

# **QT-Brightek High Power Series**

## **0.5W High Power 2835 LED**

**Part No.: QBHP686-IGN-2913**

**IG = True Green**

**N = 100mA**

Product: QBHP686-IGN-2913	Date: June 18, 2018	Page 1 of 10
	Version# 1.0	

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## Introduction

**Feature:**

- Clear lens
- Package in tape and reel
- 0.5W high power
- Low thermal resistance
- InGaN technology for IG
- 120 degree viewing angle

**Description:**

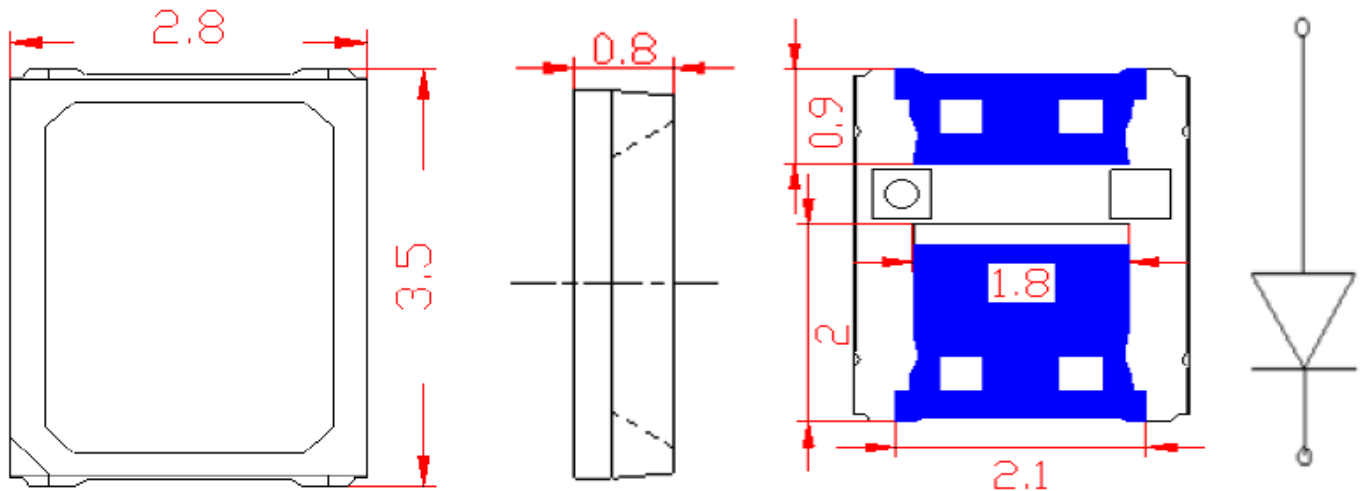
The low profile 0.5W high bright LED has height of 0.8mm. It is ideal for indoor lighting and general use.

**Application:**

- Status indication
- Industrial equipment backlighting
- Architecture lighting

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant

**Dimension:**

Units: mm / tolerance = +/-0.2mm

**Electrical / Optical Characteristic (Ta=25 °C)**

Product	Color	IF(mA)	VF(V)		λD (nm)			ΦV (lm)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBHP686-IGN-2913	True Green	100	3.0	3.4	515	525	530	30	38

**Absolute Maximum Rating**

Material	Pd (mW)	IF (mA)	IFP (mA)*	VR (V)	TOP (°C)	TST (°C)	TSOL (°C)**
InGaN (IG)	530	160	200	5	-40 ~ +85	-40 ~ +100	260

\*Duty 1/10 @ 1KHz

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

**Forward Voltage VF for InGaN @ IF=100mA**

Bin	Min.	Max.	Unit
f	2.8	3.1	V
g	3.1	3.4	

**Luminous Flux ΦV for True Green (IG) @ IF=100mA**

Bin	Min.	Max.	Unit
P300	30	35	lm
P350	35	40	
P400	40	45	

**Dominant Wavelength λD for True Green (IG) @ IF=100mA**

Bin	Min.	Max.	Unit
TG1	515	520	nm
TG2	520	525	
TG3	525	530	

Note:

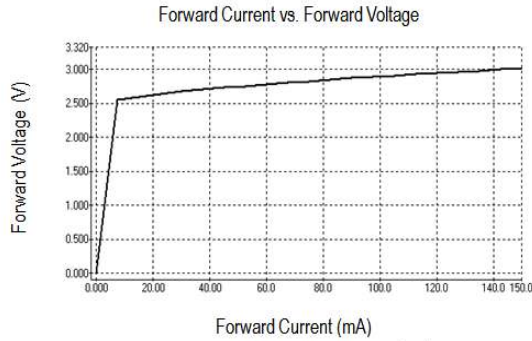
Tolerance of measurement of forward voltage: ±0.1V

Tolerance of measurement of luminous flux: ±15%

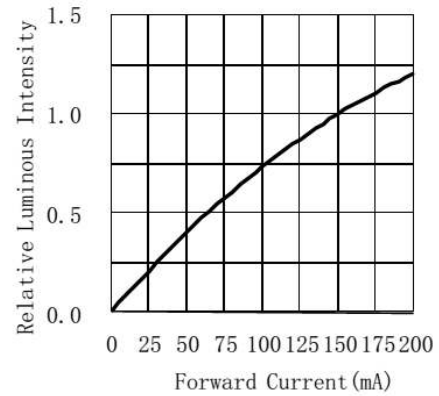
Tolerance of measurement of dominant wavelength: ±1nm

## Characteristic Curves

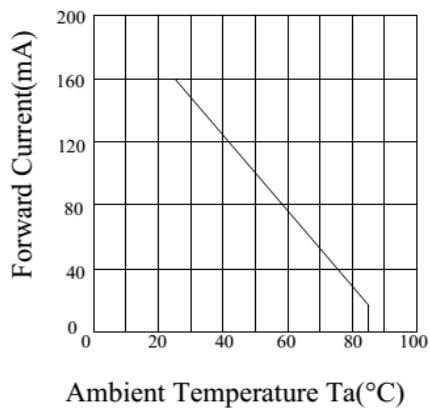
InGaN (IB/IG)



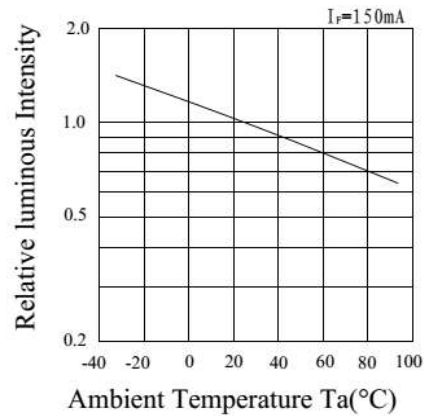
a) FORWARD CURRENT VS. FORWARD VOLTAGE



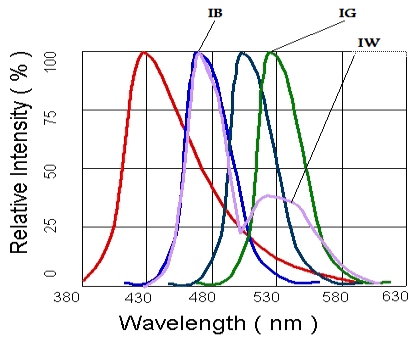
b) RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



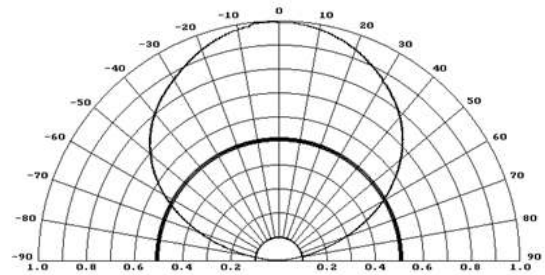
c) FORWARD CURRENT VS. AMBIENT TEMPERATURE



d) RELATIVE INTENSITY VS. AMBIENT TEMPERATURE



e) RELATIVE INTENSITY VS. WAVELENGTH

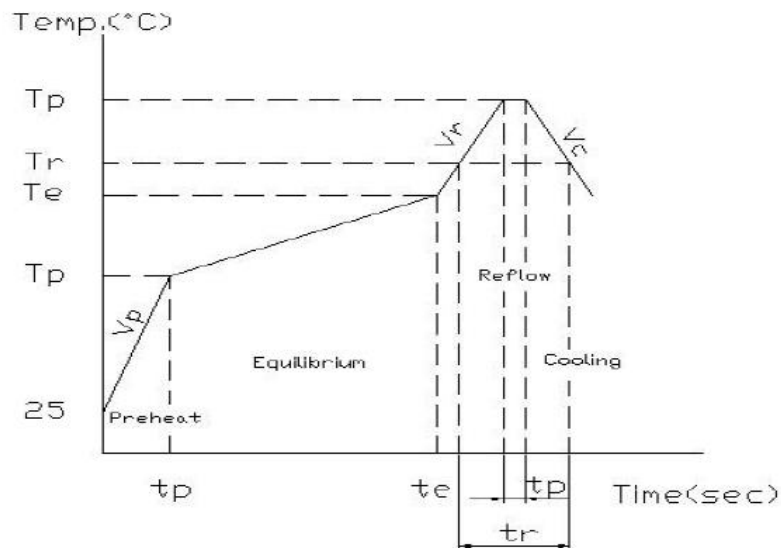


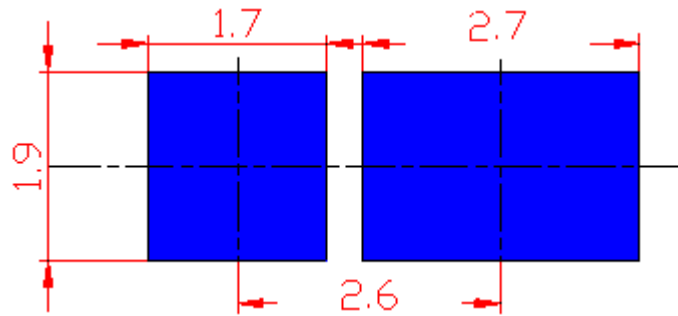
f) RADIATION PATTERN

## Solder Profile & Footprint

IR-reflow Condition (Pb free)

Area	Title	Symbol	Min	Max	Unit
(1)Preheat	Ramp-up rate	Vp	1	5	°C/sec
	temperature	Tp	150	-	°C
	time	tp	-	-	sec
(2)Equilibrium	Ramp-up rate	Ve	-	-	°C/sec
	temperature	Te	150	200	°C
	Time	te	60	120	sec
(3)Reflow	Ramp-up rate	Vr	1	5	°C/sec
	temperature	Tr	220	-	°C
	Time	tr	-	60	sec
	Peak temperature	Trp	-	260	°C
	Peak time	trp	-	10	sec
(4)Cooling	Ramp-down rate	Vc	3	6	°C/sec

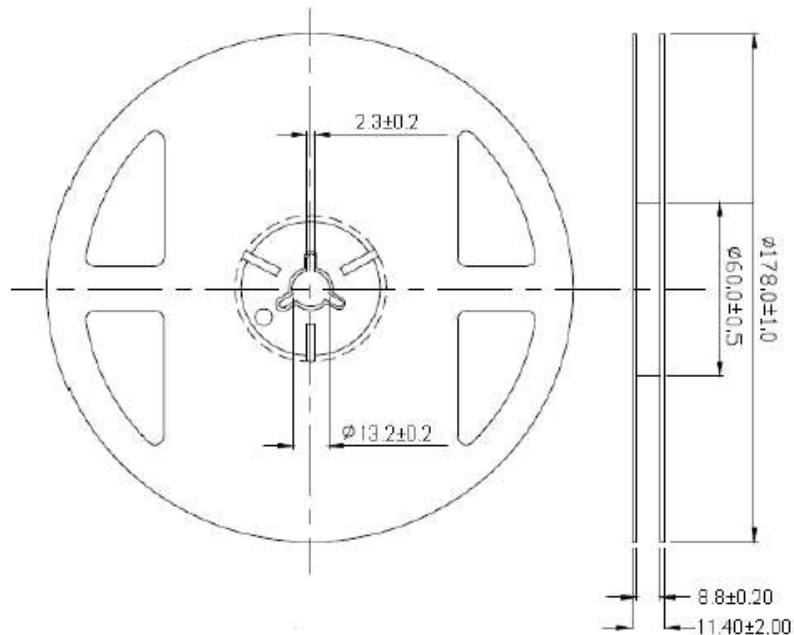


**Recommended Pad Layout**

Units: mm

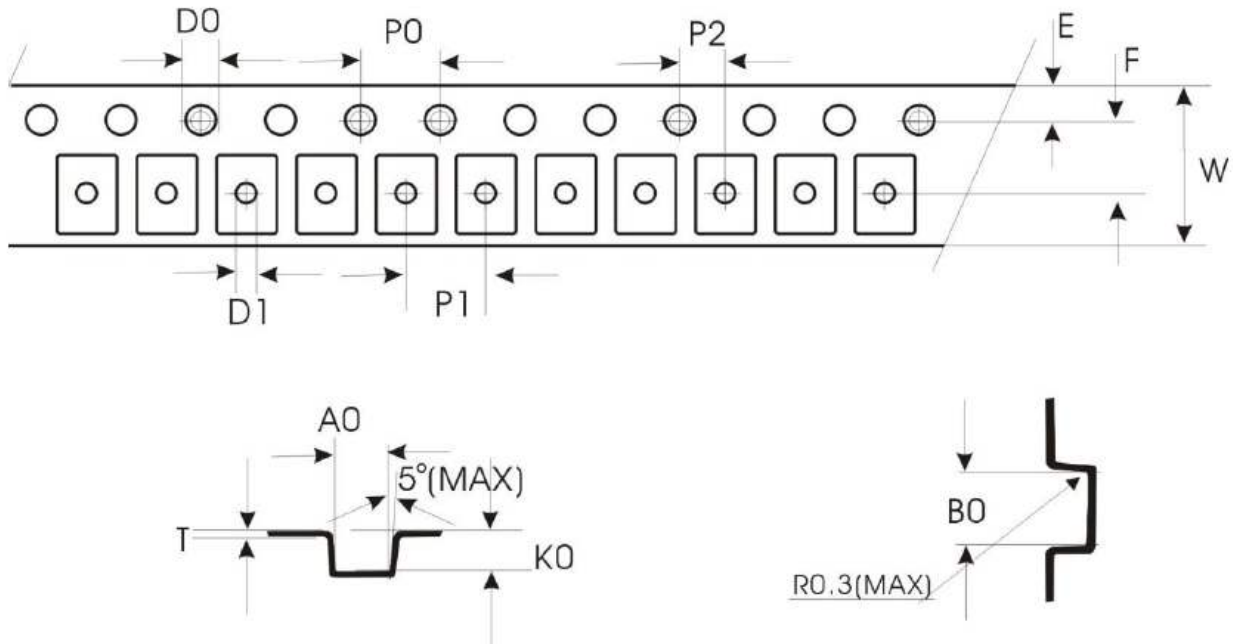
Tolerance:  $\pm 0.2\text{mm}$ **Packing**

Reel Dimension:



Unit: mm

Tape Dimension:

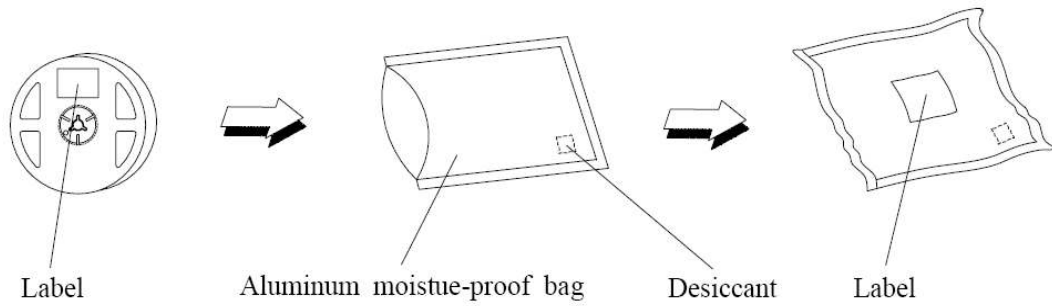


Symbol	A0	B0	K0	P0	P1	P2	T
Spec	3.0±0.1	3.8±0.1	1.0±0.1	4.0±0.1	4.0±0.1	2.00±0.1	0.22±0.05
Symbol	E	F	D0	D1	W	P0	
Spec	1.75±0.10	3.50±0.05	1.5±0.1	1.0±0.1	8.0±0.1	40.0±0.2	

Unit: mm



**Packaging Specification:**



**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
QBHP686-IGN-2913	QBHP686-IGN-2913	$\Phi v=38lm$ typ. @ 100mA/ Color=525nm	4,000 units

## Revision History

Description:	Revision #	Revision Date
New Release of QBHP686-IGN-2913	V1.0	06/18/2018

## 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.