

QT-Brightek High Power Series

0.5W High Power 2835 LED

Part No.: QBHP686-IWH-XX

XX = WW/NW/CW

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Introduction

Feature:

- Diffused lens
- Package in tape and reel
- 0.5W high power
- Low thermal resistance
- Super high flux and luminance
- InGaN White
- CRI 80 typ.

Description:

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

Application:

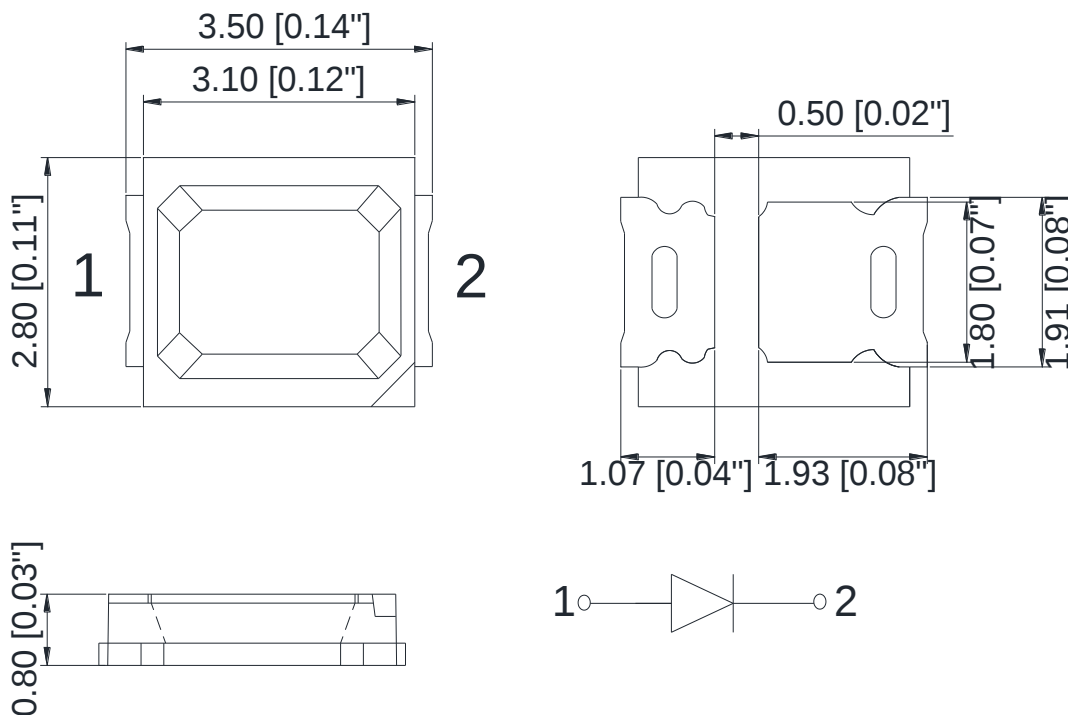
- Architectural lighting
- Household appliances
- General Lighting

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



Dimension:



Units: mm / tolerance = +/-0.2mm

Electrical / Optical Characteristic (Ta=25 °C)

Product	Color	I _F (mA)	V _F (V)		CCT (K)			Φ _v (lm)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBHP686-IWH-WW	Warm White	150	3.2	3.4	-	3000	-	37	45
QBHP686-IWH-NW	Natural White	150	3.2	3.4	-	4000	-	40	47
QBHP686-IWH-CW	Cool White	150	3.2	3.4	-	6020	-	40	47

Absolute Maximum Rating

Material	P _d (mW)	I _F (mA)	I _{FP} (mA)*	I _R (μA) @ V _R =5V	T _{OP} (°C)	T _{ST} (°C)	T _{SOL} (°C)**
InGaN	540	160	250	10	-40 to +85	-40 to +100	260

*Duty 1/10 @ 10KHz

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

Forward Voltage V_F @ $I_F=150\text{mA}$

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

Luminous Flux Φ_V for Warm White @ $I_F=150\text{mA}$

Bin	Min.	Max.	Unit
L1	37	42	lm
L2	42	47	
L3	47	52	
L4	52	57	
L5	57	62	

Luminous Flux Φ_V for Natural White @ $I_F=150\text{mA}$

Bin	Min.	Max.	Unit
L1	40	42	lm
L2	42	47	
L3	47	52	
L4	52	57	
L5	57	62	

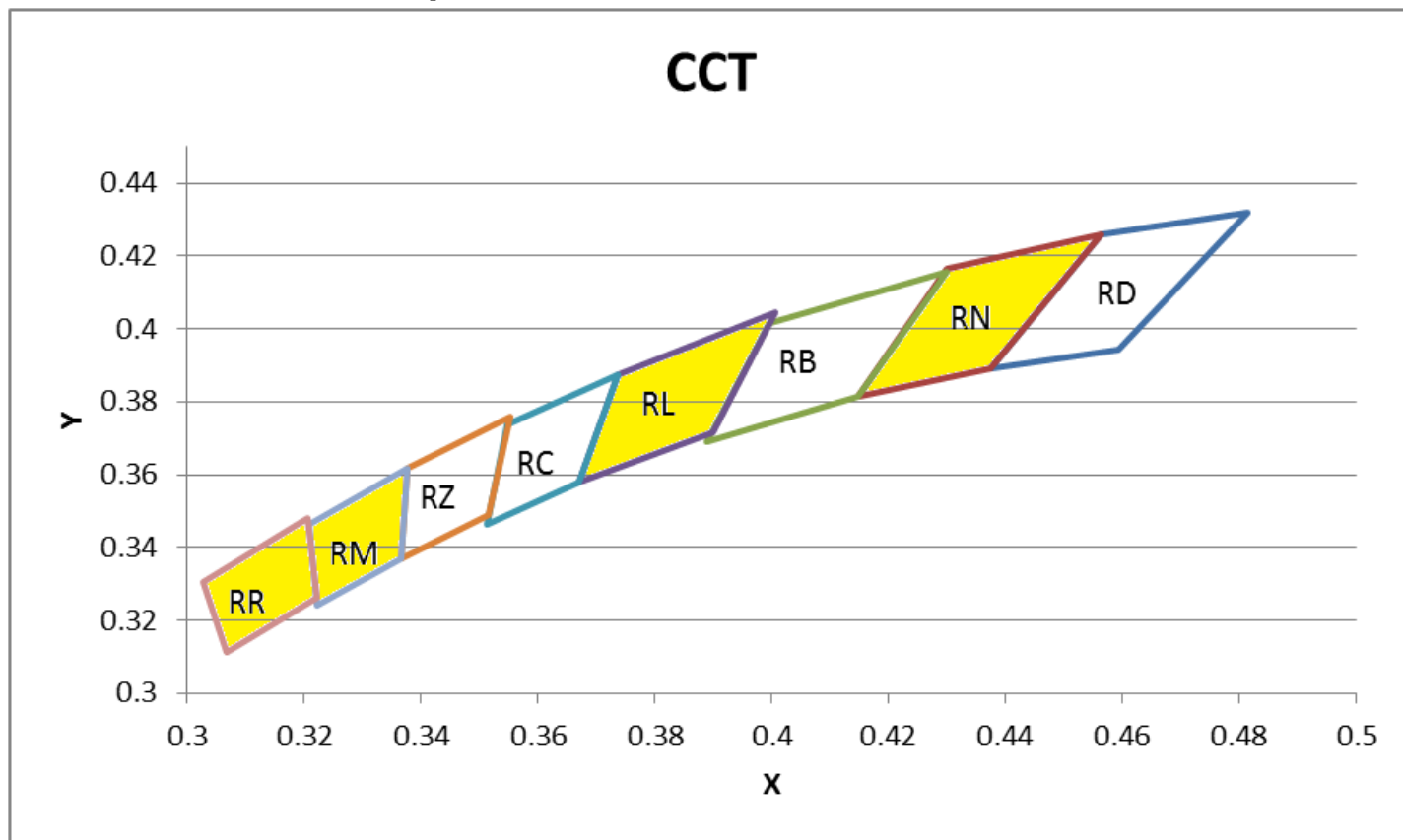
Luminous Flux Φ_V for Cool White @ $I_F=150\text{mA}$

Bin	Min.	Max.	Unit
L1	40	42	lm
L2	42	47	
L3	47	52	
L4	52	57	
L5	57	62	

Note:

Tolerance of measurement of forward voltage: $\pm 0.1\text{V}$ Tolerance of measurement of luminous flux: $\pm 10\%$

Correlated Color Temperature Chart

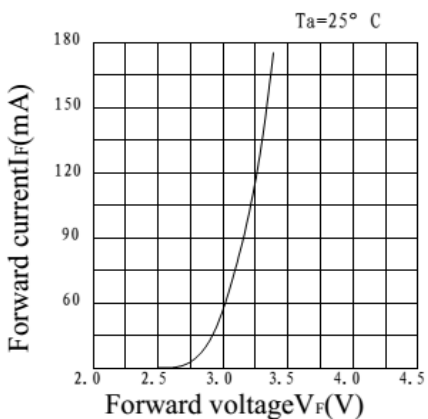


P/N	QBHP686-IWH-CW				QBHP686-IWH-NW		QBHP686-IWH-WW	
CCT Bin	RR		RM		RL		RN	
	X	Y	X	Y	X	Y	X	Y
Chromaticity Coordinates	0.3205	0.3481	0.3376	0.3616	0.4006	0.4044	0.4562	0.4260
	0.3028	0.3304	0.3207	0.3462	0.3736	0.3874	0.4299	0.4165
	0.3068	0.3113	0.3222	0.3243	0.3670	0.3578	0.4147	0.3814
	0.3221	0.3261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

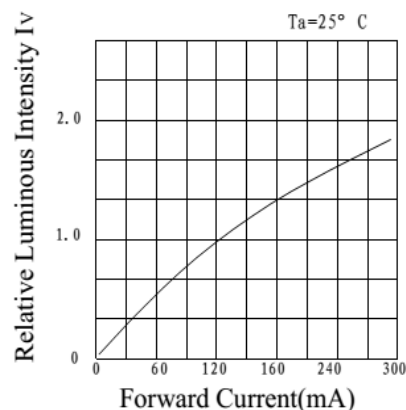
Note:

Tolerance of measurement of color coordinates: ± 0.01

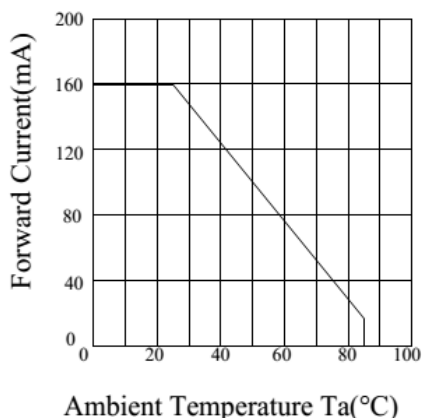
Characteristic Curves



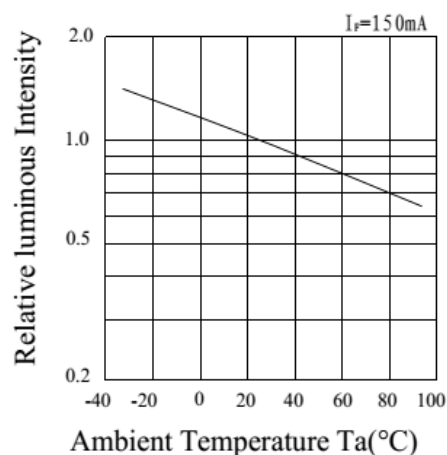
a) FORWARD CURRENT VS. FORWARD VOLTAGE



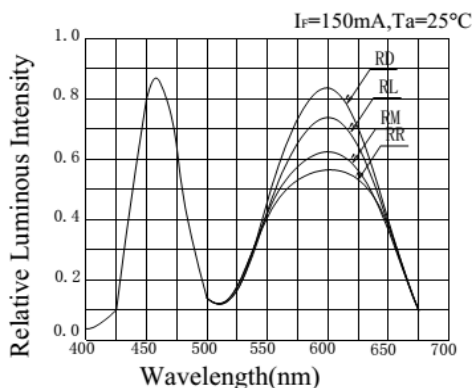
b) RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



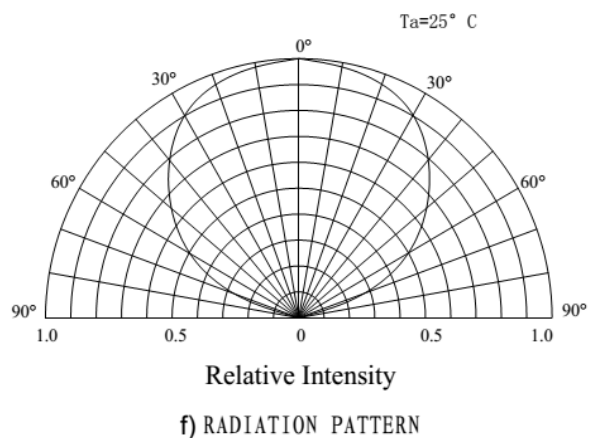
c) FORWARD CURRENT VS. AMBIENT TEMPERATURE



d) RELATIVE INTENSITY VS. AMBIENT TEMPERATURE



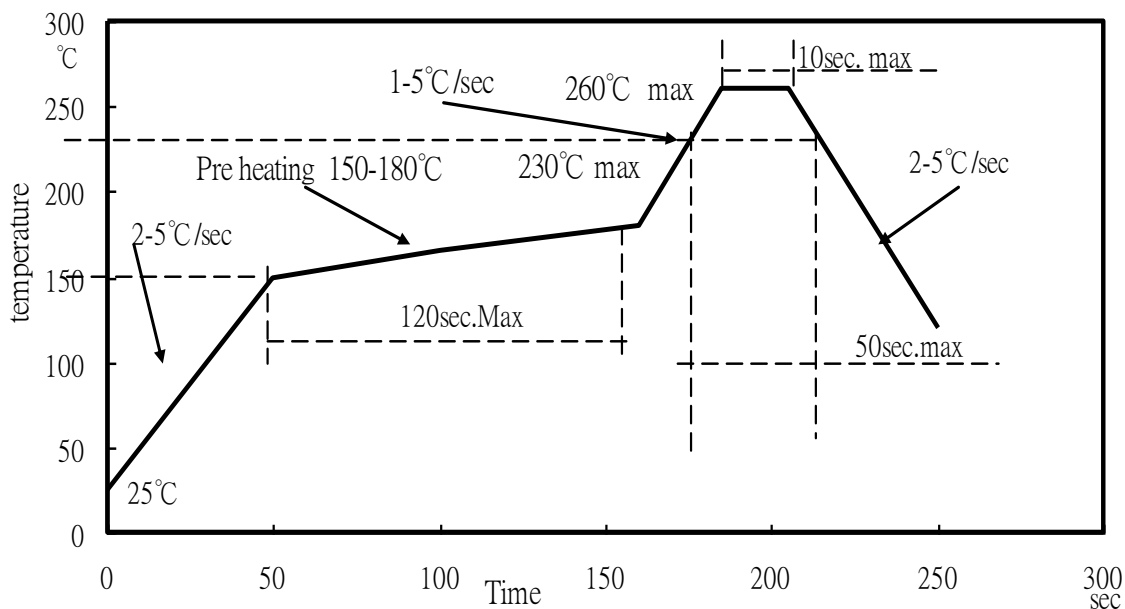
e) RELATIVE INTENSITY VS. WAVELENGTH



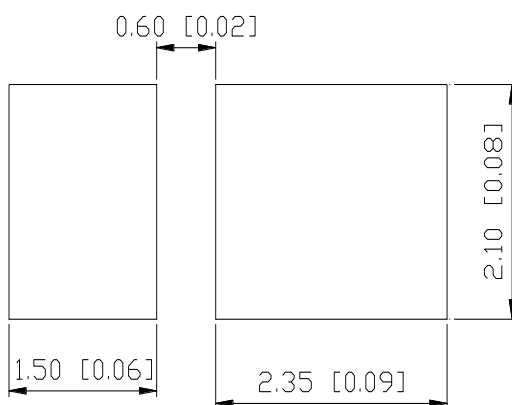
f) RADIATION PATTERN

Solder Profile

Lead-Free soldering Profile



Recommended Pad Layout

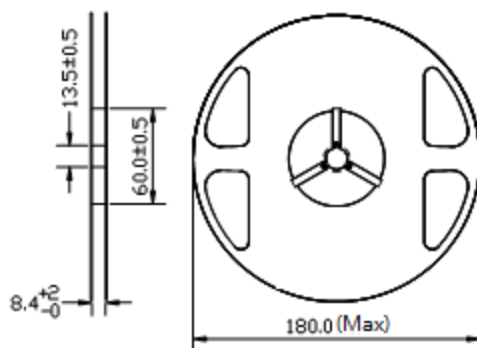


Units: mm

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

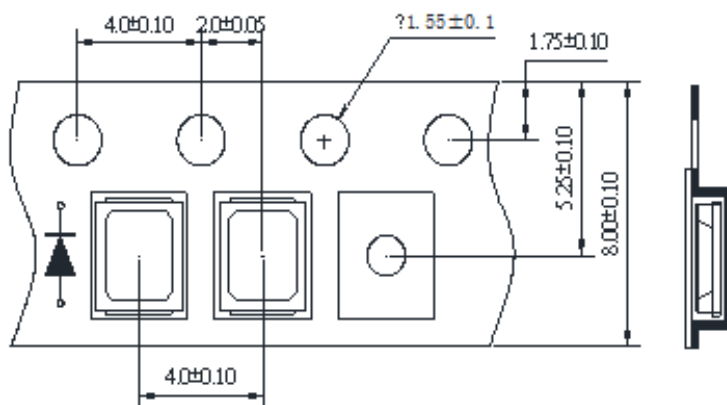
Packing

Reel Dimension:



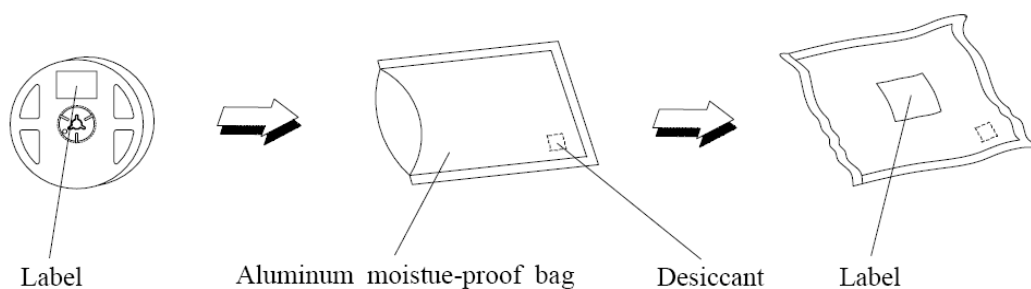
Unit: mm

Tape Dimension:



Unit: mm

Packaging Specifications:



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	Version# 3.0	

Labeling**Part No:** _____**Customer P/N:** _____**Item:** _____**Q'ty:** _____**Vf:** _____**Iv:** _____**Wl:** _____**Date:** _____**Made in China****Ordering Information**

Part #	Orderable Part #	Spec Range	Quantity per reel
QBHP686-IWH-WW	QBHP686-IWH-WW	Iv=45lm typ. @ If=150mA / CCT=3000K typ.	2,000 units
QBHP686-IWH-NW	QBHP686-IWH-NW	Iv=47lm typ. @ If=150mA / CCT=4000K typ.	2,000 units
QBHP686-IWH-CW	QBHP686-IWH-CW	Iv=47lm typ. @ If=150mA / CCT=6020K typ.	2,000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBHP686-IWH	V1.0	1/20/2011
CCT updates	V1.1	3/24/2011
Amend CCT Chart	V1.2	06/08/2011
Updated the part number	V1.3	02/15/2012
Updated format	V1.4	03/08/2012
Information Update	V1.5	08/23/2012
Update spec, drawing and binning	V2.0	10/22/2013
Update dimension drawing tolerance	V2.1	12/10/2013
Update drawing dimension	V3.0	08/04/2017

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.