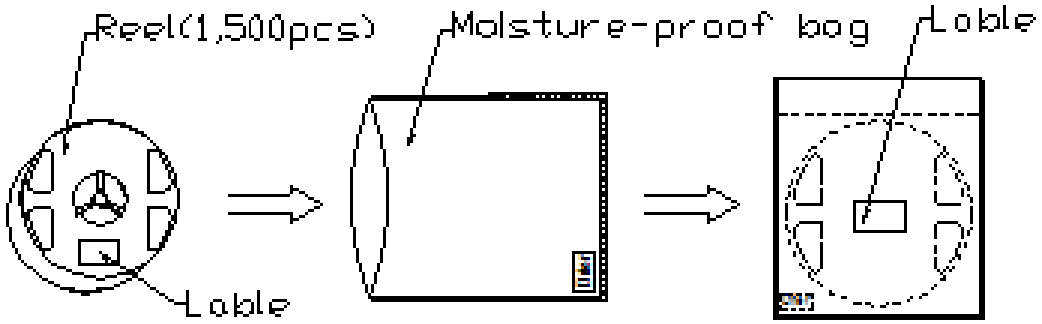
Unit: mm

Tape Dimension:



Unit: mm

Packaging Specification:



Labeling

Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP653-RAGUV	QBLP653-RAGUV	Red: Iv=50mcd min., λ_D=625nm to 635nm @ I_F=20mA	1500 units
		Yellow Green: Iv=32mcd min., λ_D=565nm to 575nm @ I_F=20mA	
		UV: Iv=1.0mcd min., λ_D=428nm typ. / λ_P=405 to 415nm @ I_F=20mA	

Revision History

Description:	Revision #	Revision Date
New Release of QBLP653-RAGUV	V1.0	01/23/2013
Update Labeling	V1.1	04/14/2016
Correct typos, add Peak wavelength for UV	V1.2	08/31/2016
Correct VF spec for UV	V1.3	10/18/2016

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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.