

QT-Brightek High Power Series
3W High Power 3535 PC-Amber LED

Part No.: QBHP684UE-PCAV

PCA = PC-Amber
V = 700mA

Product: QBHP684UE-PCAV	Date: August 05, 2015	Page 1 of 10
	Version# 2.0	

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Introduction

Feature:

- 3W High Bright LED
- Phosphor-Converted (PC) Amber
- Packed in tape and reel
- Low thermal resistance $<4^{\circ}\text{C}/\text{W}$
- Super high flux and luminance
- InGaN Material
- ESD protection up to 8KV
- Viewing Angle 130°

Description:

This 3W high bright high power LED has compact size of 3.6 x 3.6mm. It is ideal for both indoor and outdoor lighting

Application:

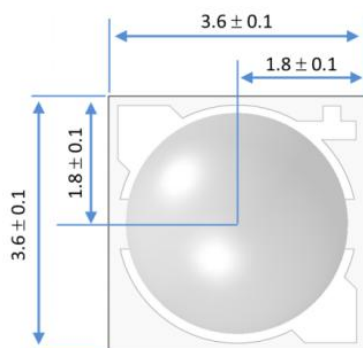
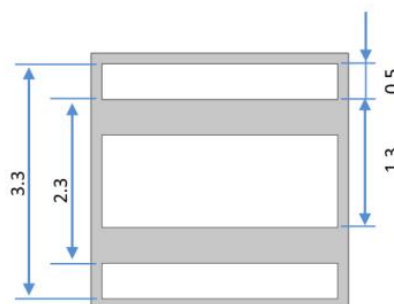
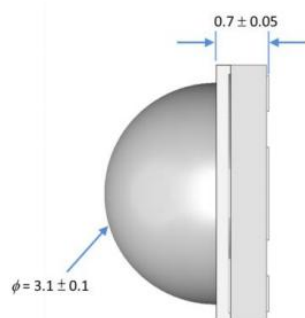
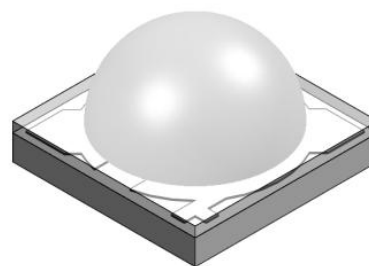
- Architectural and outdoor lighting
- Household appliances
- General lighting

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

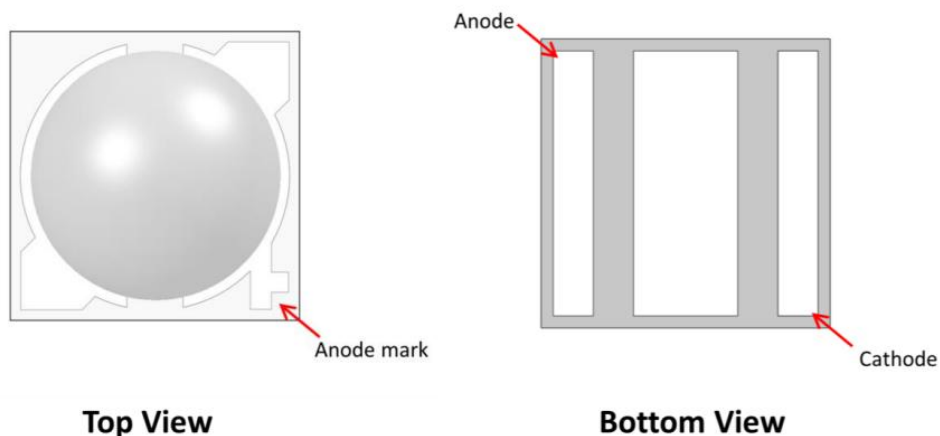


Dimensions:

**Top View****Bottom View****Side View**

Units: mm / tolerance = +/-0.1mm

Pad Configurations:


Electrical / Optical Characteristic ($T_A=25^{\circ}\text{C}$)

Product Number	Color	I_F (mA)	V_F (V)		λ_D (nm)			Φ_v (lm)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBHP684UE-PCAV	PC Amber	700	3.8	4.0	-	590	-	95	105

Absolute Maximum Rating

Material	P_d (W)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} ($^{\circ}\text{C}$)	T_{ST} ($^{\circ}\text{C}$)	T_{SOL} ($^{\circ}\text{C}$)
InGaN	2.8	700	1000	5	-40 to +85	-40 to +100	240

*Duty 1/10 @ 0.1ms Pulse Width

Forward Voltage V_F @ $I_F=700\text{mA}$

Bin	Min.	Max.	Unit
H	3.2	3.4	V
I	3.4	3.6	
J	3.6	3.8	
K	3.8	4.0	

Luminous Flux Φ_v @ $I_F=700\text{mA}$

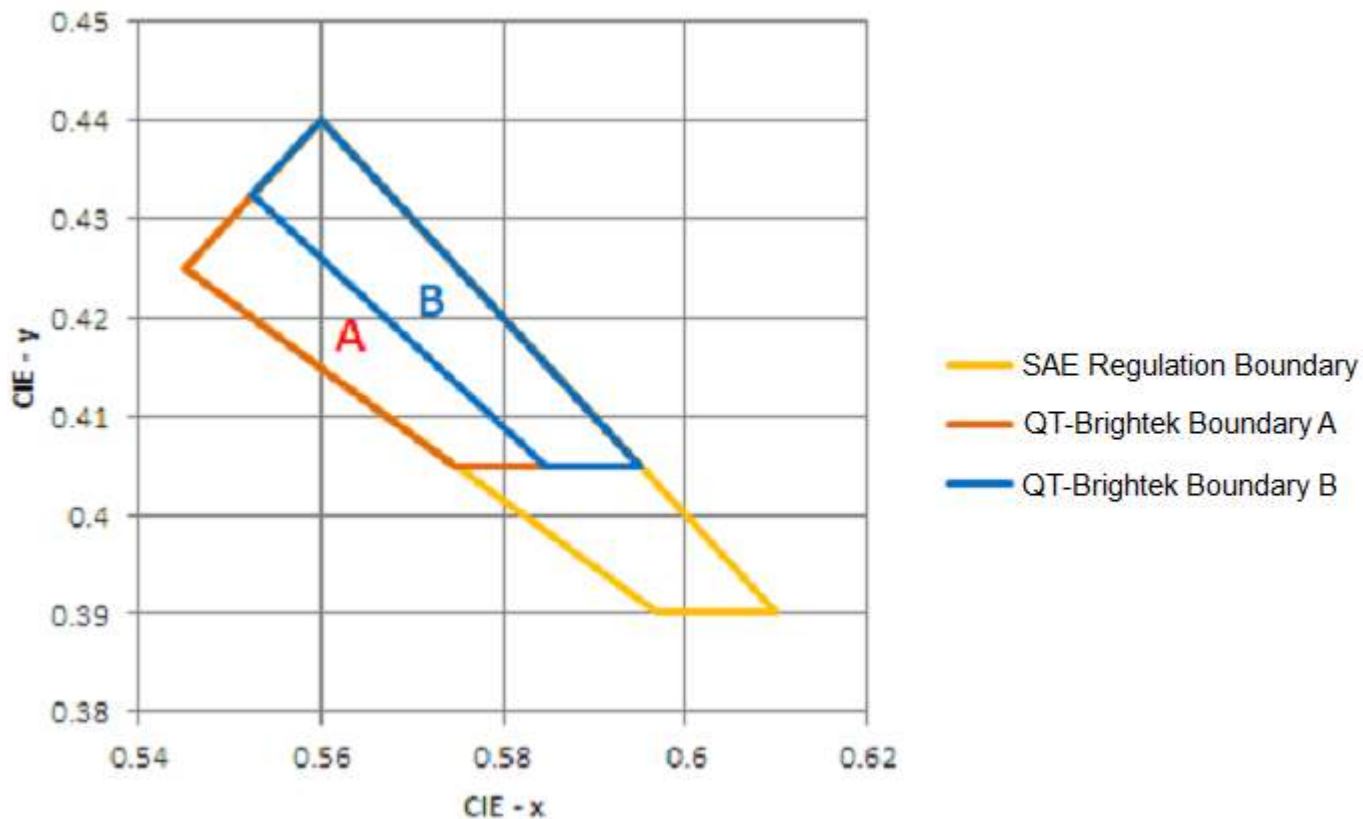
Bin	Min.	Max.	Unit
AA	95	110	lm
AB	110	125	
AC	125	140	
AD	140	155	
AE	155	170	
AF	170	185	
AG	185	200	

Note:

 Tolerance of measurement of forward voltage: $\pm 0.1\text{V}$

 Tolerance of measurement of luminous flux: $\pm 10\%$

Correlated Color Temperature and Chromaticity Correlation



SAE Regulation		A		B	
x	y	x	y	x	y
0.56	0.44	0.552455	0.432455	0.56	0.44
0.54491	0.42491	0.54491	0.42491	0.552455	0.432455
0.59701	0.39	0.57462	0.405	0.58481	0.405
0.61	0.39	0.58481	0.405	0.595	0.405
0.56	0.44	0.552455	0.432455	0.56	0.44

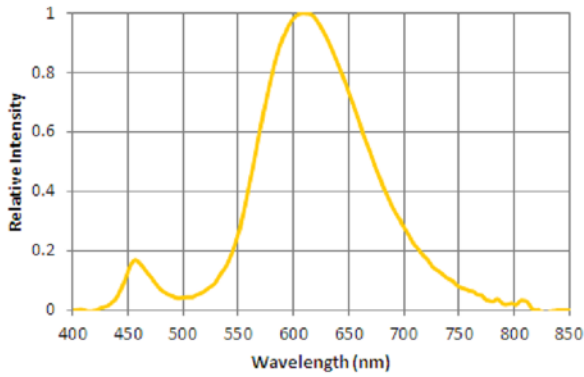
Note:

Tolerance of measurement of color coordinates: ± 0.01

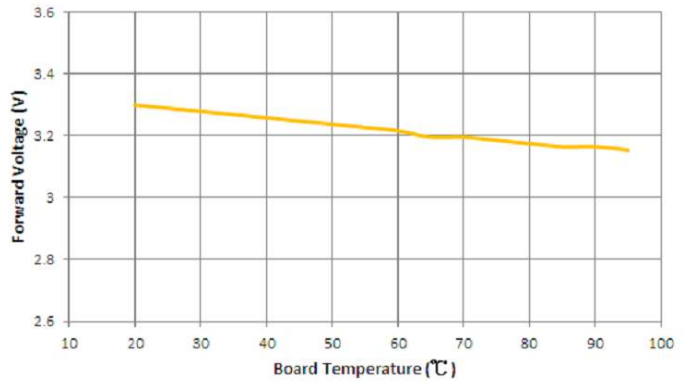
Characteristic Curves

Relative Spectral Distribution vs. Wavelength Characteristics

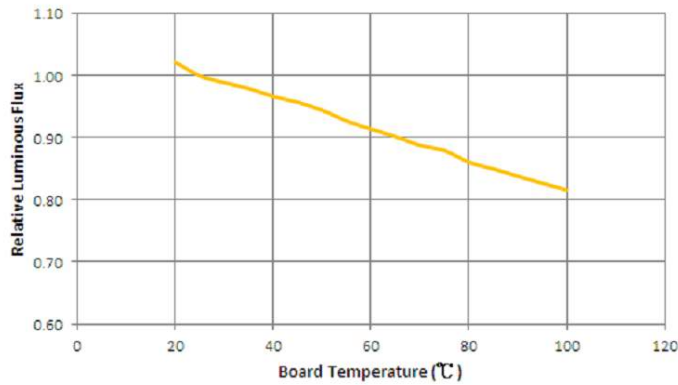
Thermal Pad Temperature = 25°C



Forward Voltage vs. Thermal Pad Temperature

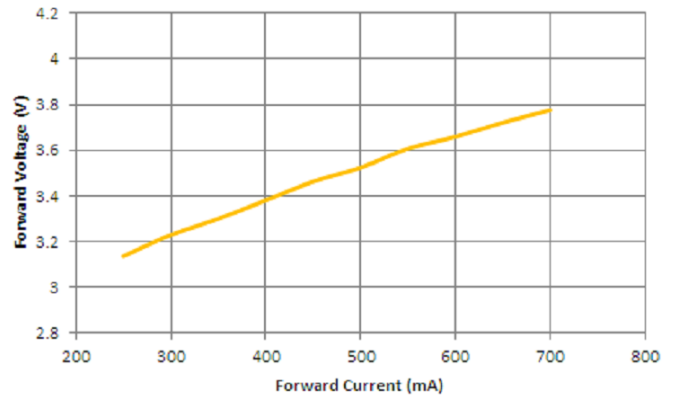


Relative Luminous Flux vs. Thermal Pad Temperature



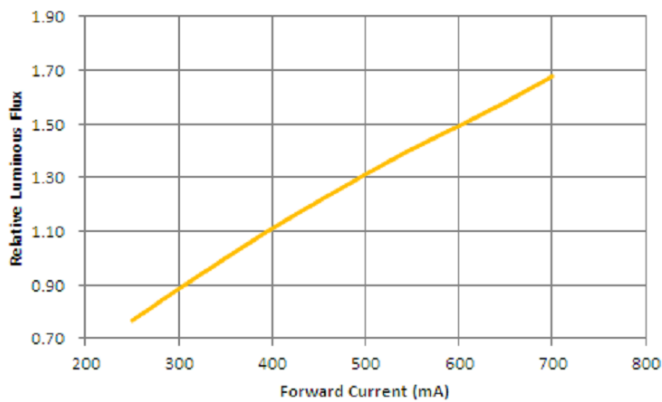
Typical Forward Current Characteristics

Thermal Pad Temperature = 25°C

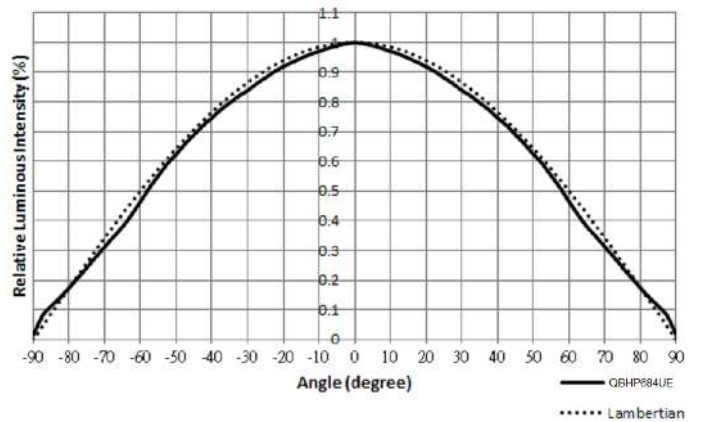


Typical Relative Luminous Flux vs. Forward Current

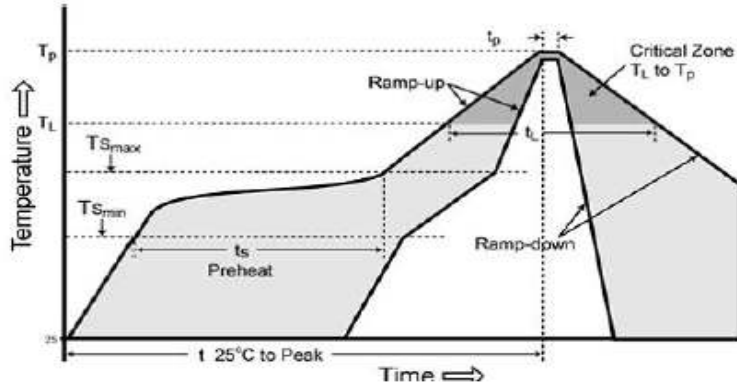
Thermal Pad Temperature = 25°C



Typical Radiation Patterns

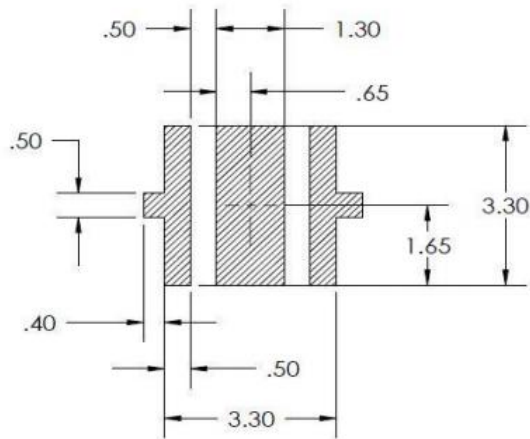


IR Reflow Soldering Profile

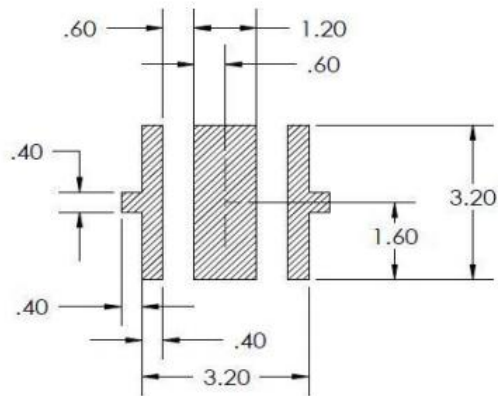


Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat	
Temperature Min (T _{smin})	150°C
Temperature Max (T _{smax})	200°C
Time (min to max) (t _s)	60-180 seconds
Time maintained above:	
Temperature (T _L)	217°C
Time (t _L)	60-150 seconds
Peak/Classification Temperature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

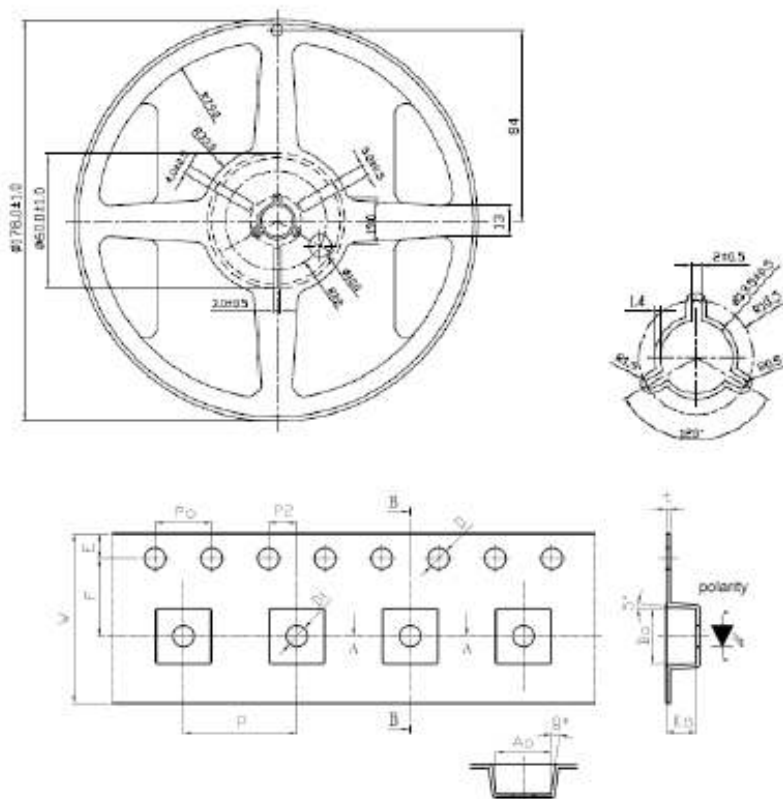


RECOMMENDED STENCIL PATTERN
(HATCHED AREA IS OPENING)

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
D1	1.50 ± 0.10
Pn	4.00 ± 0.10
10Po	40.00 ± 0.20
A0	3.90 ± 0.10
B0	3.90 ± 0.10
H0	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
QBHP684UE-PCAV	QBHP684UE-PCAV	$\Phi_v=105\text{lm typ. @ } I_F=700\text{mA}$	1000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBHP684UE-PCAV	V1.0	09/27/2013
Update Luminous Flux Bin	V1.1	04/30/2014
Update package drawing color to reflect ceramic substrate	V2.0	08/05/2015

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.