QT-Brightek High Power Series

1.0 W High Power LED

Part No.: QBHP684U-IRU

U = 350mA

Table of Contents:

Introduction

Feature:

- 1W High Bright LED
- Packed in tape and reel
- Low thermal resistance <4°C/W
- High radiant power output
- Viewing Angle 130°
- Isolated Heat Slug

Description:

This 1W high bright high power IR LED has compact size of 3.6 x 3.6mm. It is ideal for both infrared sensing applications.

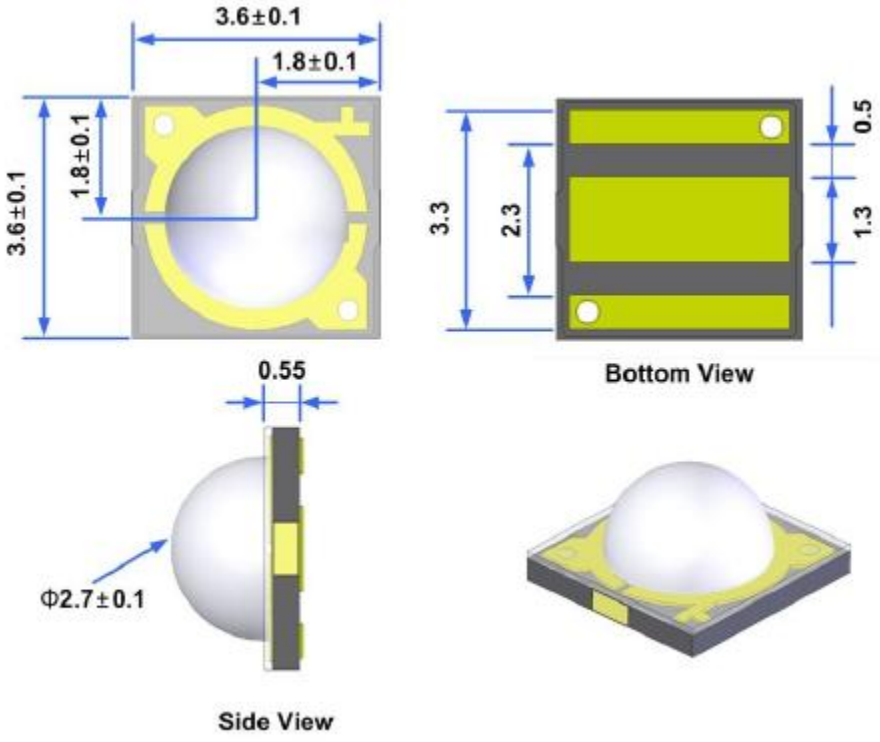
Application:

- Data transmission
- Sensing
- Remote control

Certification & Compliance:

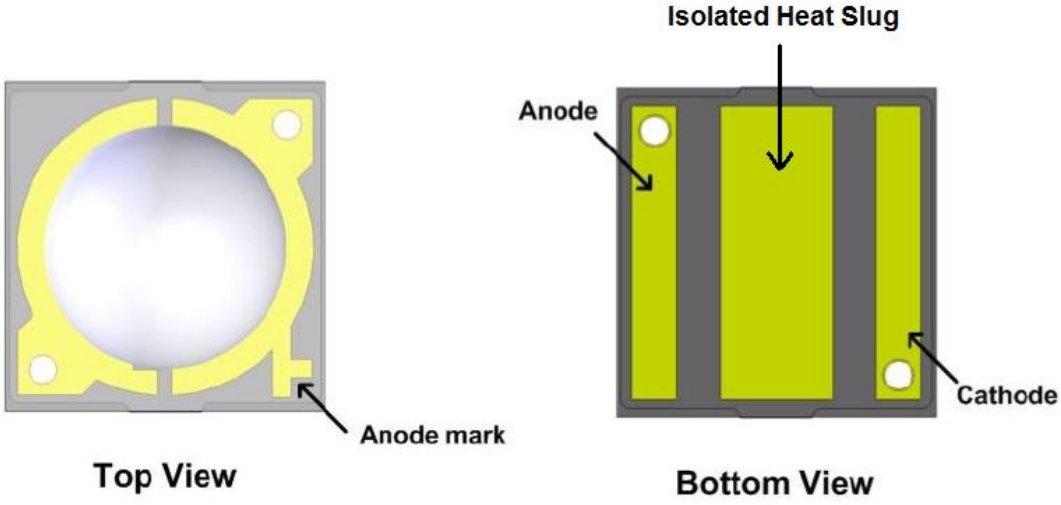
- TS16949
- ISO9001
- RoHS Compliant

Dimensions:



Units: mm / tolerance = +/-0.1mm

Pad Configurations:



Electrical / Optical Characteristic (Ta=25 °C)

Product Number	Color	I_F (mA)	V_F (V)		λ_p (nm)			P_o (mW)	
			Min.	Typ.	Min.	Typ.	Max.	Min.	Typ.
QBHP684U-IRU	Infrared	350	1.4	1.6	840	850	860	200	250

Absolute Maximum Rating

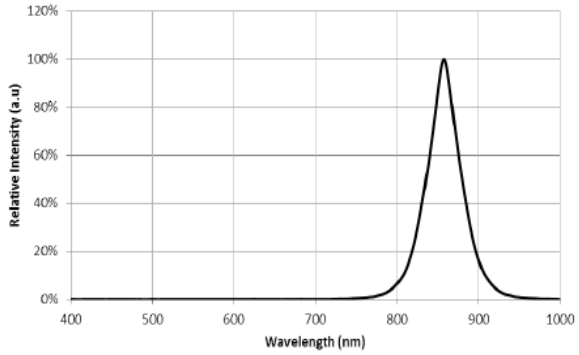
P_d (W)	I_F (mA)	I_{FP} (mA)	V_R (V)	T_{OP} (°C)	T_{ST} (°C)	T_{SOL} (°C)
1.4	700	1000	5	-40 to +85	-40 to +100	240

*Duty 1/10 @ 0.1ms Pulse Width

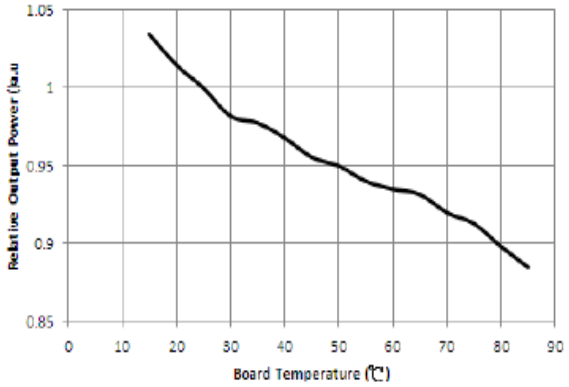
Characteristic Curves

Relative Spectral Distribution vs. Wavelength Characteristics

Spectrum of IR 850nm - Thermal Pad Temperature=25°C

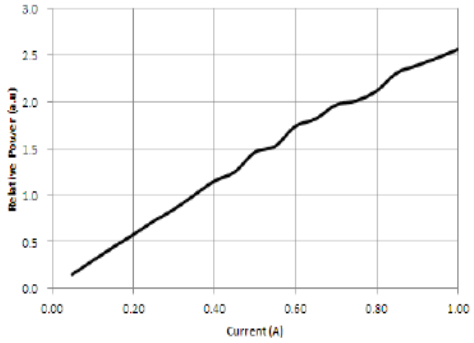


Relative Intensity vs. Thermal Pad Temperature @350mA

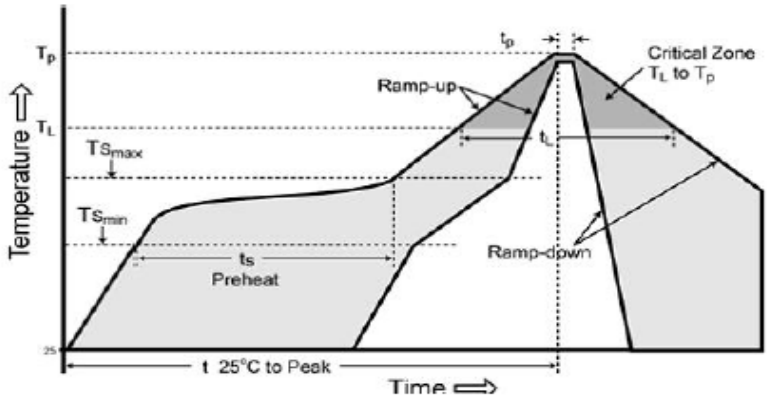


Typical Relative Power vs. Forward Current

Thermal Pad Temperature = 25°C

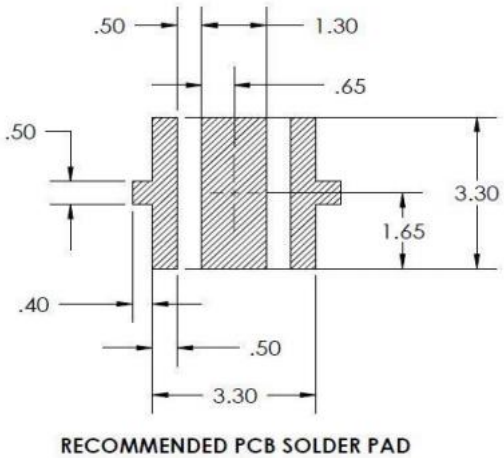


IR Reflow Soldering Profile

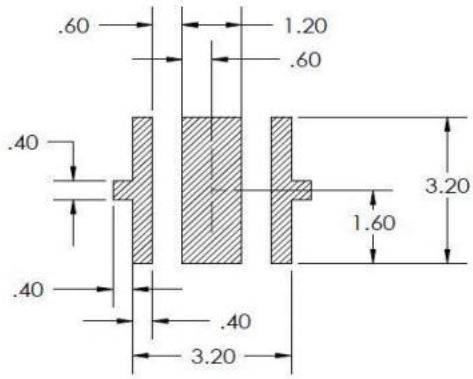


Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat Temperature Min (Tsmin) Temperature Max (Tsmax) Time (min to max) (ts)	 150°C 200°C 60-180 seconds
Time maintained above: Temperature (TL) Time (tL)	 217°C 60-150 seconds
Peak/Classification Temperature (Tp)	240°C
Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Recommended Soldering Pad:



RECOMMENDED PCB SOLDER PAD

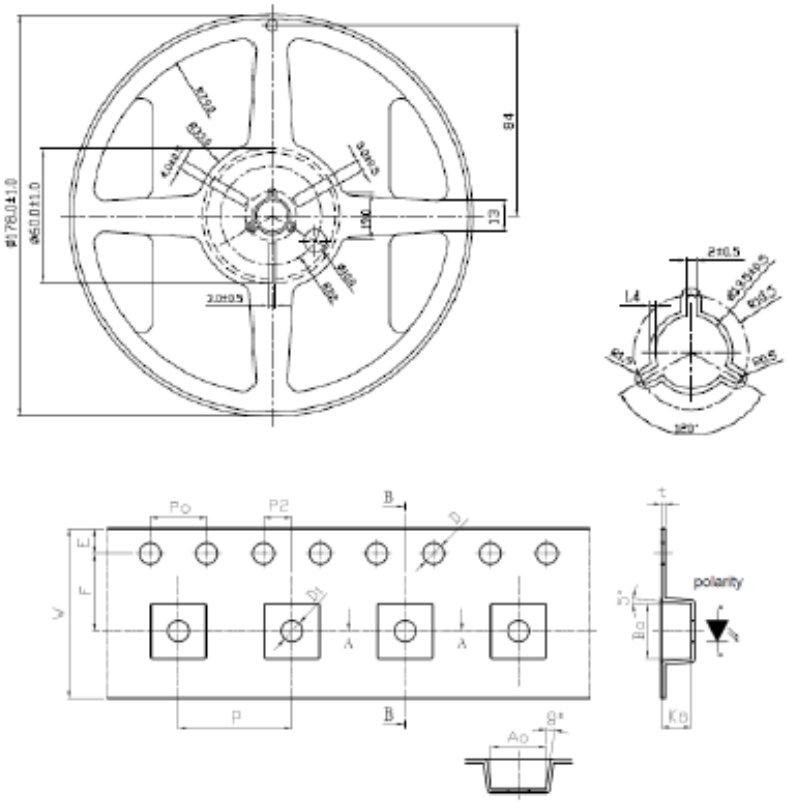


RECOMMENDED STENCIL PATTERN
(HATCHED AREA IS OPENING)

Unit: mm

Packing

Tape and Reel:

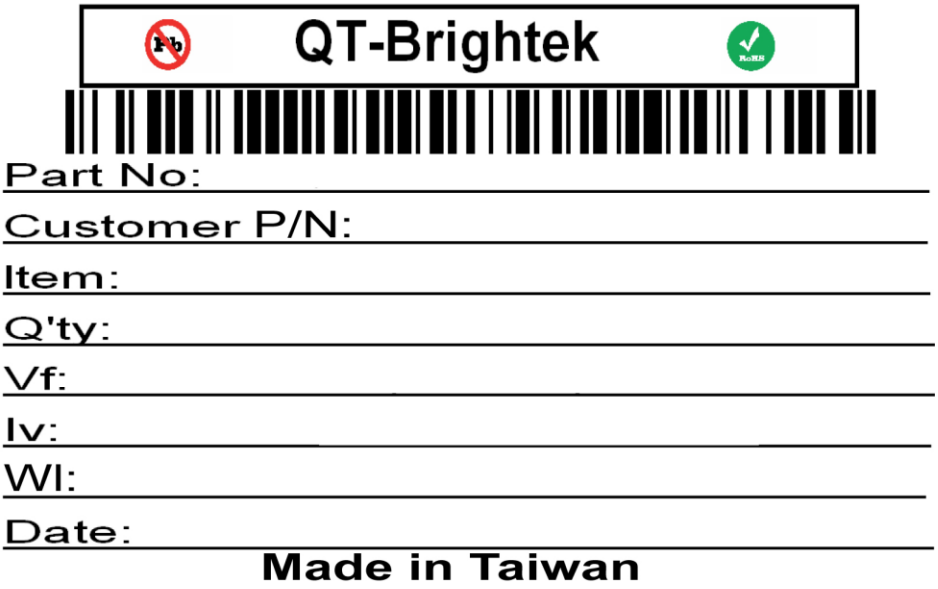


Notes: Dimensions are in millimeters.

Symbol	Dimension
W	12.00±0.10
P	8.00±0.10
E	1.75±0.10
F	5.50±0.05
P2	2.00±0.05
D	1.50+0.10 or 1.50−0.00
D1	1.50±0.10
Po	4.00±0.10
10Po	40.00±0.20
Ao	3.90±0.10
Bo	3.90±0.10
Ko	2.15±0.1
t	0.26±0.05

Unit: mm

Labeling



Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBHP684U-IRU	QBHP684U-IRU	P_o=250mW typ., λ_P=850nm typ. @ I_F=350mA	1000

Revision History

Description:	Revision #	Revision Date
New Release of QBHP684U-IRU	V1.0	06/20/2013
Add Quantity per reel – 1000pcs	V1.1	07/16/2013
Update Recommended Soldering Pad and λ_P	V1.2	02/05/2014
Pad Configurations update	V1.3	06/26/2014

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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.