

QT-Brightek High Power Series

1.0 W High Power IR LED

Part No.: QBHP684U-IRU

U = 350mA

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Introduction

Feature:

- 1W High Bright LED
- Packed in tape and reel
- Low thermal resistance <math><6^{\circ}\text{C}/\text{W}</math>
- High radiant power output
- Viewing Angle 120° typ.
- 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:

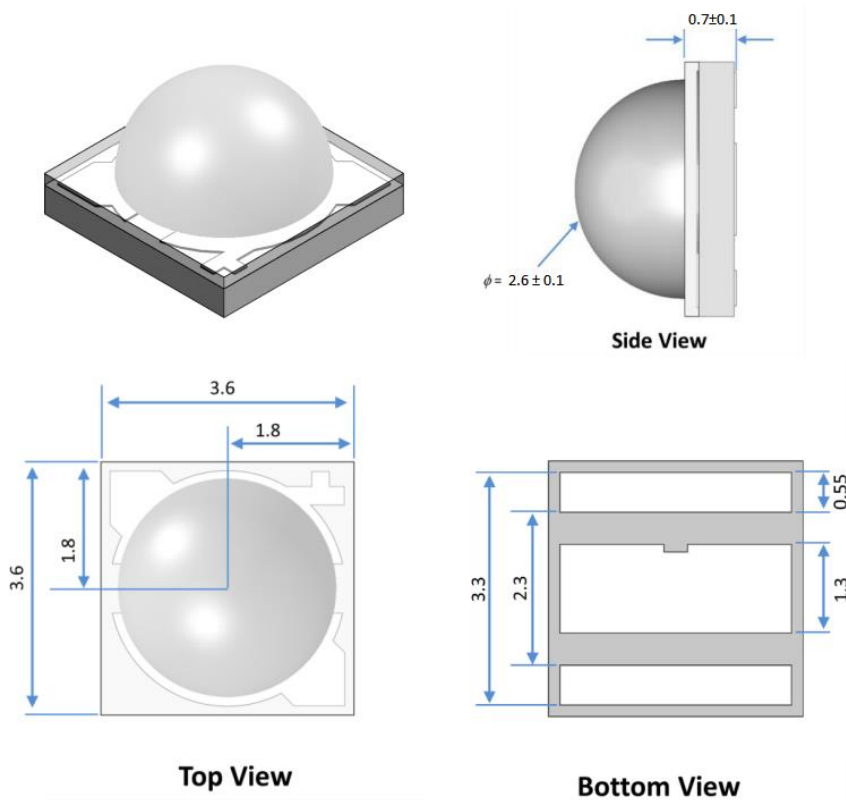
- Data transmission
- Sensing
- Remote control

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

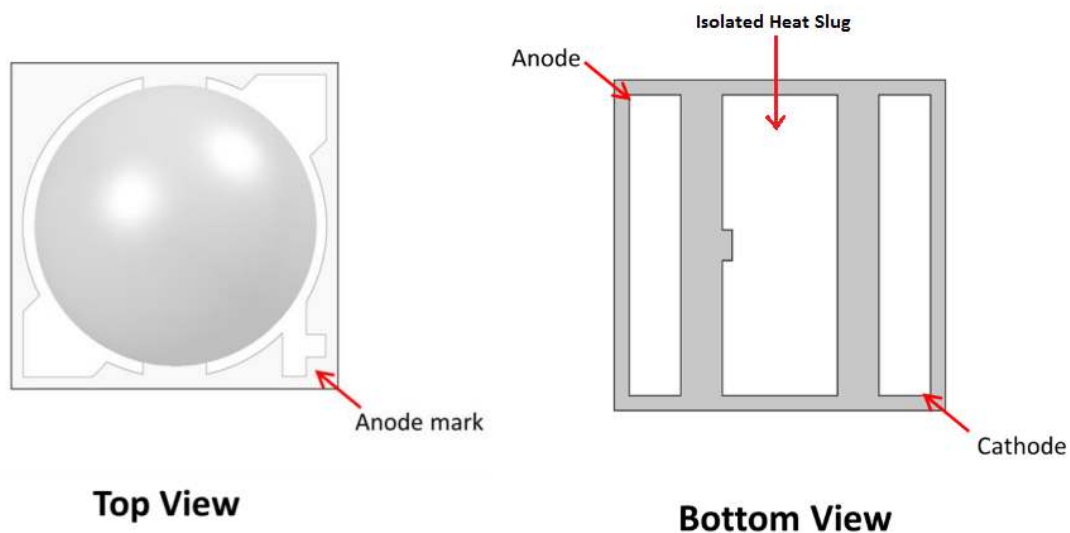


Dimensions:



Units: mm / tolerance = +/-0.2mm

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

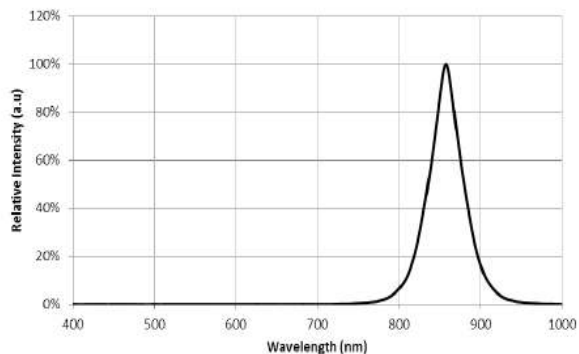
Absolute Maximum Rating

P _d (W)	I _F (mA)	I _{FP} (mA)	V _R (V)	T _{OP} (°C)	T _{ST} (°C)	T _{SO L} (°C)
1.4	700	1000	5	-40 to +85	-40 to +100	240

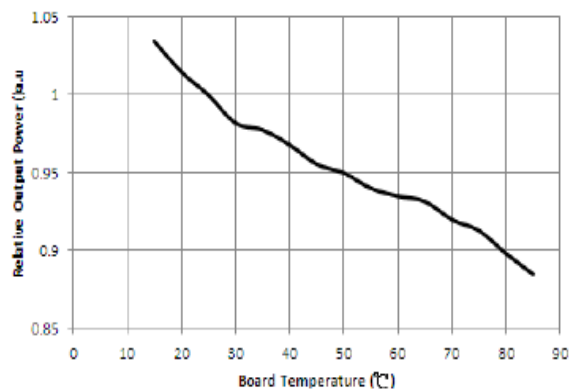
Characteristic Curves

Relative Spectral Distribution vs. Wavelength Characteristics

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

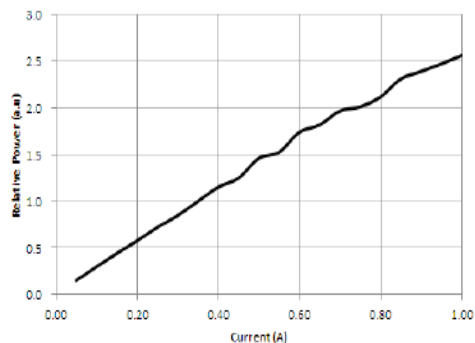


Relative Intensity vs. Thermal Pad Temperature @350mA

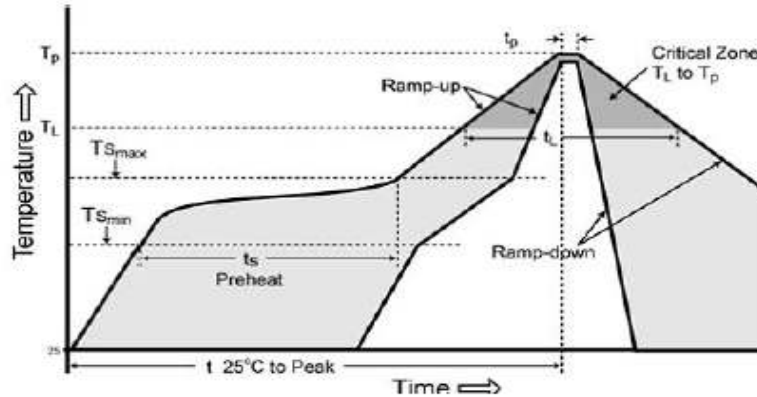


Typical Relative Power vs. Forward Current

Thermal Pad Temperature = 25°C

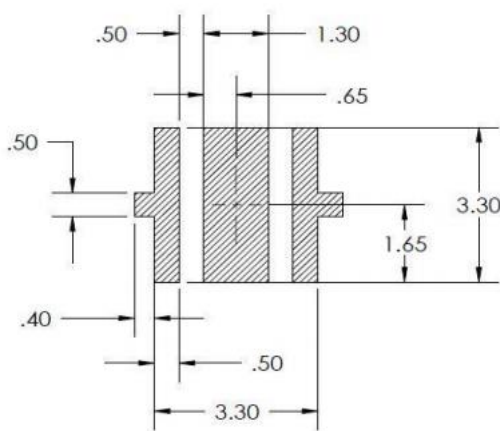


IR Reflow Soldering Profile

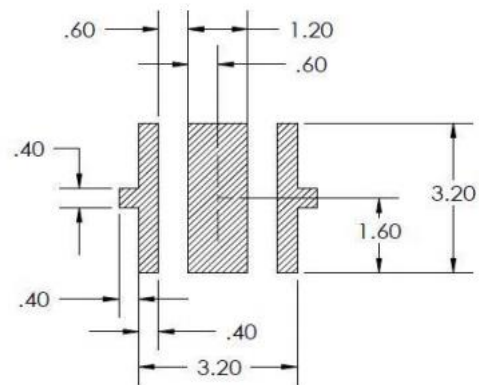


Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat	
Temperature Min (T _{smin})	150°C
Temperature Max (T _{smax})	200°C
Time (min to max) (t _s)	60-180 seconds
Time maintained above:	
Temperature (T _L)	217°C
Time (t _L)	60-150 seconds
Peak/Classification Temperature (T _p)	240°C
Time within 5°C of actual Peak Temperature (t _p)	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

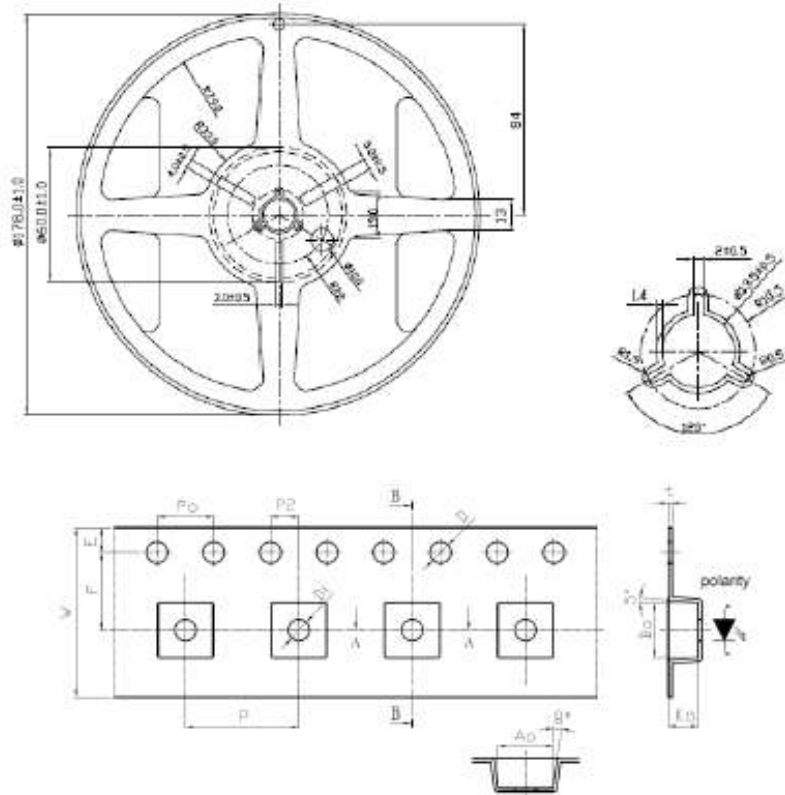


RECOMMENDED STENCIL PATTERN
(HATCHED AREA IS OPENING)

Unit: mm

Packing

Tape and Reel:



Notes: Dimensions are in millimeters.

Symbol	Dimension
W	11.00 ± 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
Dt	1.50 ± 0.10
Pn	4.00 ± 0.10
10Po	40.00 ± 0.20
Ao	3.90 ± 0.10
Bo	3.90 ± 0.10
Ho	2.15 ± 0.1
t	0.26 ± 0.05

Unit: mm

Labeling

Part No: _____
 Customer P/N: _____
 Item: _____
 Q'ty: _____
 Vf: _____
 Iv: _____
 WI: _____
 Date: _____

Made in Taiwan**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
Update package drawing color to reflect ceramic substrate	V2.0	04/30/2015
Update lens dimension to 2.6mm (diameter)	V3.0	02/07/2017

Disclaimer

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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.