

## **QT-Brightek High Power Series**

### **10W High Power UV LED**

**Part No.: QBHP6868E-UVXXXK**

**XXX: UV Wavelength  
K: Single Chip**

|                           |                      |             |
|---------------------------|----------------------|-------------|
| Product: QBHP6868E-UVXXXK | Date: March 25, 2016 | Page 1 of 9 |
|                           | Version# 1.1         |             |

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## Introduction

### Feature:

- 10W High Power UV LED
- Glass lens
- Packed in tape and reel
- ESD rating: 8KV (HBM)
- Viewing Angle: 60° typ.

### Description:

This 10W high power UV LED has compact size of 6.8 x 6.8mm. It is ideal for curing or any type of sterilization application.

### Application:

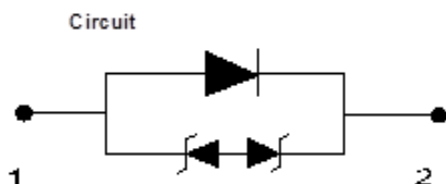
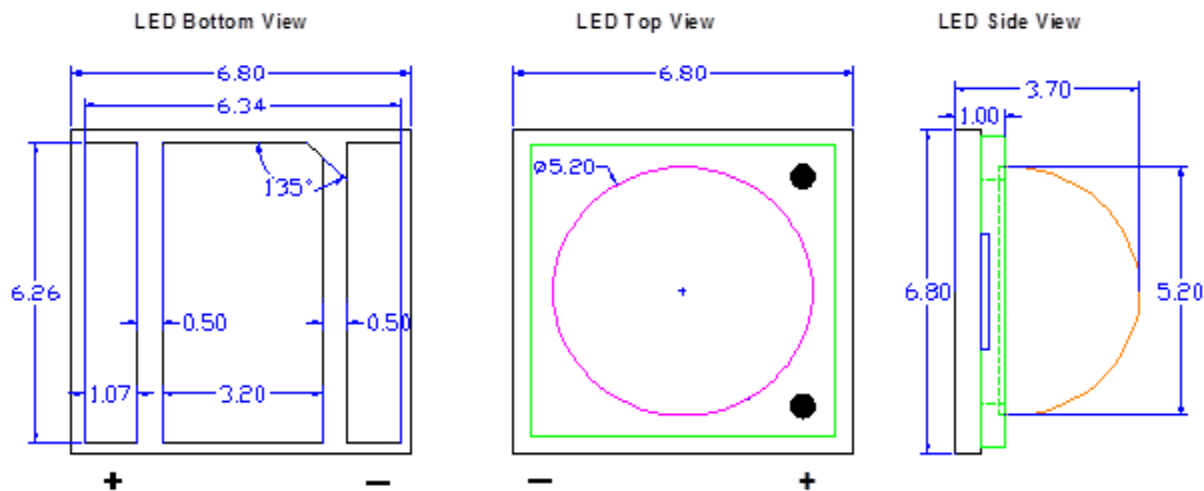
- UV curing
- UV marking
- Purification
- Inspection
- Sterilization and Disinfection

### Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



## Dimensions:



Units: mm / tolerance = +/-0.1mm

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

| Part Number      | Color | I <sub>F</sub> (mA) | V <sub>F</sub> (V) |      |      | λ <sub>p</sub> (nm) |      |      | P <sub>o</sub> (mW) |      |      |
|------------------|-------|---------------------|--------------------|------|------|---------------------|------|------|---------------------|------|------|
|                  |       |                     | Min.               | Typ. | Max. | Min.                | Typ. | Max. | Min.                | Typ. | Max. |
| QBHP6868E-UV365K | UV    | 2000                | 3.4                | 3.8  | 4.2  | 365                 | 367  | 370  | 1000                | 1200 | 1400 |
| QBHP6868E-UV385K | UV    | 2000                | 3.4                | 3.8  | 4.2  | 380                 | 385  | 390  | 1400                | 1600 | 1800 |
| QBHP6868E-UV395K | UV    | 2000                | 3.4                | 3.8  | 4.2  | 390                 | 395  | 400  | 1400                | 1600 | 1800 |

**Absolute Maximum Rating**

| Material | P <sub>d</sub> (W) | I <sub>F</sub> (mA) | I <sub>FP</sub> (mA)* | V <sub>R</sub> (V) | T <sub>OP</sub> (°C) | T <sub>ST</sub> (°C) | T <sub>SO L</sub> (°C) |
|----------|--------------------|---------------------|-----------------------|--------------------|----------------------|----------------------|------------------------|
| InGaN    | 8.4                | 2000                | 2500                  | 5                  | -40 to +80           | -40 to +100          | 260                    |

\*Duty 1/10 @ 10ms Pulse Width

**Forward Voltage V<sub>F</sub> @ I<sub>F</sub>=2000mA**

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| A1  | 3.4  | 3.8  | V    |
| A2  | 3.8  | 4.2  |      |

**Radiometric Power P<sub>o</sub> for UV365K @ I<sub>F</sub>=2000mA**

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| P10 | 1000 | 1100 | mW   |
| P11 | 1100 | 1200 |      |
| P12 | 1200 | 1300 |      |
| P13 | 1300 | 1400 |      |

**Radiometric Power P<sub>o</sub> for UV385K & UV395K @ I<sub>F</sub>=2000mA**

| Bin | Min. | Max. | Unit |
|-----|------|------|------|
| P15 | 1400 | 1500 | mW   |
| P16 | 1500 | 1600 |      |
| P17 | 1600 | 1700 |      |
| P18 | 1700 | 1800 |      |

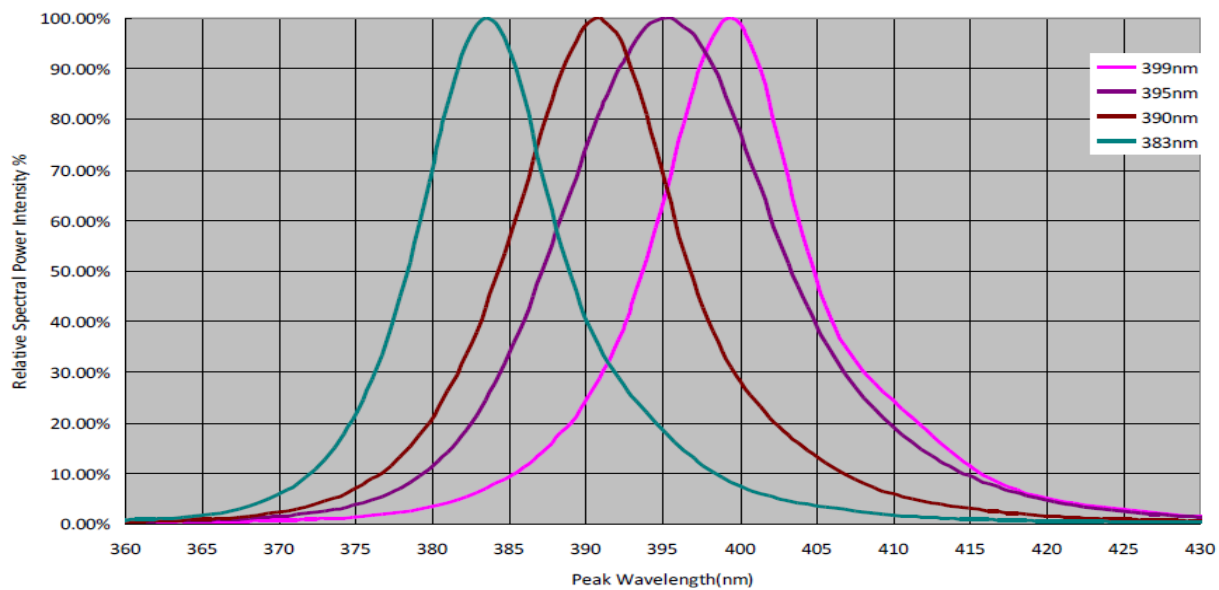
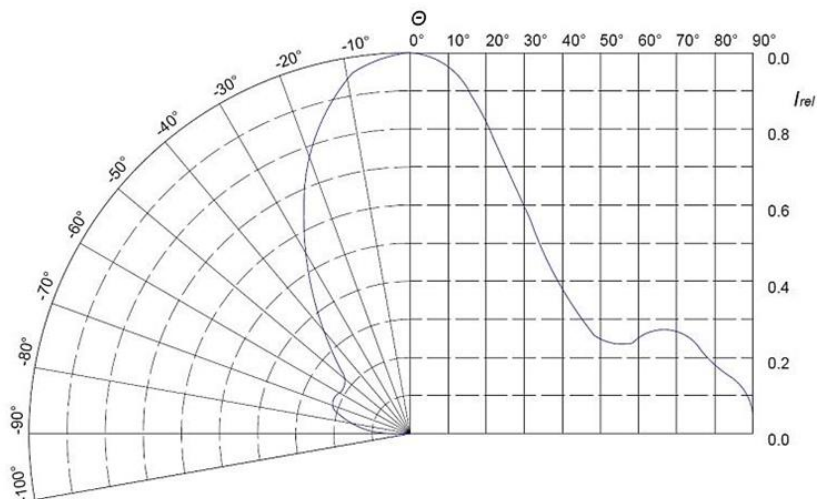
Tolerance of measurement of forward voltage: ±0.1V

Tolerance of measurement of Radiometric Power: ±15%

Tolerance of measurement of Peak wavelength: ±2nm

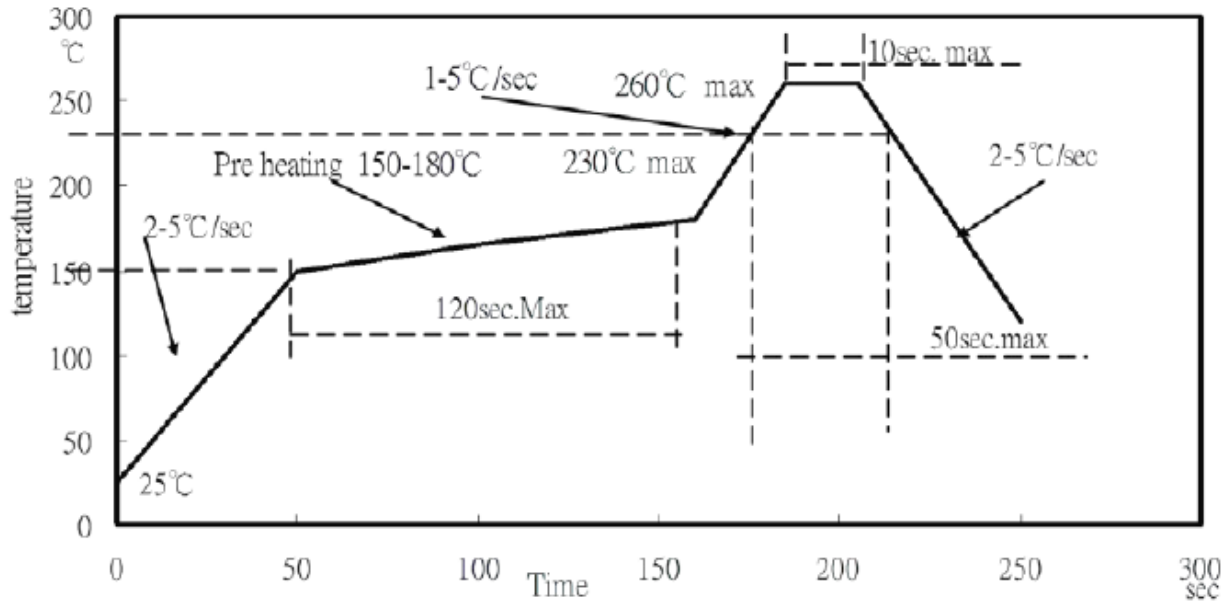
**Characteristic Curves**

Typical Spatial Distribution



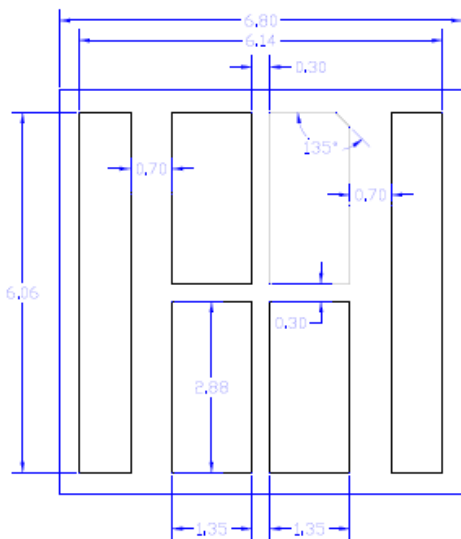
## IR Reflow Soldering Profile

### Lead Free solder

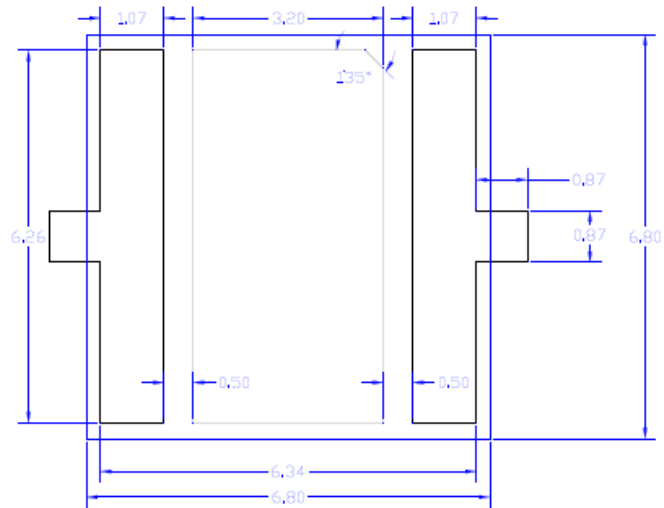


### Recommended Soldering Pad:

**RECOMMENDED STENCIL PATTERN  
(HATCHED AREA IS OPENING)**



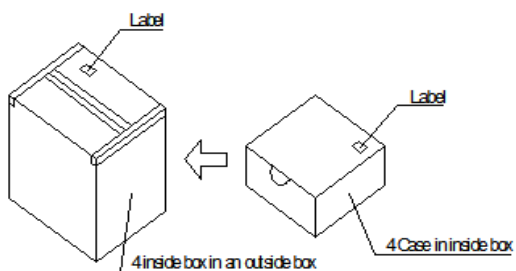
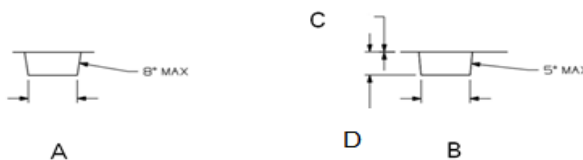
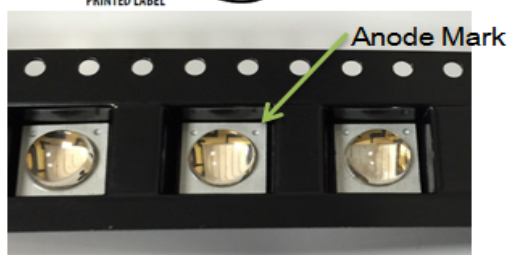
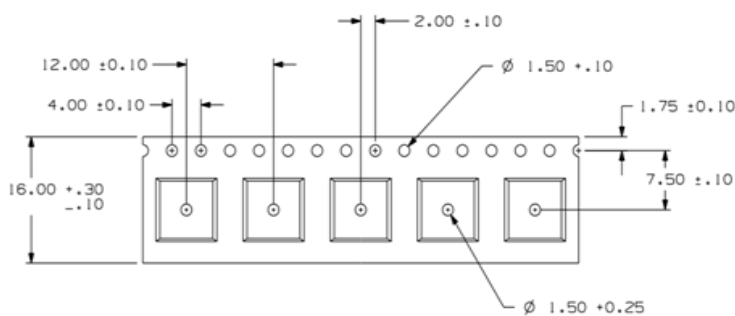
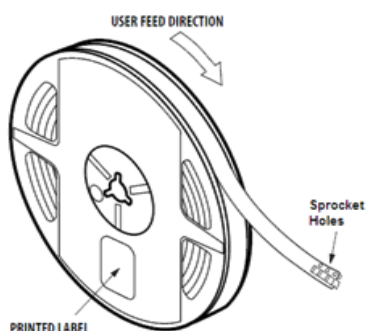
**RECOMMENDED PCB SOLDER PAD**



Unit: mm

## Packing

### Tape and Reel:



| Item | Dimension | Tolerance | Unit |
|------|-----------|-----------|------|
| A    | 7.35      | ±0.10     | mm   |
| B    | 7.25      | ±0.10     | mm   |
| C    | 0.33      | ±0.02     | mm   |
| D    | 4.35      | ±0.10     | mm   |

Unit: mm

## Labeling



Part No: \_\_\_\_\_

Customer P/N: \_\_\_\_\_

Item: \_\_\_\_\_

Q'ty: \_\_\_\_\_

Vf: \_\_\_\_\_



Iv: \_\_\_\_\_

WI: \_\_\_\_\_

Date: \_\_\_\_\_

**Made in Taiwan**

**Caution**

|   |  |
|---|--|
|  |  <b>CAUTION</b>   |
|   | <ul style="list-style-type: none"> <li>• This UV LED during operation radiates intense UV light.</li> <li>• Do not look directly into the UV light during operation of the device. This can be harmful to the eyes even for brief period due to the intense UV light.</li> <li>• If viewing the UV light is necessary, please use UV filtered glasses to avoid damage by the UV light.</li> <li>• If the UV LED in your product might be viewed directly, please affix a caution label to your product to that effect.</li> </ul> <p style="text-align: center;"><b>Avoid direct eye exposure to UV light</b><br/><b>Keep out of reach of children</b></p> |

**Ordering Information**

| Part #           | Orderable Part # | Spec Range   | Quantity per reel |
|------------------|------------------|--|-------------------|
| QBHP6868E-UV365K | QBHP6868E-UV365K | Po=1200mW typ. @ I <sub>F</sub> =2000mA,<br>λ <sub>p</sub> =365nm to 370nm | 350 units         |
| QBHP6868E-UV385K | QBHP6868E-UV385K | Po=1600mW typ. @ I <sub>F</sub> =2000mA,<br>λ <sub>p</sub> =380nm to 390nm | 350 units         |
| QBHP6868E-UV395K | QBHP6868E-UV395K | Po=1600mW typ. @ I <sub>F</sub> =2000mA,<br>λ <sub>p</sub> =390nm to 400nm | 350 units         |



## Revision History

| Description:                    | Revision # | Revision Date |
|---------------------------------|------------|---------------|
| New Release of QBHP6868E-UVXXXK | V1.0       | 01/29/2016    |
| Add measurement tolerance info  | V1.1       | 03/25/2016    |
|                                 |            |               |
|                                 |            |               |
|                                 |            |               |

## 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.