

# QT-Brightek High Power Series

## 0.2W Mid Power 2835 LED

**Part No.: QBHP686-IWK-XX**

**K: 60mA**  
**XX = WW/NW/CW**



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## Introduction

**Feature:**

- Yellow diffused lens
- Package in tape and reel
- 0.2W mid power
- InGaN White
- CRI 80 typ.

**Description:**

The low profile 0.2W high bright LED has height of 0.8mm. It is ideal for indoor lighting and general used.

**Application:**

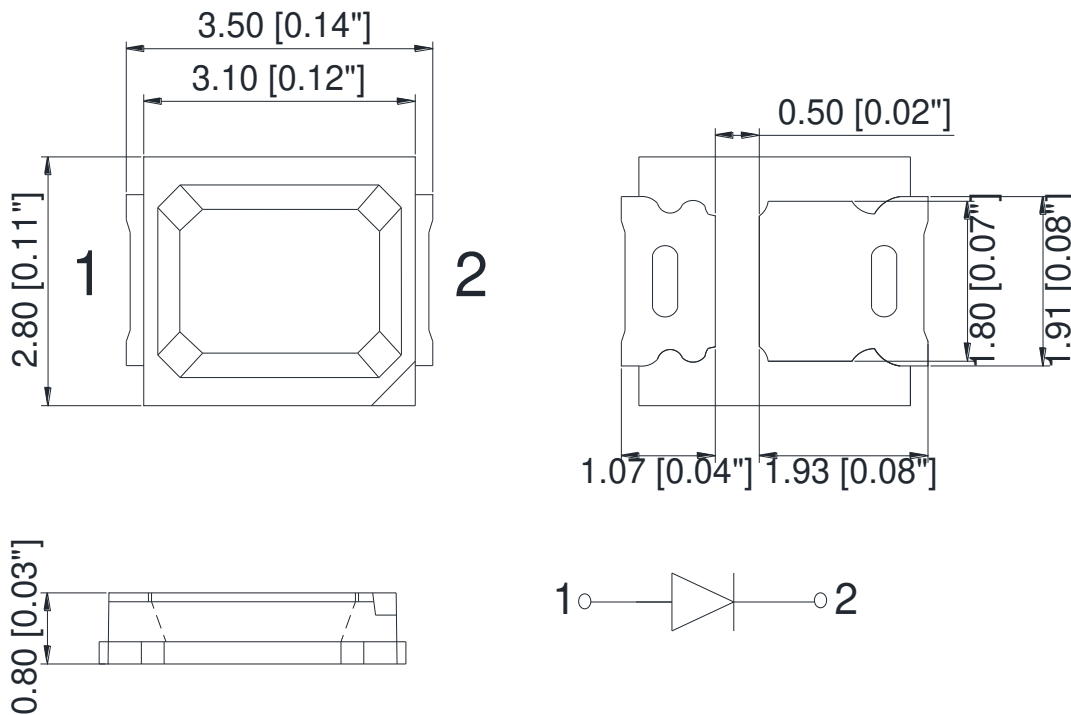
- Architectural lighting
- Household appliances
- General Lighting

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.2mm

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

Product	Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		CIE Coordinate Typ.	Φ <sub>v</sub> (lm)	
			Typ.	Max.		Min.	Typ.
QBHP686-IWK-WW	Warm White	60	3.2	3.4	X=0.4338, Y=0.4030 CCT: 3000K	20	24
QBHP686-IWK-NW	Natural White	60	3.2	3.4	X=0.3818, Y=0.3797 CCT: 4000K	20	25
QBHP686-IWK-CW	Cool White	60	3.2	3.4	X=0.3214, Y=0.3357 CCT: 6000K	20	24

**Absolute Maximum Rating**

Material	P <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> (mA)*	IR (μA) @ V <sub>R</sub> =5V	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)	T <sub>SOL</sub> (°C)**
InGaN	250	65	125	5	-40 to +85	-40 to +100	260

\*Duty 1/8 @ 1kHz

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

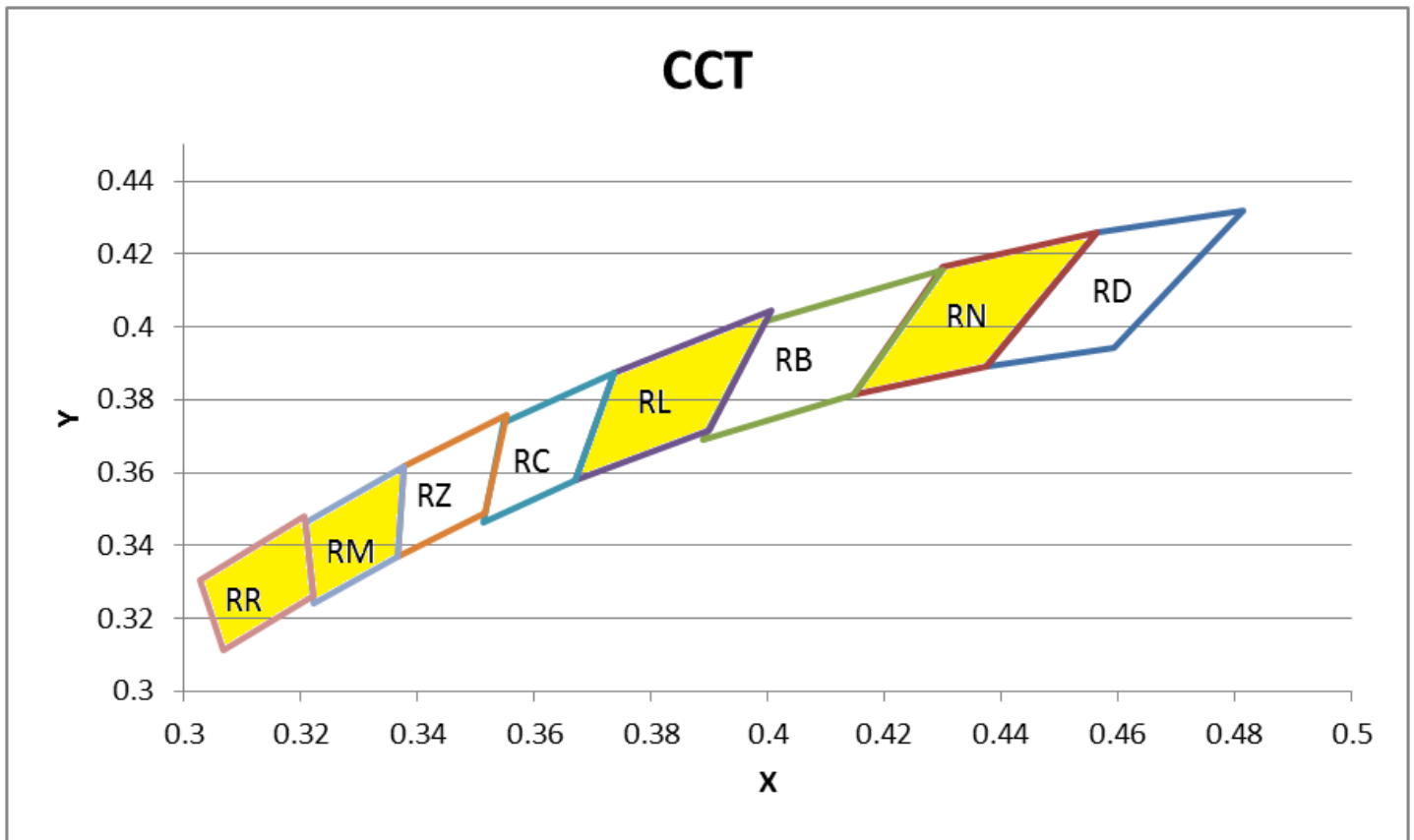
**Forward Voltage V<sub>F</sub> @ I<sub>F</sub>=60mA**

Bin	Min.	Max.	Unit
H	2.8	3.0	V
J	3.0	3.2	
K	3.2	3.4	

**Luminous Flux Φ<sub>v</sub> @ I<sub>F</sub>=60mA**

Bin	Min.	Max.	Unit
L2	20	23	lm
L3	23	26	
L4	26	29	

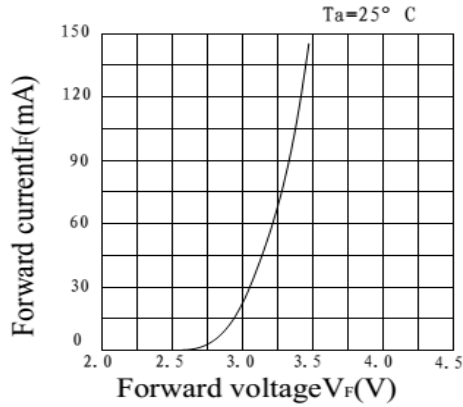
## Correlated Color Temperature Chart



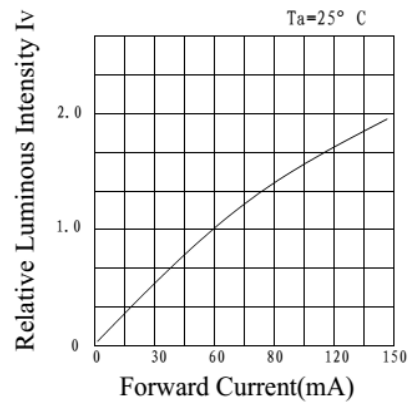
P/N	QBHP686-IWK-CW				QBHP686-IWK-NW		QBHP686-IWK-WW	
	RR		RM		RL		RN	
	X	Y	X	Y	X	Y	X	Y
Chromaticity Coordinates	0.3205	0.3481	0.3376	0.3616	0.4006	0.4044	0.4562	0.4260
	0.3028	0.3304	0.3207	0.3462	0.3736	0.3874	0.4299	0.4165
	0.3068	0.3113	0.3222	0.3243	0.3670	0.3578	0.4147	0.3814
	0.3221	0.3261	0.3366	0.3369	0.3898	0.3716	0.4373	0.3893
	0.3205	0.3481	0.3376	0.3616	0.4006	0.4044	0.4562	0.4260

Note:  
Tolerance of measurement of color coordinates:  $\pm 0.01$

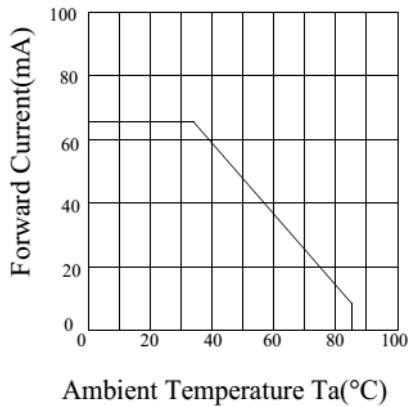
## Characteristic Curves



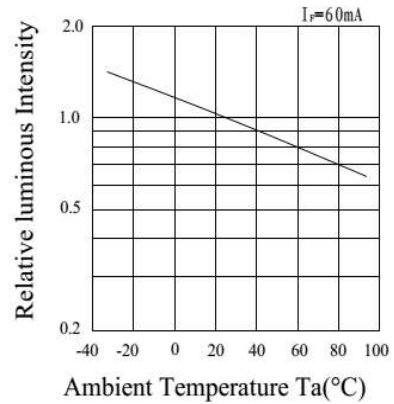
a) FORWARD CURRENT VS. FORWARD VOLTAGE



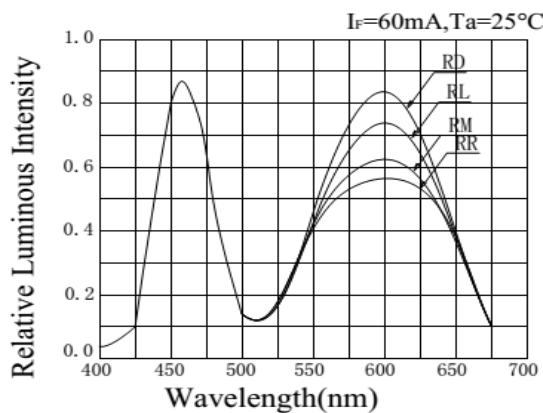
b) RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



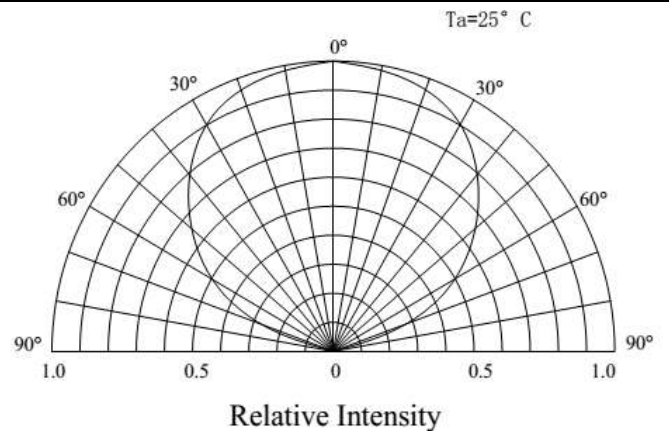
c) FORWARD CURRENT VS. AMBIENT TEMPERA



d) RELATIVE INTENSITY VS. AMBIENT TEMPERATURE



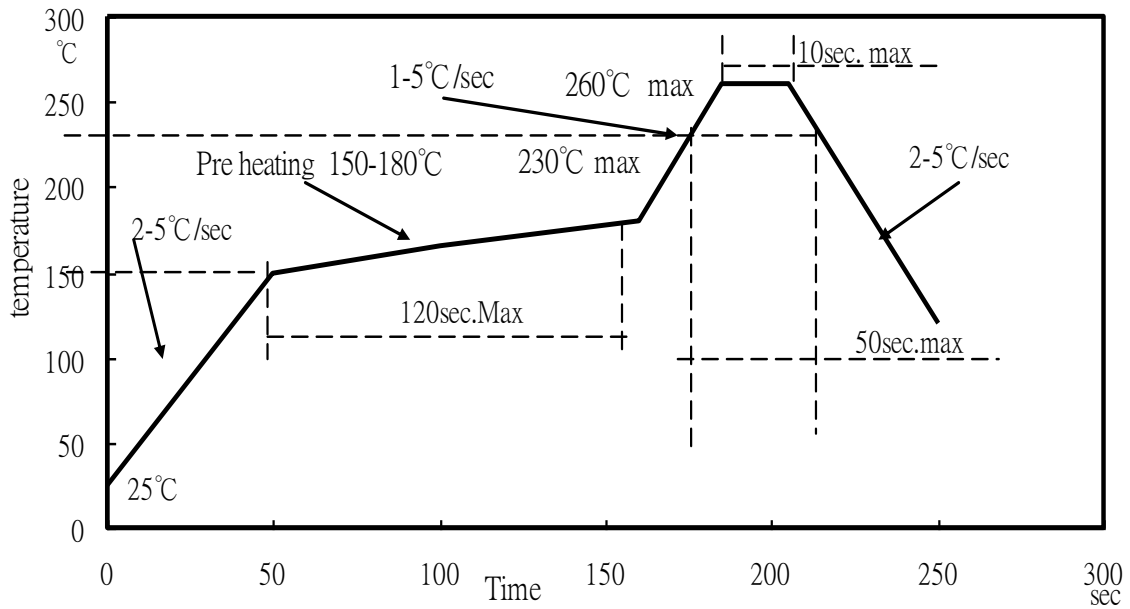
e) RELATIVE INTENSITY VS. WAVELENGTH



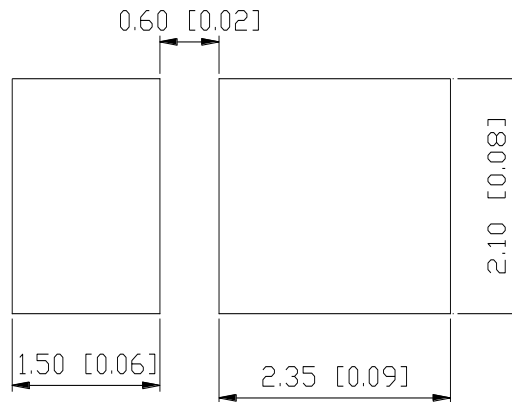
f) RADIATION PATTERN

## Solder Profile

### Lead-Free soldering Profile



### Recommended Pad Layout



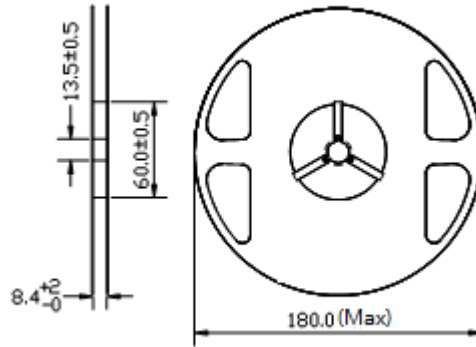
Units: mm

Tolerance: ± 0.2mm

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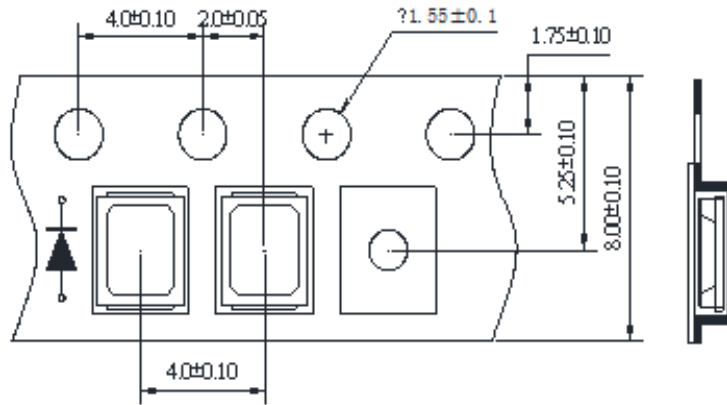
## Packing

Reel Dimension:



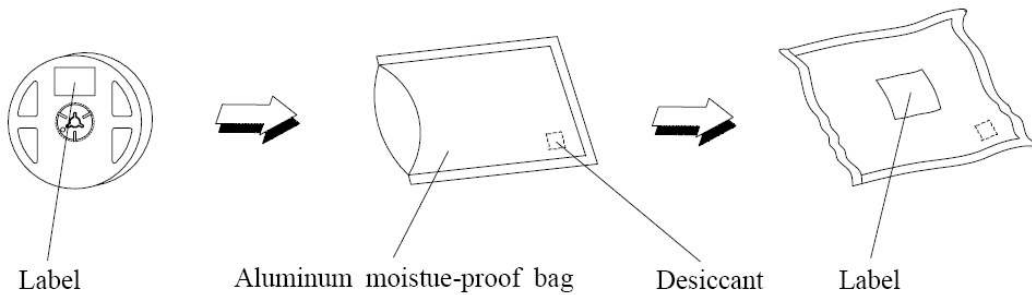
Unit: mm

Tape Dimension:



Unit: mm

Packaging Specifications:



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**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-IWK-WW	QBHP686-IWK-WW	Iv=24lm typ. @ I <sub>F</sub> =60mA / CCT=3000K typ.	2,000 units
QBHP686-IWK-NW	QBHP686-IWK-NW	Iv=25lm typ. @ I <sub>F</sub> =60mA / CCT=4000K typ.	2,000 units
QBHP686-IWK-CW	QBHP686-IWK-CW	Iv=24lm typ. @ I <sub>F</sub> =60mA / CCT=6000K typ.	2,000 units

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## Revision History

Description:	Revision #	Revision Date
New Release of QBHP686-IWK	V1.0	1/20/2011
CCT Updates	V1.1	03/24/2011
Amend CCT	V2.0	05/13/2011
Add CCT- 5000K & bin	V2.1	08/19/2011
Update Spec	V2.2	03/14/2012
Update Spec and drawing	V3.0	10/18/2013
Update dimension tolerance	V3.1	12/10/2013
Update drawing dimension	V4.0	08/04/2017
Update brightness bin	V4.1	08/05/2021

## Disclaimer

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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
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.