

# **QT-Brightek High Power Series**

## **Mid Power 2835 VCSEL**

**Part No.: QBHP686E-V850L1**

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## Introduction

### Feature:

- Clear lens
- Package in tape and reel
- Mid-power
- Low thermal resistance
- VCSEL 850nm
- ESD Protection
- Viewing Angles 25 Degree

### Description:

The low profile Mid Power VCSEL has height of 0.8mm. Combination of high brightness output and robust package, this device is ideal for Infrared Sensor, medical device and consumer electronic application

### Application:

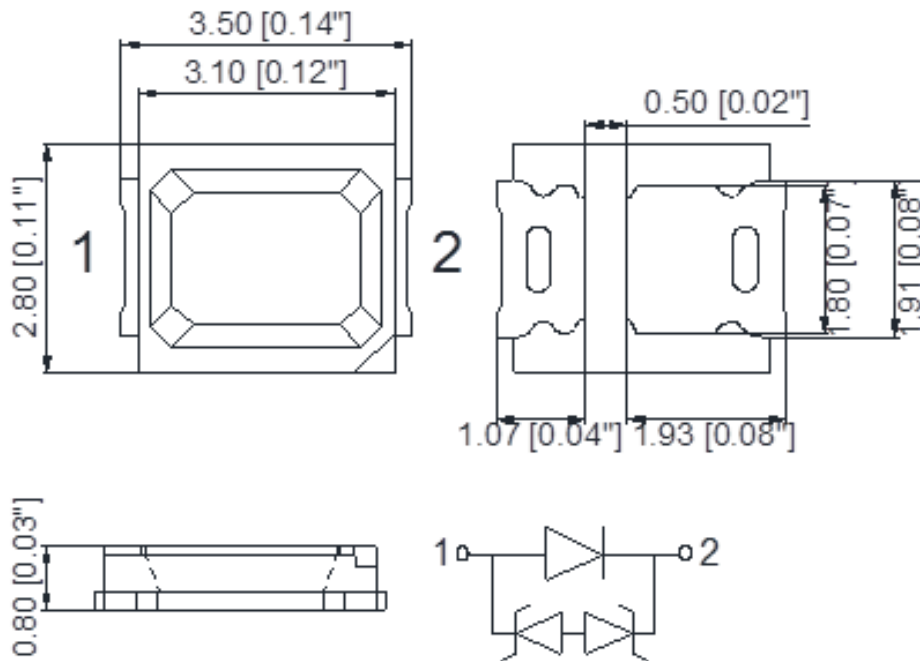
- Infrared Sensor
- Medical device
- Consumer electronics

### 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)		λ <sub>P</sub> (nm)			P <sub>o</sub> (mW)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBHP686E-V850L1	Infrared	200	2.1	2.3	840	850	860	100	180

**Absolute Maximum Rating**

I <sub>F</sub> (mA)	I <sub>R</sub> (uA)@V <sub>R</sub> =5V	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)	T <sub>SOL</sub> (°C)**
200	1	-20 ~ +85	-40 ~ +85	260

\*≤1us pulse width, 1% Duty Cycle

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

**Note:**

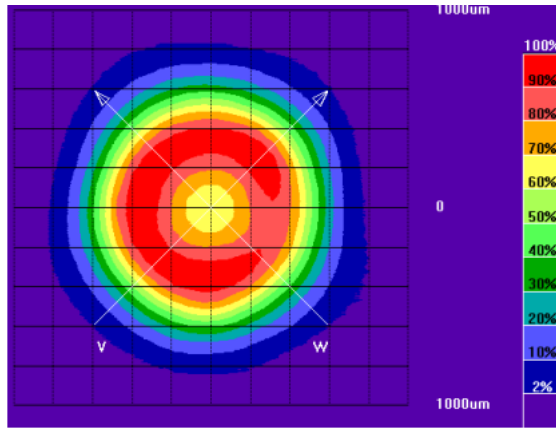
Tolerance of measurement of forward voltage: ±0.1V

Tolerance of measurement of output power: ±15%

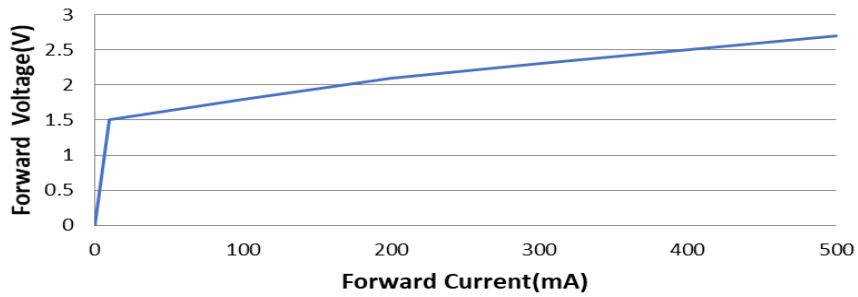
Tolerance of measurement of peak wavelength: ±2nm

## Characteristic Curves

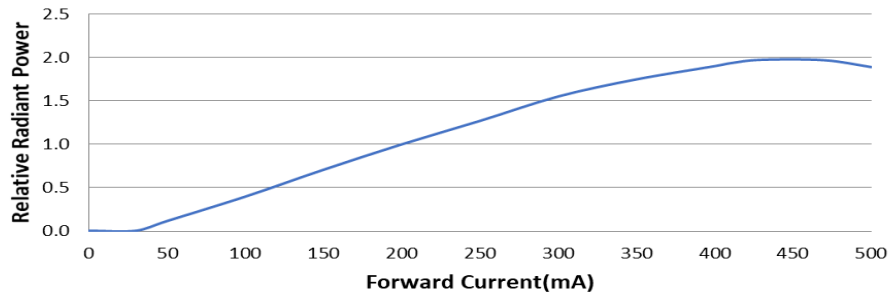
VCSEL 850nm



**Forward Voltage vs. Forward Current**

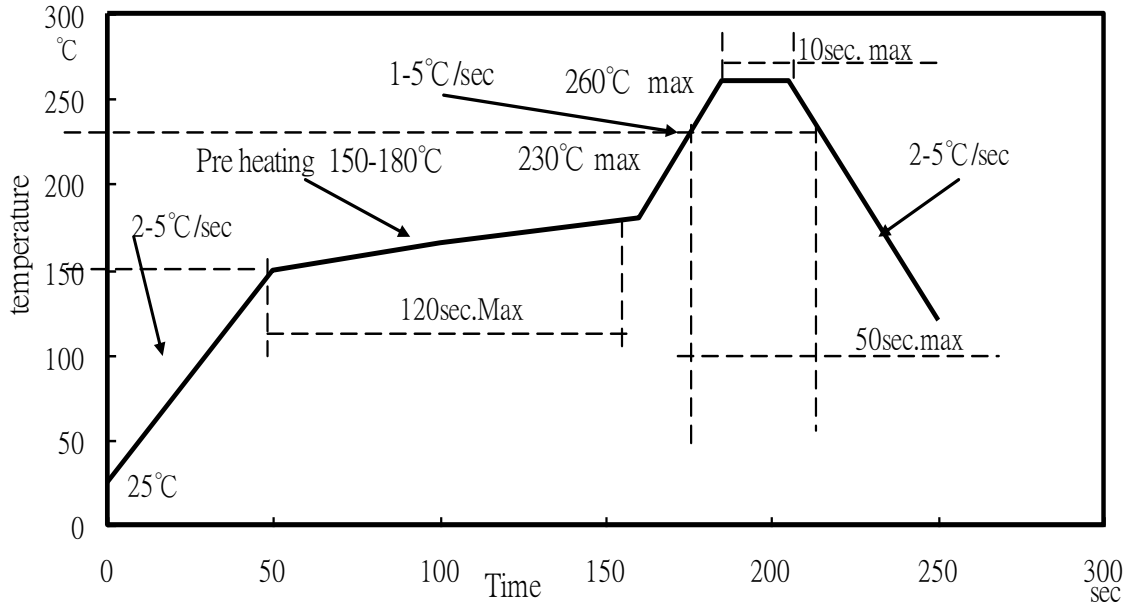


**Relative Radiant Power vs Forward Current**

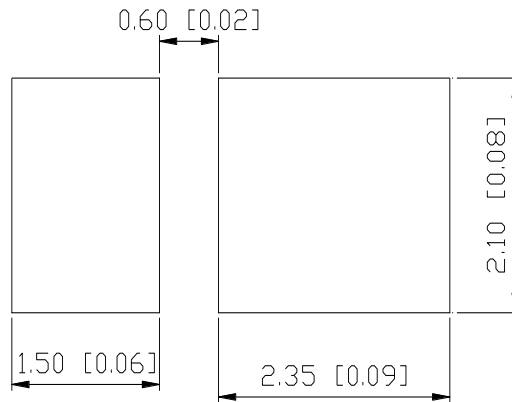


## Solder Profile

### Lead-Free soldering Profile



### Recommended Pad Layout



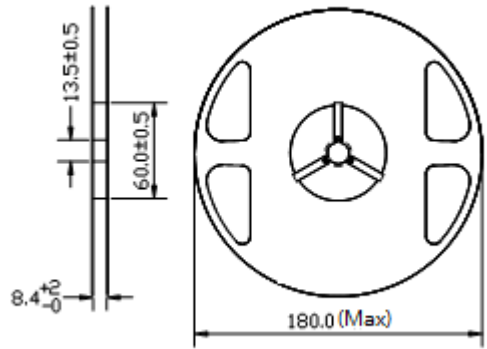
Units: mm

Tolerance: ± 0.2mm

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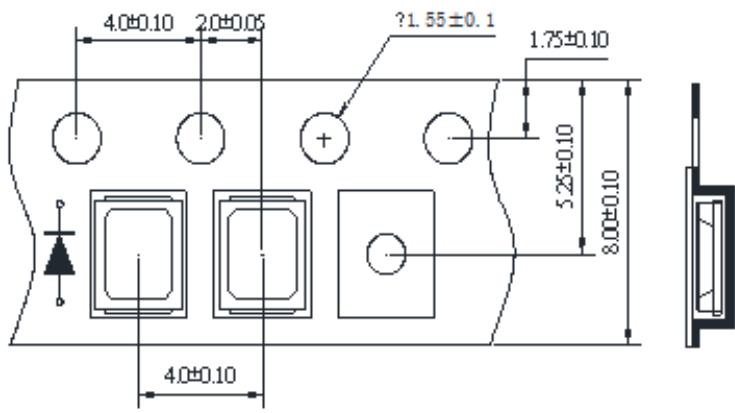
## Packing

Reel Dimension:



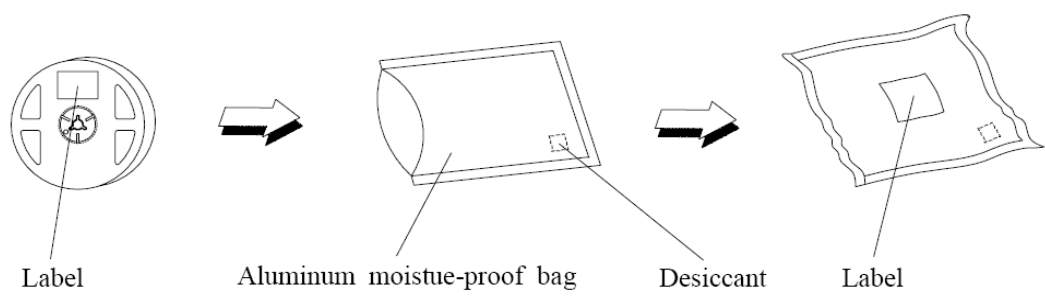
Unit: mm

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
QBHP686E-V850L1	QBHP686E-V850L1	Po=180 typ. mW @ 200mA / WLP=850nm	2,000 units



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## Revision History

Description:	Revision #	Revision Date
New Release of QBHP686E-V850L1	V1.0	02/24/2021



## Disclaimer

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QT-BRIGHTTEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of QT-BRIGHTTEK. As used herein:

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.

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