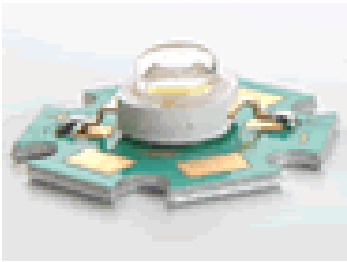
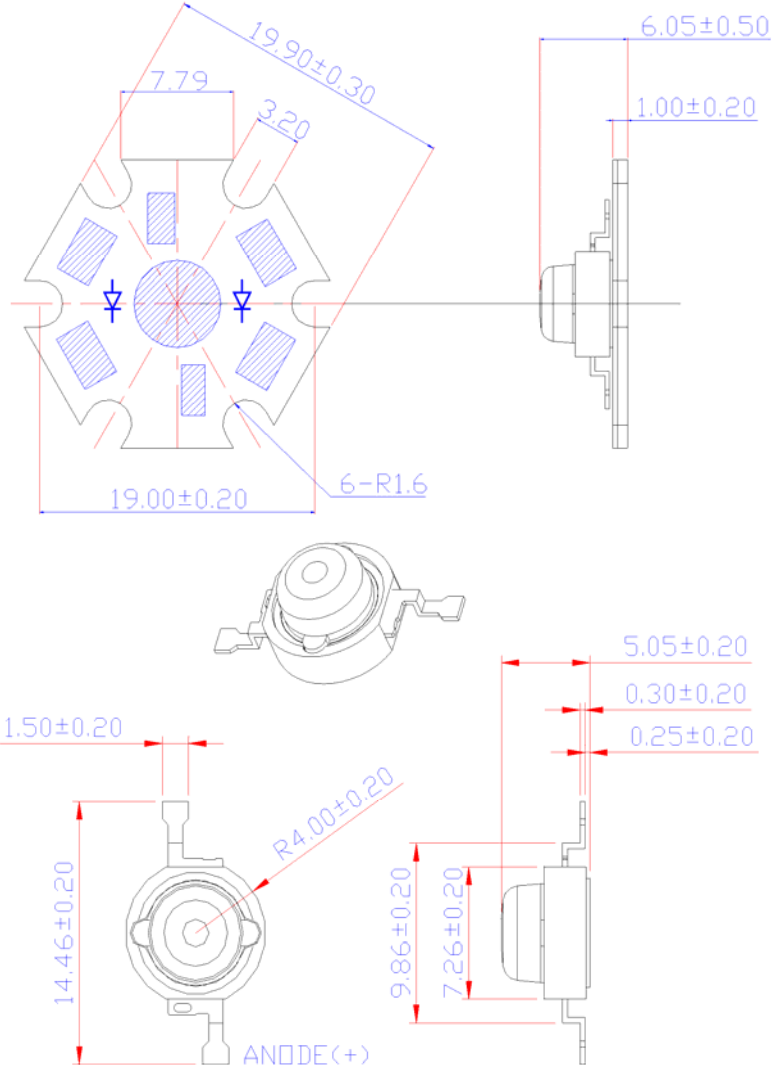


# BriLux 1W Star Emitter

## BTP-87XXCT-XX-X/X



### Package Dimension



Tolerance:  $\pm$  see spec

Unit: mm

### Features

- Highest Lumen Per Watt
- Long Operational Life
- White or Black Housing
- Superior ESD Protection
- Instant Light (less than 100ns)
- Compatible to Luxeon's "Batwing"

### Applications

- Accent Light/Down Light/Spot Light
- Automotive Exterior/Interior Light
- Large Area LCD Backlights
- Reading Light
- Marine/Miner's Lighting
- Portable Flashlight/ General Lighting

### Optical Characteristics at $T_J=25^\circ\text{C}$ , $I_F=350\text{mA}$

PART NUMBER	Emitting Color	LED Chip Material	Lens Color	Wavelength (nm)		Drive Voltage @ 350mA	Luminous Flux (lm) @350mA	VIEW ANGLE $2\theta_{1/2}$ (deg)
				CCT (K) Range				
				Min	Max	Typ.	Typ.	
BTP-87NRCT-XX-X/X	Normal Red	AllInGaP	Water Clear	620	630	2.20V	27 lm	90
BTP-87AMCT-XX-X/X	Amber	AllInGaP	Water Clear	610	620	2.20V	30 lm	90
BTP-87YECT-XX-X/X	Yellow	AllInGaP	Water Clear	585	595	2.20V	25 lm	90
BTP-87BLCT-XX-X/X	Blue	AllInGaN	Water Clear	460	475	3.50V	7 lm	90
BTP-87PGCT-XX-X/X	Green	AllInGaN	Water Clear	515	535	3.20V	25 lm	90
BTP-87WWCT-XX-X/X	Warm White	AllInGaN	Water Clear	2800K	3800K	3.50V	20 lm	90
BTP-87WHCT-XX-X/X	White	AllInGaN	Water Clear	5000K	8000K	3.50V	25 lm	90

# BriLux 1W Batwing Star Emitter

## BTP-87XXCT-XX-X/X

Absolute Maximum Ratings at T<sub>J</sub>=25°C

Parameter	Red/Amber/Yellow	White/Blue/Green
Power Dissipation (W)	0.77	1.22
DC Forward Current (mA) <sup>[1]</sup>	350	350
Peak Pulsed Forward Current (mA) <sup>[4]</sup>	1000	1000
Average Forward Current (mA)	350	350
Reverse Voltage (V)	5	5
Reverse Current (uA)	50	50
ESD Sensitivity (V) <sup>[2]</sup>	2,000	2,000
LED Junction Temperature at 350mA (°C) <sup>[3]</sup>	125	125
Thermal Resistance Junction to Board (°C/W)	15	15
Temperature Coefficient of V <sub>F</sub> (mV/°C)	-2	-2
Storage Temperature (°C)	-40 to +120	-40 to +120
Operating Temperature (°C)	-30 to +110	-30 to +110
Lead Soldering Temperature (°C) <sup>[4]</sup>	240°C for 5 seconds max	240°C for 5 seconds max

### Application Notes:

1. Proper forward current must be observed to maintain the junction temperature below maximum rating
2. Although all products listed are class one ESD protection (+/- 2KV by HBM mode), care must be fully taken when handling products
3. Specification is subjected to change for improvements without notice.
4. Test conditions: tp≤10us, duty cycle = 0.005
5. CAUTION: When lighting up, the emitter will become very hot if it is not attached to a heat sink. Please provide proper heat management to prevent damage to the emitter.



#### WARNING

This range of LEDs is produced with die having a high radiant flux. Care must be taken when viewing the product at close range as the light may be intense enough to cause damage to the human eye.

**Note:** Industry standard procedures regarding static must be observed when handling this product.

# BriLux 1W Batwing Star Emitter

## BTP-87XXCT-XX-X/X

CCT, Flux and V<sub>F</sub> Selection Guide (@ I<sub>F</sub>=350mA)

### BTP-87XXCT-XX-X/W/B

White Housing (Optional: B=Black)

#### Wavelength Ranks Selection

Color	Bin	λ <sub>D</sub> (nm)	
		Min	Max
Blue	B5	460	465
	B6	465	470
	B7	470	475
	XX	460 – 475	
Green	G6	515	520
	G7	520	525
	G8	525	530
	G9	530	535
	XX	515 – 535	
Red	XX	620 – 630	
Amber	XX	610 – 620	
Yellow	XX	585 – 595	

#### Flux Ranks Selection

Color	Bin	Flux (lumens)
Blue	H	4.5~6
	J	6~8
	K	8~10
	X	Default Full Range
Red Amber Yellow Green White	M	14~18
	N	18~23
	P	23~30
	Q	30~39
	R	39~50
	X	Default Full Range

#### CCT Ranks Selection

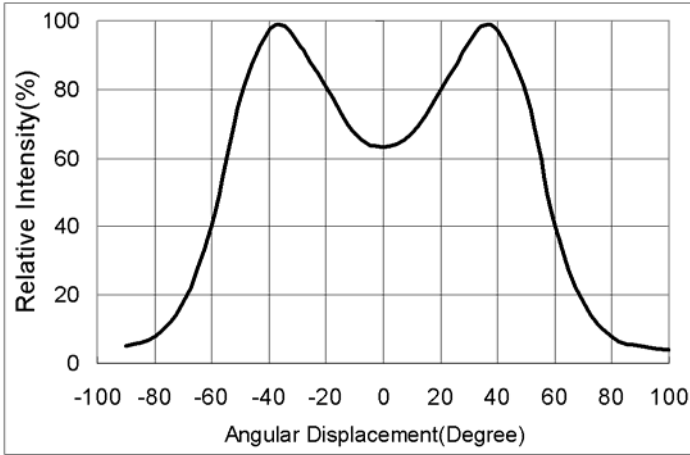
Color Temp	Bin	CCT(K)	
		Min	Max
Warm White	00	2800	3300
	01	3300	3800
	XX	2800K – 3800K	
White	02	5000	6000
	03	6000	7000
	04	7000	8000
	XX	5000K – 8000K	

#### V<sub>F</sub> Ranks Selection

Color	Bin	V <sub>F</sub> (V)	
		Min	Max
Red Amber Yellow	V04	2.0	2.2
	V05	2.2	2.4
	V06	2.4	2.6
	V07	2.6	2.8
	VXX(Full)	2.0~2.8	
White Blue Green	V08	2.8	3.0
	V09	3.0	3.2
	V10	3.2	3.4
	V11	3.4	3.6
	V12	3.6	3.8
	VXX(Full)	2.8~3.8	

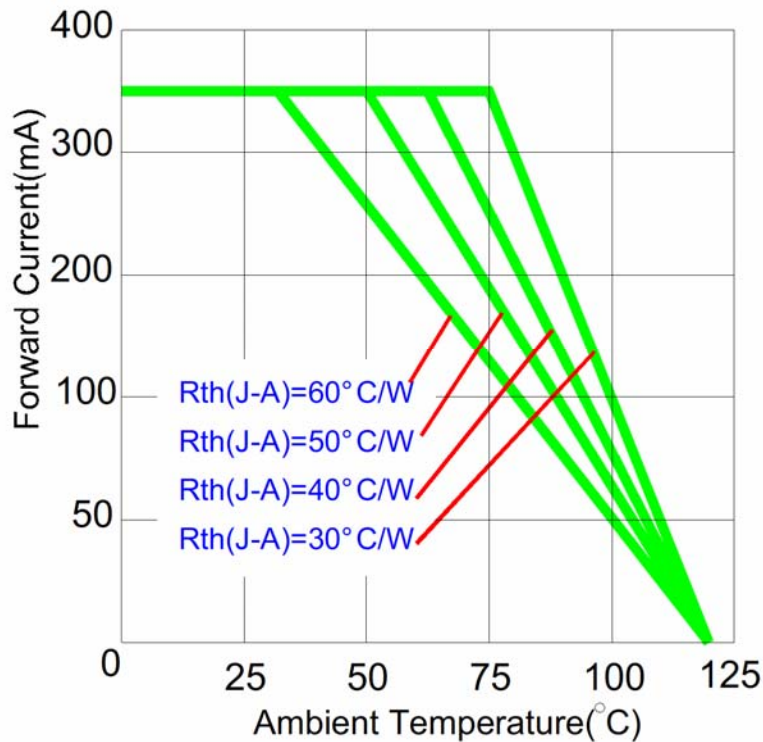
(Please specify on order, otherwise, default full range of V<sub>F</sub>)

**Typical Radiation Pattern for Batwing Emitter**



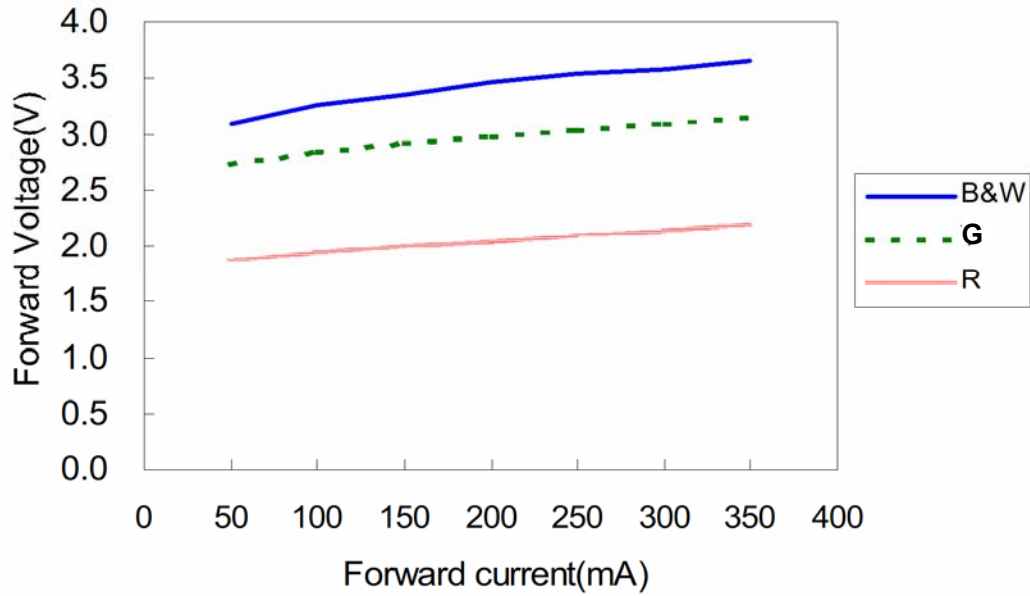
**Fig. 1 Typical Radiation Pattern**

**Operating Current & Ambient Temperature**



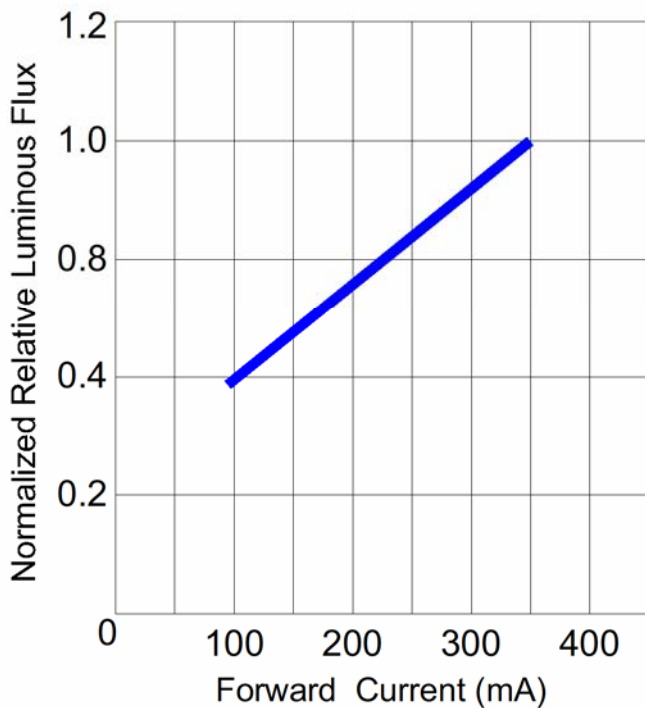
**Fig. 2 Forward Current vs Ambient Temperature**

Operating Current & Forward Voltage



**Fig. 3. Forward Current vs Forward Voltage**

Current & Luminous Flux



**Fig. 4 Forward Current vs Luminous Flux**



**DB LECTRO**  
COMPOSANTS ÉLECTRONIQUES  
ELECTRONIC COMPONENTS



## **BriLux 1W Batwing Star Emitter**

### **BTP-87XXCT-XX-X/X**

#### **Important Notes:**

- **The information contained herein is presented only as a Guide for the application of our products. Brilliance Technologies assumes no responsibility for any infringement of intellectual property or other rights of the third parties which may result from its use.**
- **Brilliance Technologies continually improves the quality of our products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsible of the customer, when using Brilliance Technologies products, to comply with the standard of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such Brilliance Technologies products cause loss of human life, bodily injury or damage to property.**
- **Brilliance Technologies products listed in this data sheet are intended for usage in general electronics and/or non-commercial or industrial lighting products. These products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury.**
- **In developing your design, please ensure that Brilliance Technologies products are used within specified operating ranges as set forth in the most recent Brilliance Technologies data sheets.**

BT-Rev. 1.0B20040917

Specifications are subject to change for improvement without notice.

Copyright © 2003 Brilliance Technologies Co., Ltd. All rights reserved.