

QT-Brightek PLCC Series

3528 PLCC-2 VCSEL

**Part No.: QBLP670E-VXXXXA
XXX = 680nm, 850nm, or 940nm**

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Introduction

Feature:

- Packaged in tape and reel
- Ultra bright reflector type PLCC2 LED
- VCSEL 680nm, 850nm & 940nm
- With ESD protection diode
- 680nm: Viewing Angles 25 Degree
- 850nm: Viewing Angles 36 Degree
- 940nm: Viewing Angles 18 Degree

Description:

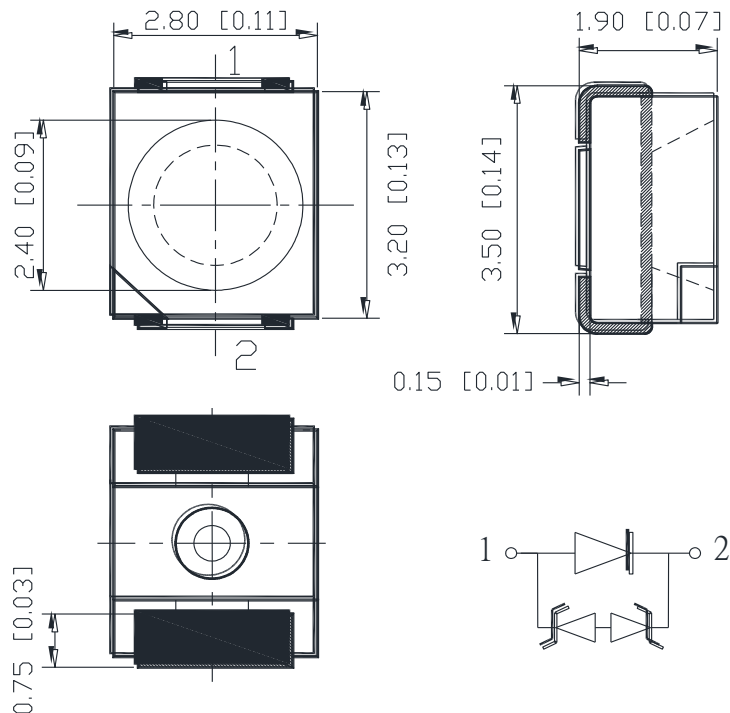
These ultra bright reflector type PLCC2 have a height profile of 1.90mm. Combination of high brightness output and robust package, this device is ideal for Infrared Sensor, medical device and consumer electronic application

Application:

- Infrared Sensor
- Medical device
- Architecture 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) | | λ _D (nm) | | | P _o (mW) | |
|----------------|----------|---------------------|--------------------|------|---------------------|------|------|---------------------|------|
| | | | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. |
| QBLP670E-V680A | Infrared | 9 | 2.4 | 2.8 | 670 | 680 | 690 | 2.5 | 4 |
| QBLP670E-V850A | Infrared | 9 | 2.4 | 2.8 | 840 | 850 | 860 | 3.5 | 4.5 |
| QBLP670E-V940A | Infrared | 9 | 1.9 | 2.1 | 930 | 940 | 950 | 4.5 | 6 |

Absolute Maximum Rating

| λ _P (nm) | I _F (mA) | I _{PF} (mA)* | I _r (uA) @ V _R =5V | T _{OP} (°C) | T _{ST} (°C) | T _{SOL} (°C)** |
|---------------------|---------------------|-----------------------|--|----------------------|----------------------|-------------------------|
| 680 | 9 | 12 | 1 | -20 ~ +70 | -40 ~ +85 | 260 |
| 850 | 12 | - | 1 | -20 ~ +85 | -40 ~ +85 | 260 |
| 940 | 12 | - | 1 | -20 ~ +85 | -40 ~ +85 | 260 |

*≤1us pulse width, 1% Duty Cycle

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

Note:

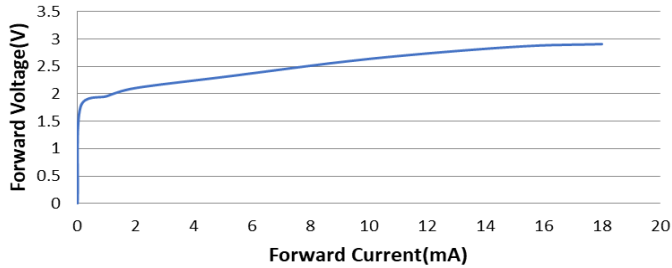
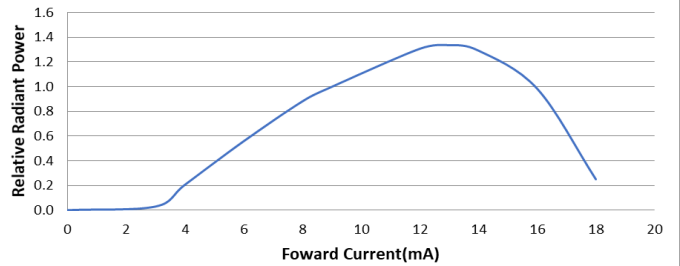
Tolerance of measurement of forward voltage: ±0.1V

Tolerance of measurement of luminous intensity: ±15%

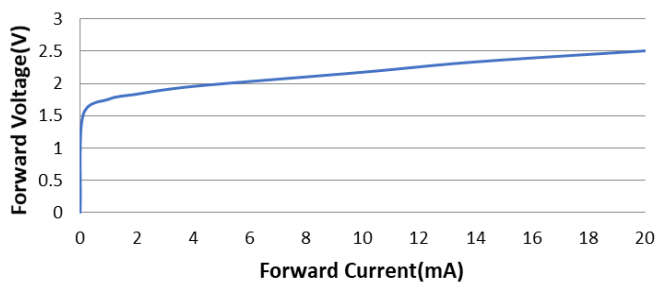
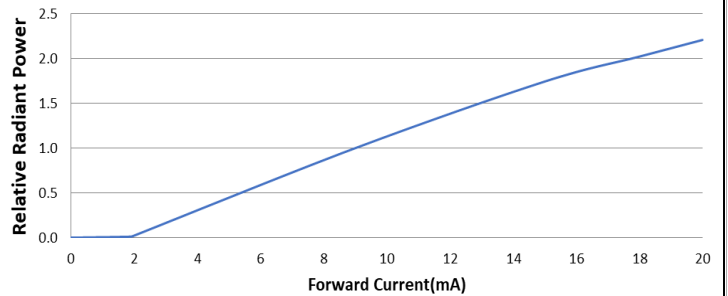
Tolerance of measurement of dominant wavelength: ±2nm

Characteristic Curves

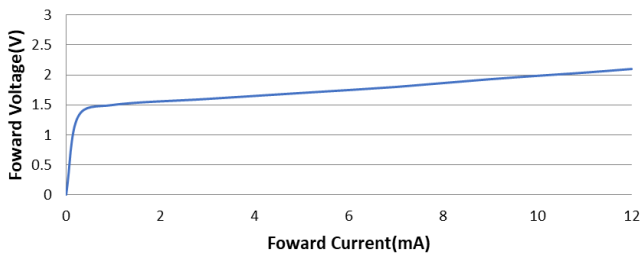
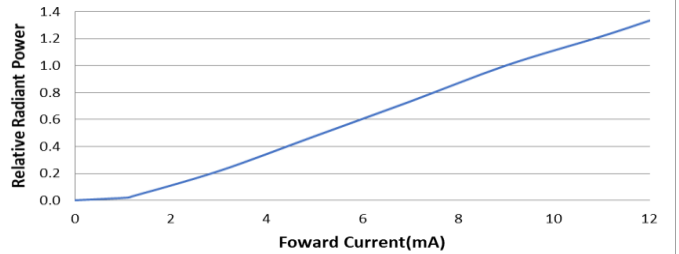
VCSEL 680nm

Forward Voltage vs. Forward Current**Relative Radiant Power vs Forward Current**

VCSEL 850nm

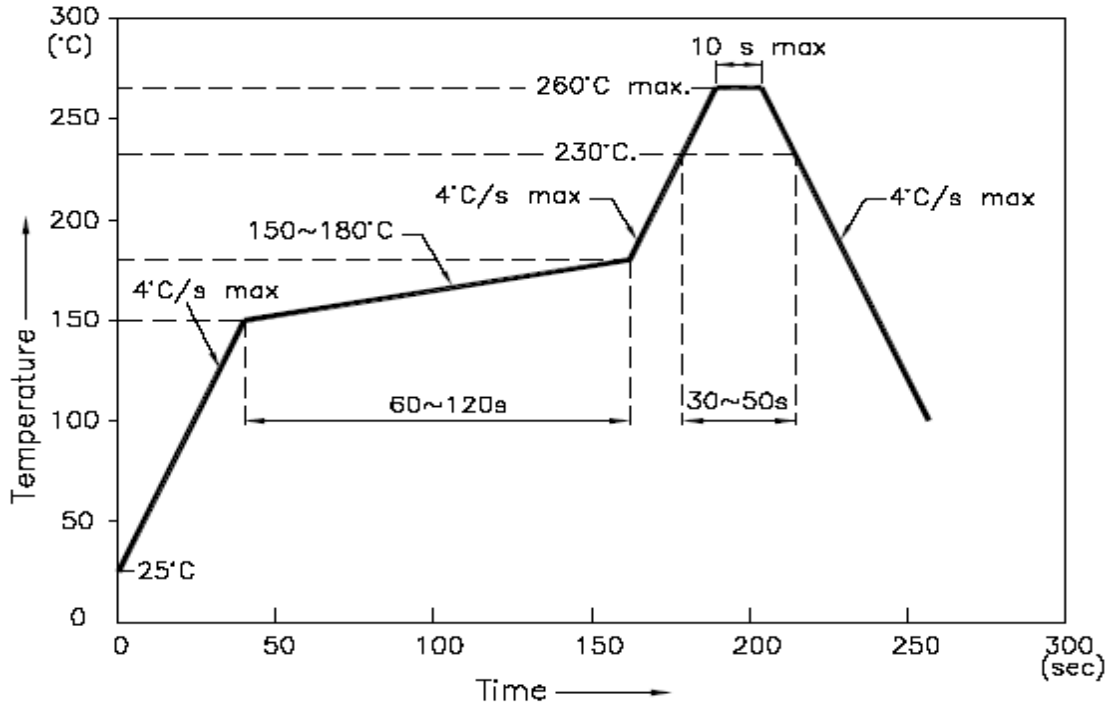
Forward Voltage vs. Forward Current**Relative Radiant Power vs Forward Current**

VCSEL 940nm

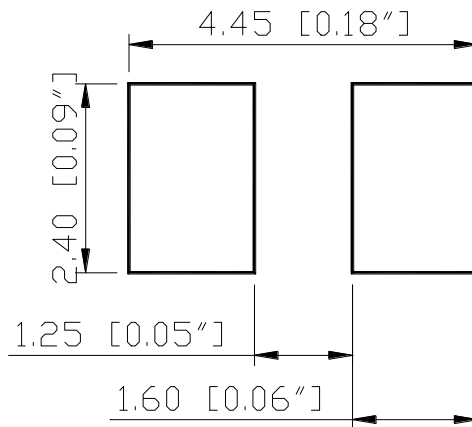
Forward Voltage vs. Forward Current**Relative Radiant Power vs Forward Current**

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

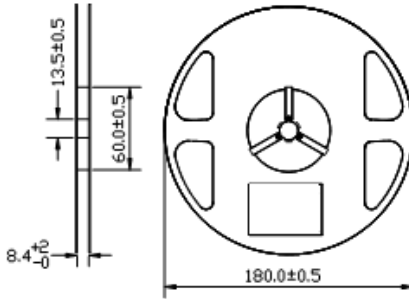


Units: mm

Tolerance: ± 0.2mm

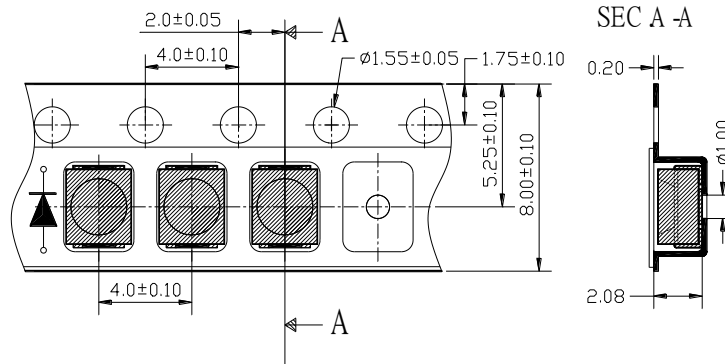
Packing

Reel Dimension:



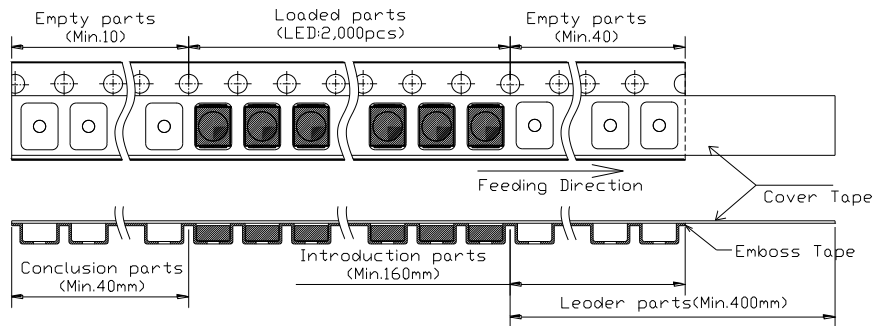
Unit: mm

Tape Dimension:

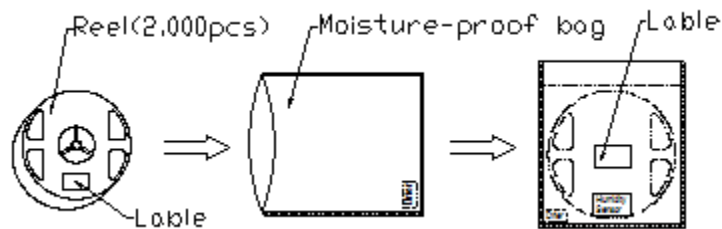


Unit: mm

Arrangement of Tape:



Packaging Specifications:



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 |
|----------------|------------------|----------------------------------|-------------------|
| QBLP670E-V680A | QBLP670E-V680A | Po=4 mW typ. @ 9mA / WLP=680nm | 2,000 units |
| QBLP670E-V850A | QBLP670E-V850A | Po=4.5 mW typ. @ 9mA / WLP=850nm | 2,000 units |
| QBLP670E-V940A | QBLP670E-V940A | Po=6 mW typ. @ 9mA / WLP=940nm | 2,000 units |

Revision History

| Description: | Revision # | Revision Date |
|--------------------------------|------------|---------------|
| New Release of QBLP670E-VXXXXA | V1.0 | 02/23/2021 |
| | | |
| | | |
| | | |

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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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|--------------------------|-------------------------|-------------|
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| | Version# 1.0 | |