# 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

**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:**

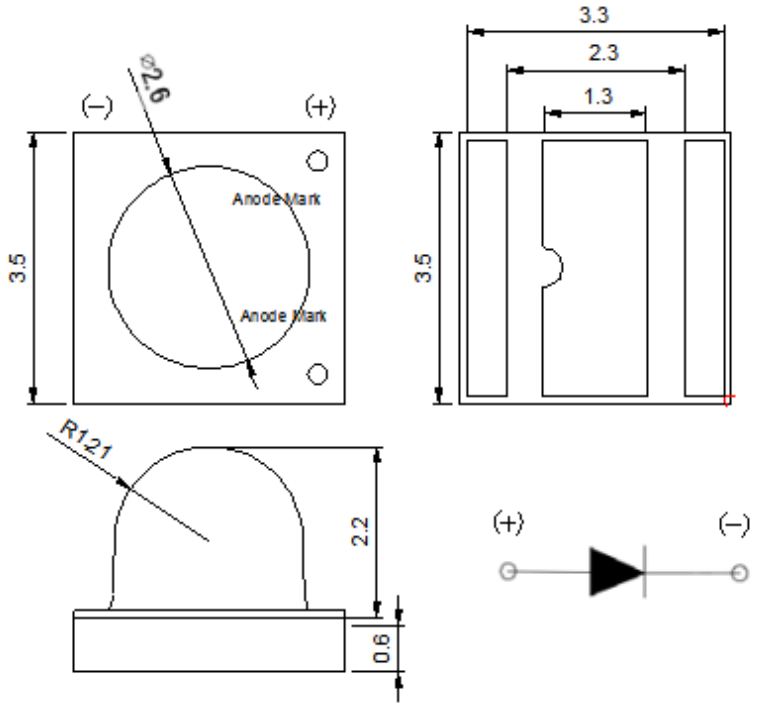
- Data transmission
- Sensing
- Remote control

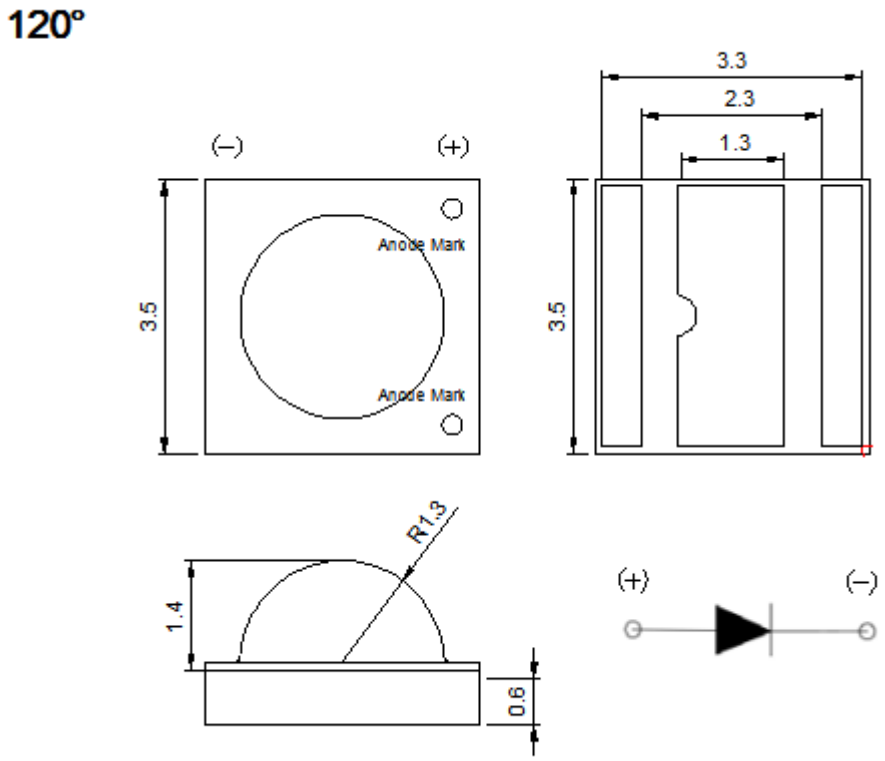
**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant

## Outline Dimensions:

60°






Units: mm / tolerance = +/-0.2mm

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

| Product Number | Color | $I_F$ (mA) | $V_F$ (V) | | | $\lambda_p$ (nm) | | | $P_O$ (mW) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. |
| QBHP684-IR1AU | Infrared | 350 | 1.3 | 1.7 | 2.2 | 930 | 940 | 950 | 100 | 200 |
| QBHP684-IR1BU | | | | | | | | | | |

## Absolute Maximum Rating

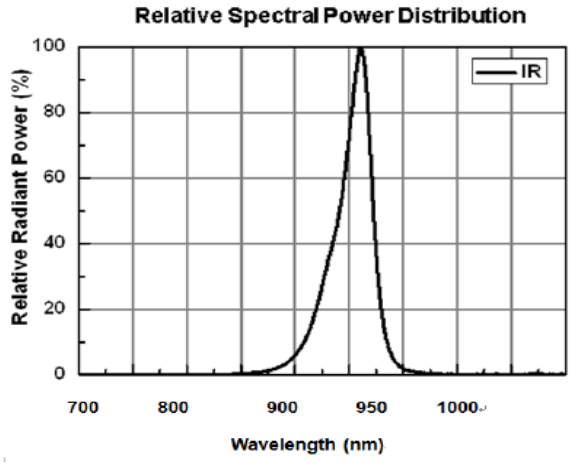
| $P_d$ (W) | $I_F$ (mA) | $I_{FP}$ (mA) | $V_R$ (V) | $T_{OP}$ (°C) | $T_{ST}$ (°C) | $T_{SOL}$ (°C) |
|---|---|---|---|---|---|---|
| 1.68 | 700 | 1000 | 5 | -40 to +85 | -40 to +100 | 260 |

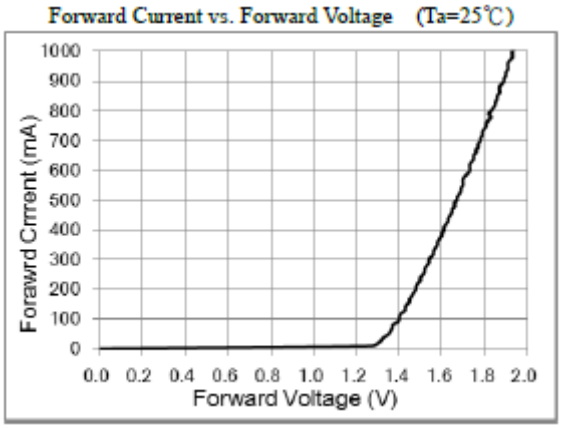
## Radiometric Power $P_O$ @ $I_F$=350mA

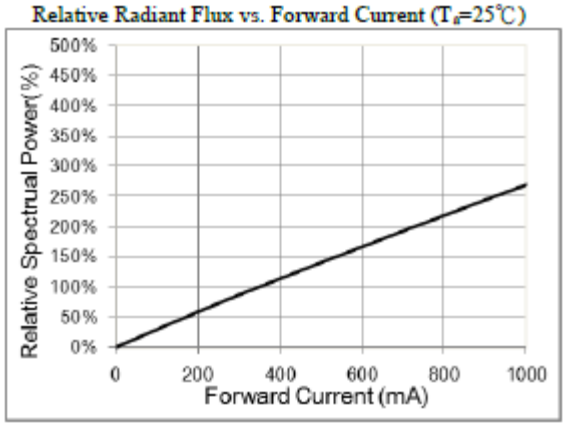
| Bin | Min. | Max. | Unit |
|---|---|---|---|
| P10 | 100 | 150 | mW |
| P15 | 150 | 200 | |
| P25 | 200 | 250 | |

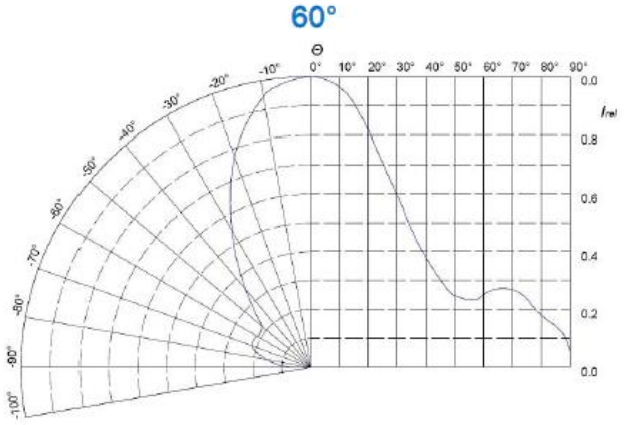
Tolerance of measurement of forward voltage: ±0.1V
Tolerance of measurement of Radiometric Power: ±15%
Tolerance of measurement of Peak wavelength: ±2nm

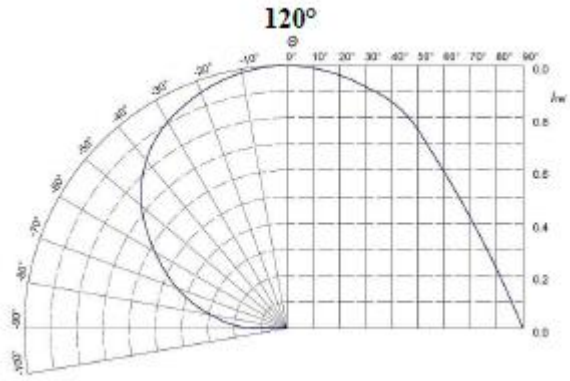
## Characteristic Curves



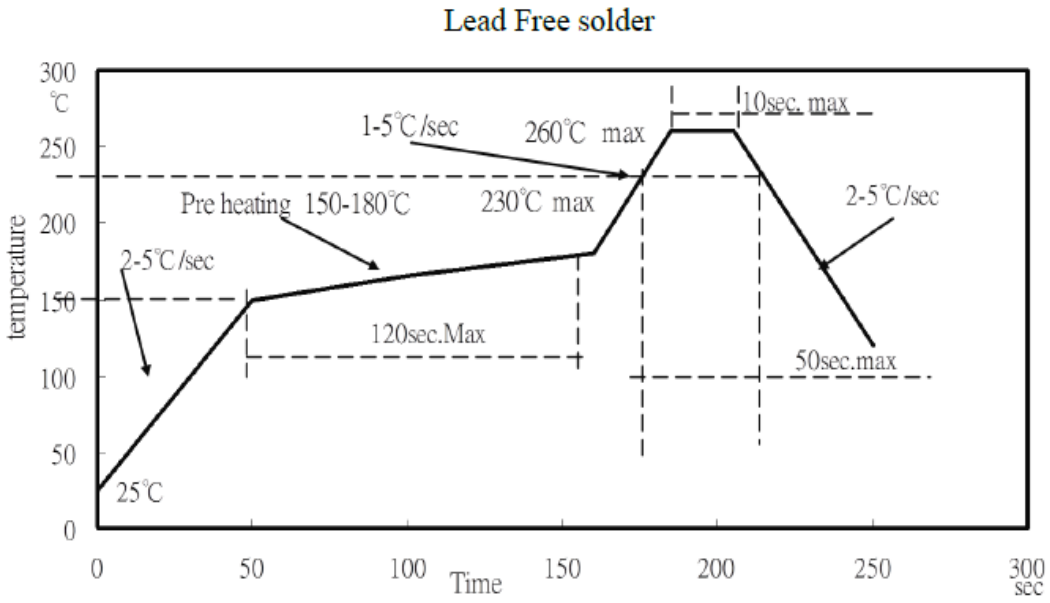



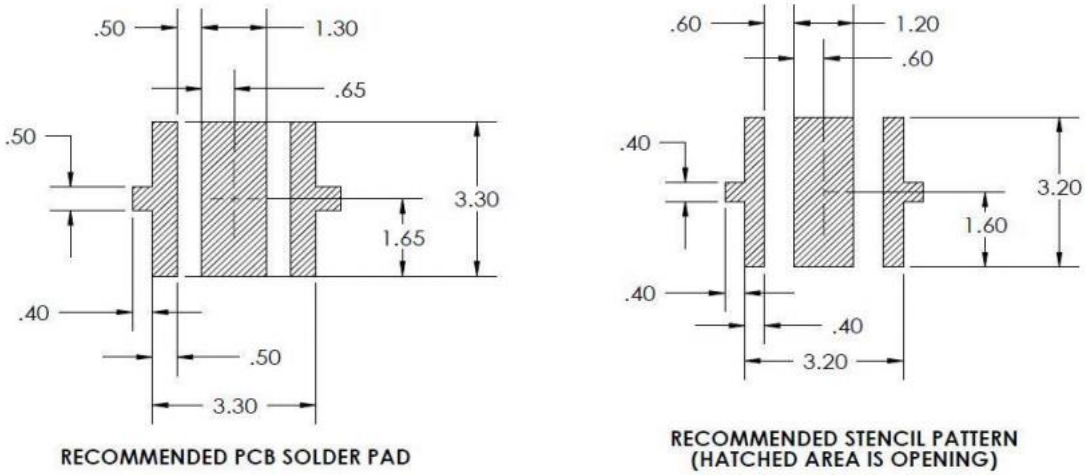



# IR Reflow Soldering Profile




**Recommended Soldering Pad:**



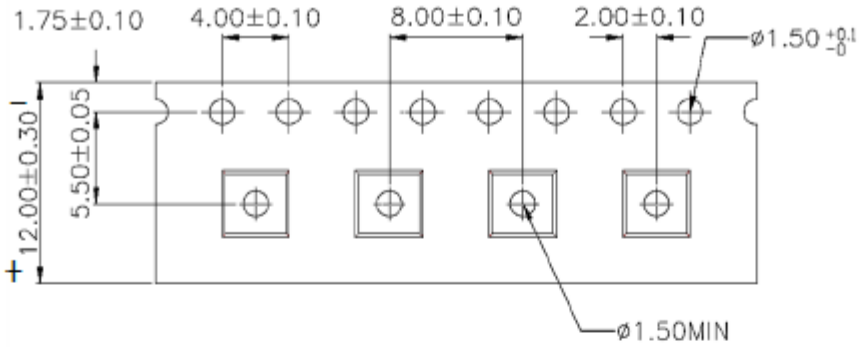

RECOMMENDED PCB SOLDER PAD

RECOMMENDED STENCIL PATTERN
(HATCHED AREA IS OPENING)

Unit: mm

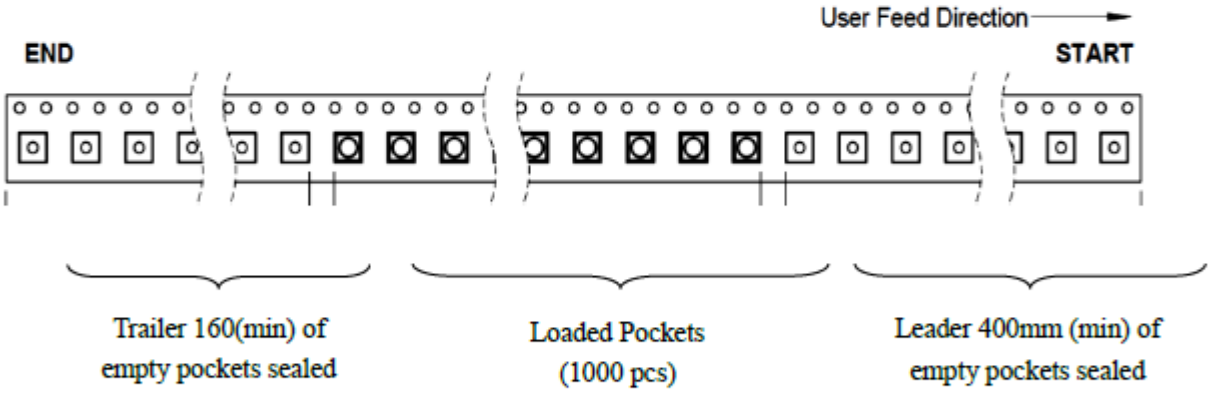
# Packing

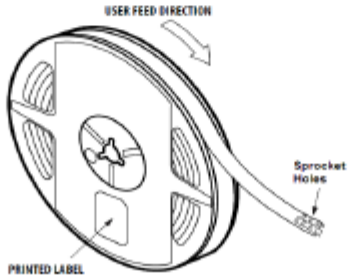
## Tape and Reel:




| | |
|---|---|
| W | 12.00±0.30 |
| A0 | 3.67±0.10 |
| B0 | 3.60±0.10 |
| K0 | 2.20±0.10 |

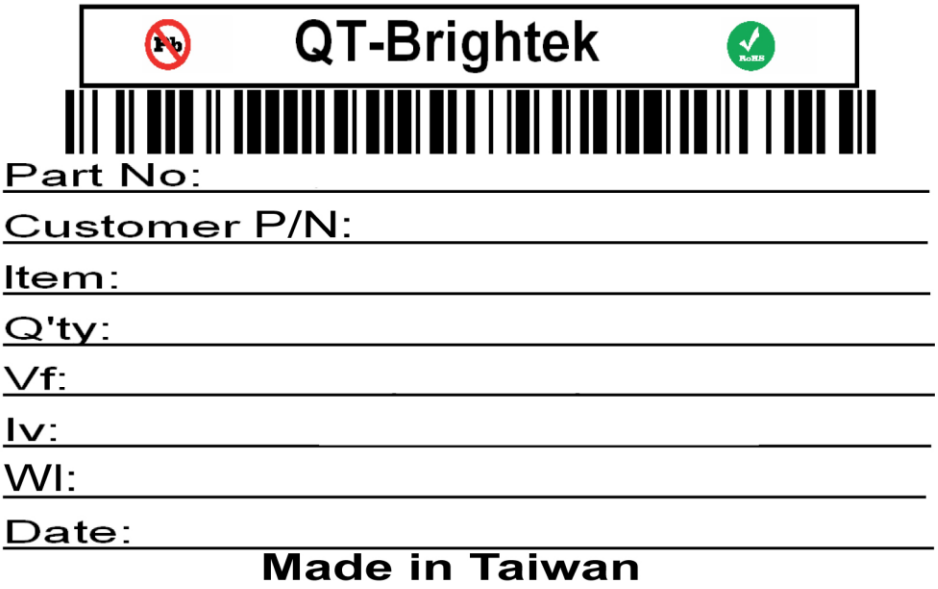
1. 10 sprocket hole pitch cumulative tolerance ±0.20.
2. Carrier camber is within 1 mm in 250 mm.
3. Material : Black Conductive Polystyrene Alloy.
4. All dimensions meet EIA-481-D requirements.
5. Thickness : 0.30±0.05mm.




Unit: mm

## Labeling




## Ordering Information

| Part # | Orderable Part # | Spec Range | Quantity per reel |
|---|---|---|---|
| QBHP684-IR1AU | QBHP684-IR1AU | Po=200mW typ., $\lambda_P$=940nm typ. @ $I_F$=350mA, VA=60° | 500 |
| QBHP684-IR1BU | QBHP684-IR1BU | Po=200mW typ., $\lambda_P$=940nm typ. @ $I_F$=350mA, VA=120° | 1000 |

## Revision History

| Description: | Revision # | Revision Date |
|---|---|---|
| New Release of QBHP684-IR1XU | V1.0 | 03/24/2016 |
| Update drawing dimension | V1.1 | 09/08/2016 |
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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.