

QT-Brightek Mid Power Series

0.5W Mid Power 2835 LED

Part No.: QBHP686-S3H Series

**S3 = Deep Red ($\lambda_p=660\text{nm}$, AllnGaP)
H = 150mA**

Product: QBHP686-S3H	Date: March 14 , 2023	Page 1 of 9
	Version# 1.1	

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Introduction

Feature:

- Clear lens
- Package in tape and reel
- 0.5W mid power
- Deep red
- Low thermal resistance
- AlInGaP technology
- Viewing angle: 120 deg typ.

Description:

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

Application:

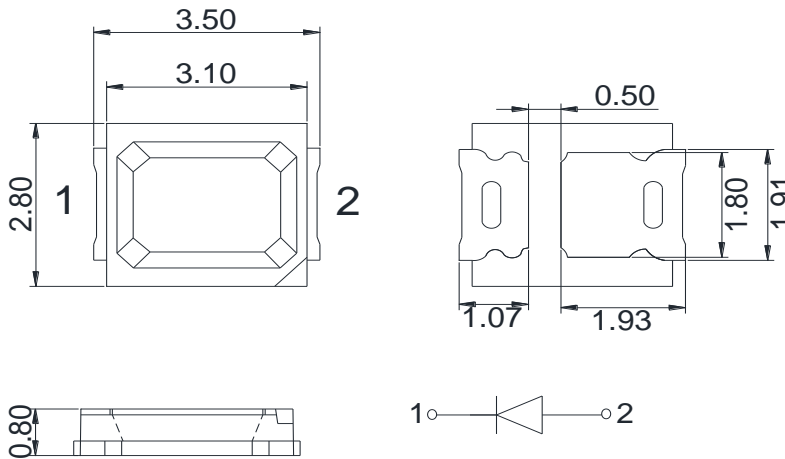
- Horticultural lighting
- Medical device

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)		λ _P (nm)			λ _D (nm)	I _V (mcd)			Φ _V (lm)
			Typ.	Max.	Min.	Typ.	Max.	Typ.	Min.	Typ.	Max.	Typ.
QBHP686-S3H	Deep Red	150	2.5	2.8	648	660	675	644	630	1200	2000	4

Absolute Maximum Rating

Material	P _d (mW)	I _F (mA)	I _{FP} (mA)*	V _R (V)	T _{OP} (°C)	T _{ST} (°C)	T _{SO L} (°C)**
AllnGaP	476	170	125	5	-40 ~ +85	-40 ~ +100	260

*Duty 1/8 @ 1KHz

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

Forward Voltage V_F for AllnGaP @ I_F=150mA

Bin	Min.	Max.	Unit
c	1.9	2.2	V
d	2.2	2.5	
e	2.5	2.8	

Luminous Intensity I_V @ I_F=150mA

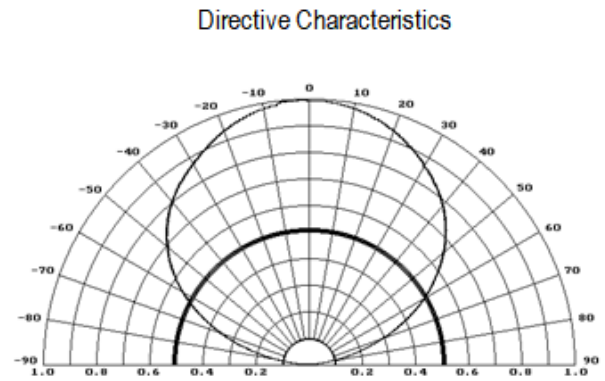
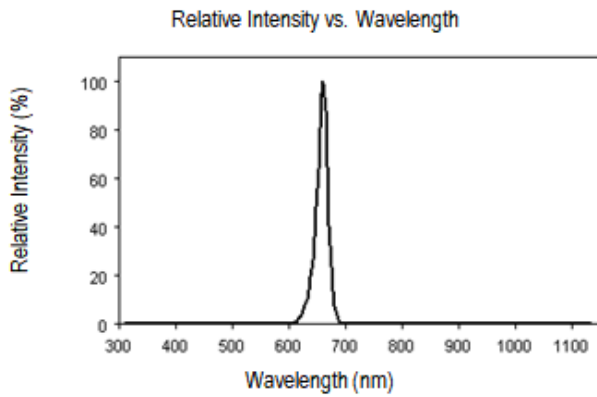
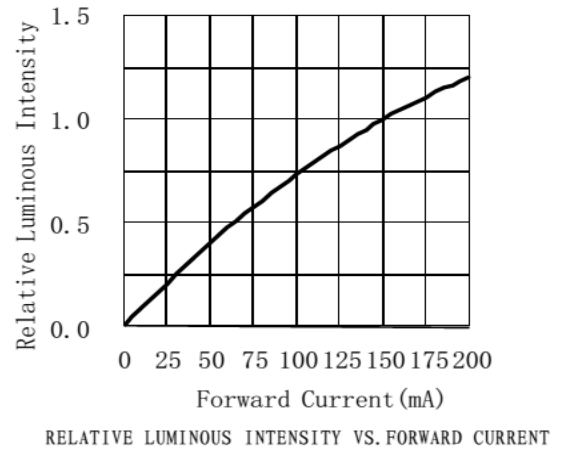
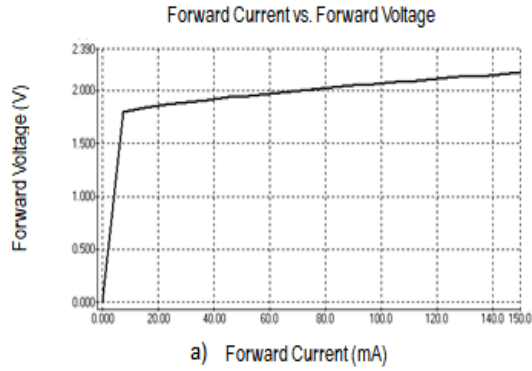
Bin	Min.	Max.	Unit
R	630	800	mcd
S	800	1000	
T	1000	1250	
U	1250	1600	
V	1600	2000	

Dominant Wavelength λ_P for @ I_F=150mA

Bin	Min.	Max.	Unit
1	648	658	nm
2	658	668	
3	668	675	

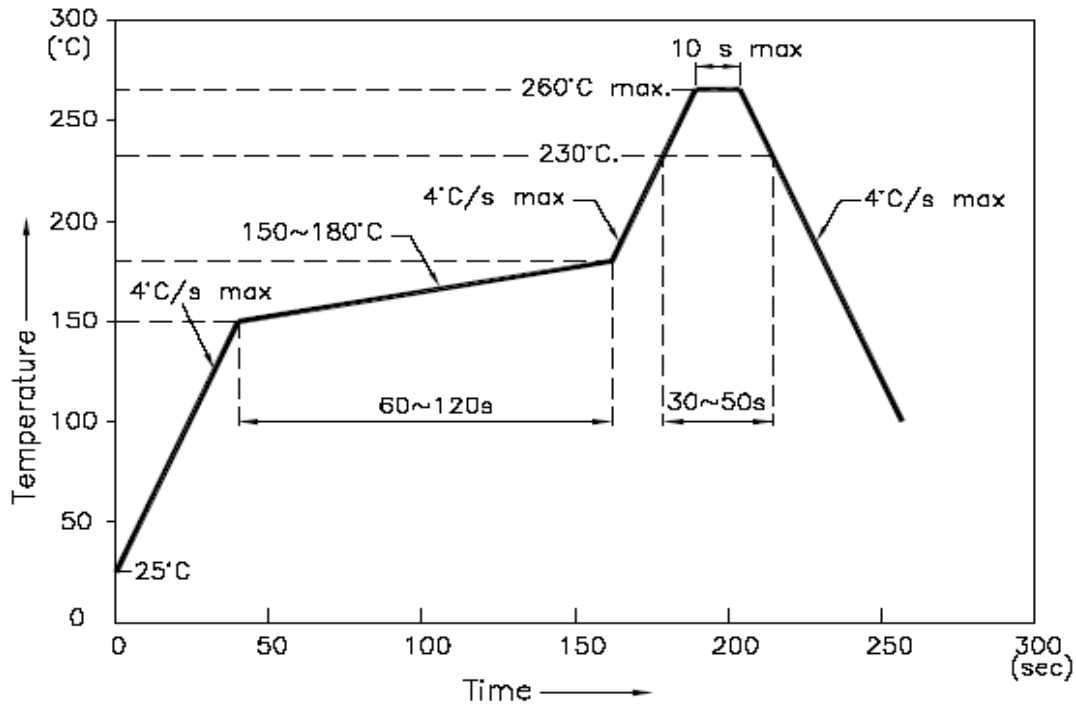
Characteristic Curves

AllInGaP

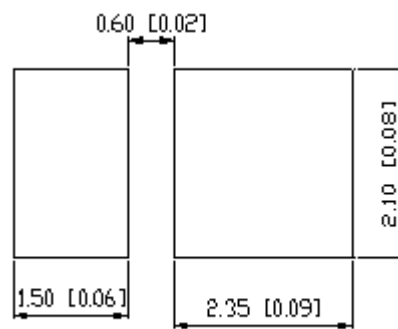


Solder Profile & Footprint

-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



Recommended Pad Layout

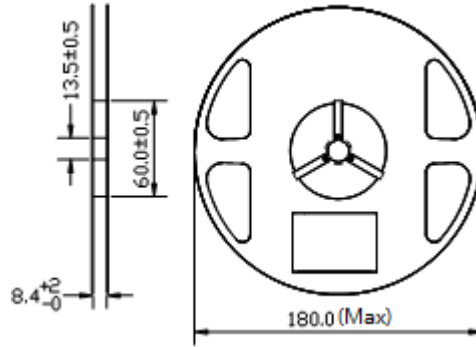


Units: mm

Tolerance: ± 0.2mm

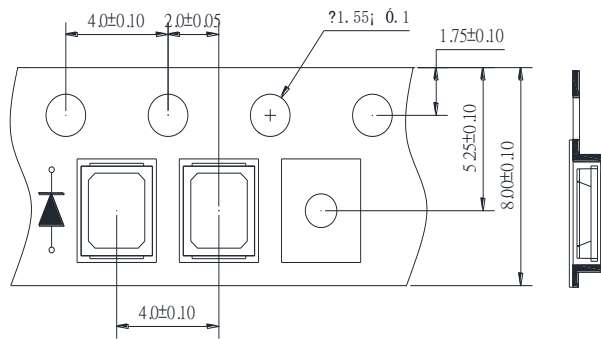
Packing

Reel Dimension:



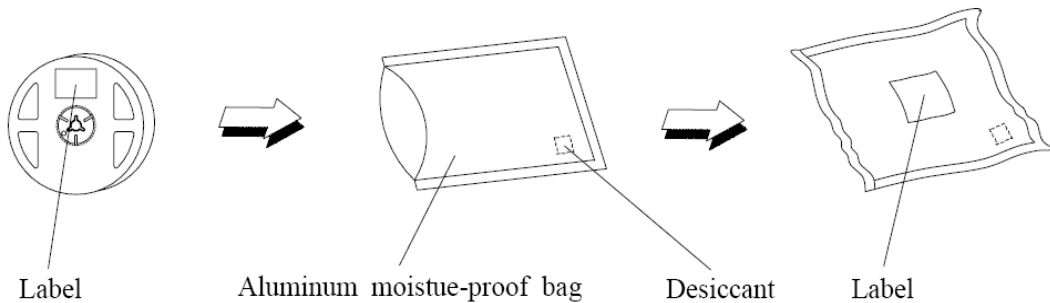
Unit: mm

Tape Dimension:



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-S3H	QBHP686-S3H	Iv=1200mcd typ. @ 150mA / $\lambda_d=644\text{nm typ. ; } \lambda_p=660\text{nm typ.}$	2,000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBHP686-S3H	V1.0	06/11/2019
Update wavelength binning to WLP	V1.1	03/14/2023

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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.