QT-Brightek High Power Series

1.0 W High Power IR LED

Part No.: QBHP684-IR1XU

U = 350mA
1 = 940nm
X = Viewing Angle (X=A:60° ; X=B:120°)
# Table of Contents

- **Introduction** ........................................................................................................................................ 3
- **Electrical / Optical Characteristic (Ta=25 °C)** ...................................................................................... 4
- **Absolute Maximum Rating** .................................................................................................................. 4
- **Characteristic Curves** ......................................................................................................................... 5
- **IR Reflow Soldering Profile** ................................................................................................................ 6
- **Packing** ............................................................................................................................................... 7
- **Labeling** ............................................................................................................................................ 8
- **Ordering Information** .......................................................................................................................... 8
- **Revision History** .................................................................................................................................. 9
- **Disclaimer** .......................................................................................................................................... 9

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Product: QBHP684-IR1XU                       1.0W High Power IR LED ...

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Introduction

Feature:
- 1W High Bright IR LED
- Packed in tape and reel
- High radiant power output
- Viewing Angle 60° typ. (QBHP684-IR1AU)
- Viewing Angle 120° typ. (QBHP684-IR1BU)

Description:
This 1W high power IR LED has compact size of 3.5 x 3.5mm. It is ideal for both infrared sensing applications.

Application:
- Data transmission
- Sensing
- Remote control

Certification & Compliance:
- TS16949
- ISO9001
- RoHS Compliant

Outline Dimensions:
Units: mm / tolerance = +/−0.2mm

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

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Color</th>
<th>$I_F$ (mA)</th>
<th>$V_F$ (V)</th>
<th>$\lambda_p$ (nm)</th>
<th>$P_O$ (mW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QBHP684-IR1AU</td>
<td>Infrared</td>
<td>350</td>
<td>1.3</td>
<td>1.7</td>
<td>2.2</td>
</tr>
<tr>
<td>QBHP684-IR1BU</td>
<td>Infrared</td>
<td>350</td>
<td>1.3</td>
<td>1.7</td>
<td>2.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>$P_d$ (W)</th>
<th>$I_F$ (mA)</th>
<th>$I_{FP}$ (mA)</th>
<th>$V_R$ (V)</th>
<th>$T_{OP}$ (°C)</th>
<th>$T_{ST}$ (°C)</th>
<th>$T_{SOL}$ (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.68</td>
<td>700</td>
<td>1000</td>
<td>5</td>
<td>-40 to +85</td>
<td>-40 to +100</td>
<td>260</td>
</tr>
</tbody>
</table>

### Absolute Maximum Rating

### Radiometric Power $P_O$ @ $I_F=350mA$

<table>
<thead>
<tr>
<th>Bin</th>
<th>Min.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>P10</td>
<td>100</td>
<td>150</td>
<td>mLW</td>
</tr>
<tr>
<td>P15</td>
<td>150</td>
<td>200</td>
<td>mLW</td>
</tr>
<tr>
<td>P25</td>
<td>200</td>
<td>250</td>
<td>mLW</td>
</tr>
</tbody>
</table>

Tolerance of measurement of forward voltage: ±0.1V
Tolerance of measurement of Radiometric Power: ±15%
Tolerance of measurement of Peak wavelength: ±2nm
Characteristic Curves

Relative Spectral Power Distribution

Forward Current vs. Forward Voltage (Ta=25°C)

Relative Radiant Flux vs. Forward Current (Ta=25°C)

60°

120°
IR Reflow Soldering Profile

![Temperature vs. Time Graph]

**Recommended Soldering Pad:**

**Unit: mm**
Packing

Tape and Reel:

1. 10 sprocket hole pitch cumulative tolerance ±0.20.
2. Carrier camber is within 1 mm in 250 mm.
4. All dimensions meet EIA-481-D requirements.
5. Thickness: 0.30±0.05 mm.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>12.00±0.30</td>
</tr>
<tr>
<td>A0</td>
<td>3.67±0.10</td>
</tr>
<tr>
<td>B0</td>
<td>3.60±0.10</td>
</tr>
<tr>
<td>K0</td>
<td>2.20±0.10</td>
</tr>
</tbody>
</table>

User Feed Direction

Unit: mm
Labeling

![Labeling Diagram]

Ordering Information

<table>
<thead>
<tr>
<th>Part #</th>
<th>Orderable Part #</th>
<th>Spec Range</th>
<th>Quantity per reel</th>
</tr>
</thead>
<tbody>
<tr>
<td>QBHP684-IR1AU</td>
<td>QBHP684-IR1AU</td>
<td>$P_o=200,\text{mW}\text{ typ.}, \lambda_P=940\text{nm}\text{ typ.}@I_F=350\text{mA}, VA=60^\circ$</td>
<td>500</td>
</tr>
<tr>
<td>QBHP684-IR1BU</td>
<td>QBHP684-IR1BU</td>
<td>$P_o=200,\text{mW}\text{ typ.}, \lambda_P=940\text{nm}\text{ typ.}@I_F=350\text{mA}, VA=120^\circ$</td>
<td>1000</td>
</tr>
</tbody>
</table>
Revision History

<table>
<thead>
<tr>
<th>Description</th>
<th>Revision #</th>
<th>Revision Date</th>
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</thead>
<tbody>
<tr>
<td>New Release of QBHP684-IR1XU</td>
<td>V1.0</td>
<td>03/24/2016</td>
</tr>
<tr>
<td>Update drawing dimension</td>
<td>V1.1</td>
<td>09/08/2016</td>
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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.