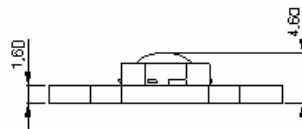
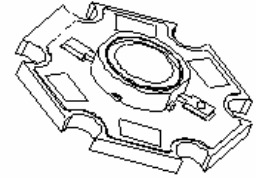
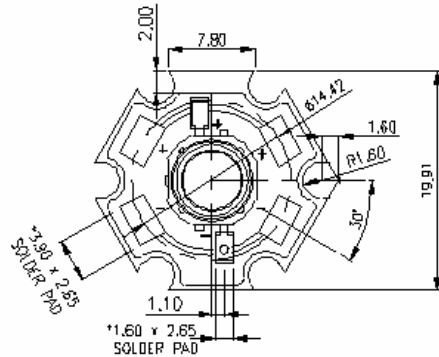
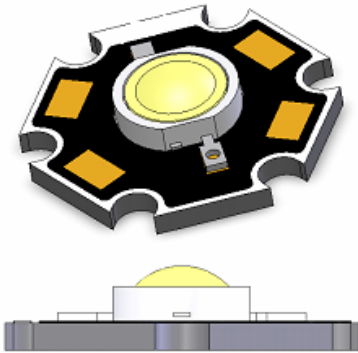


# ProLite 1W SMD Star BTP-99XXCT-XX-X/W

## Package Dimension



## Features

- Highest Lumen Per Watt
- Long Operational Life
- White Housing
- Superior ESD Protection
- Instant Light (less than 100ns)
- Compatible to Luxeon's "Lambertian"
- True SMD Emitter

Note: Lens is low dome profile

Tolerance: ± see spec      Unit: mm

## Applications

- Accent Light/Down Light/Spot Light
- Automotive Exterior/Interior Light
- Large Area LCD Backlights
- 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-99NRCT-XX-X/W	Normal Red	AlInGaP	Water Clear	620	635	2.40V	30 lm	140
BTP-99AMCT-XX-X/W	Amber		Water Clear	610	620	2.40V	36 lm	
BTP-99YECT-XX-X/W	Yellow		Water Clear	585	595	2.40V	30 lm	
BTP-99BLCT-XX-X/W	Blue	AlInGaN	Water Clear	460	475	3.50V	10 lm	
BTP-99PGCT-XX-X/W	Green		Water Clear	520	540	3.50V	30 lm	
BTP-99WWCT-XX-X/W	Warm White		Water Clear	2800K	3800K	3.50V	20 lm	
BTP-99WHCT-XX-X/W	White		Water Clear	5000K	8000K	3.50V	25 lm	

### Notes:

- 1) Picture for illustration purpose only. Please refer to outline dimension for actual package size.
- 2) Flux is measured with the accuracy of  $\pm 15\%$ . Please refer to Flux Selection Guide
- 3) CCT is measured with the accuracy of  $\pm 400\text{K}$ . Please refer to CCT Selection Guide
- 4)  $V_F$  is measured with the accuracy of  $\pm 0.15\text{V}$ . Please refer to  $V_F$  Selection Guide

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

Parameter	Red/Amber/Yellow	White/Blue/Green
Power Dissipation (W)	1.00	1.22
DC Forward Current (mA) <sup>[1]</sup>	350	350
Peak Pulsed Forward Current (mA) <sup>[4]</sup>	500	500
Average Forward Current (mA)	350	350
Reverse Voltage (V)	5	5
Reverse Current (uA)	50	50
ESD Sensitivity (V) <sup>[2]</sup>	16,000	16,000
LED Junction Temperature at 350mA (°C) <sup>[3]</sup>	120	135
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 +105	-40 to +105
Operating Temperature (°C)	-40 to +105	-40 to +105
Lead Soldering Temperature (°C) <sup>[4]</sup>	260°C for 5 seconds max	260°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 two ESD protection (+/- 16KV 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.

CCT, Flux and  $V_F$  Selection Guide (@  $T_J = 25^\circ\text{C}$ ,  $I_F = 350\text{mA}$ )

### BTP-99XXCT-XX-X/W

White Housing

#### Wavelength Ranks Selection

Color	Bin	$\lambda_D(\text{nm})$	
		Min	Max
Blue	<b>B5</b>	460	465
	<b>B6</b>	465	470
	<b>B7</b>	470	475
	<b>XX</b>	460 – 475	
Green	<b>G6</b>	515	520
	<b>G7</b>	520	525
	<b>G8</b>	525	530
	<b>G9</b>	530	535
	<b>XX</b>	515 – 535	
Red	<b>XX</b>	620 – 630	
Amber	<b>XX</b>	610 – 620	
Yellow	<b>XX</b>	585 – 595	

#### Flux Ranks Selection

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

#### CCT Ranks Selection

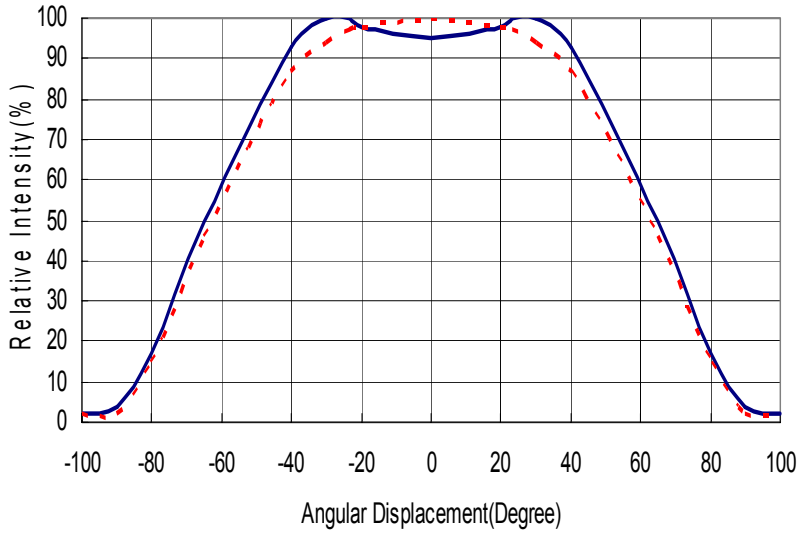
Color Temp	Bin	CCT(K)	
		Min	Max
Warm White	<b>00</b>	2800	3300
	<b>01</b>	3300	3800
	<b>XX</b>	2800K – 3800K	
White	<b>02</b>	5000	6000
	<b>03</b>	6000	7000
	<b>04</b>	7000	8000
	<b>XX</b>	5000K – 8000K	

#### $V_F$ Ranks Selection

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

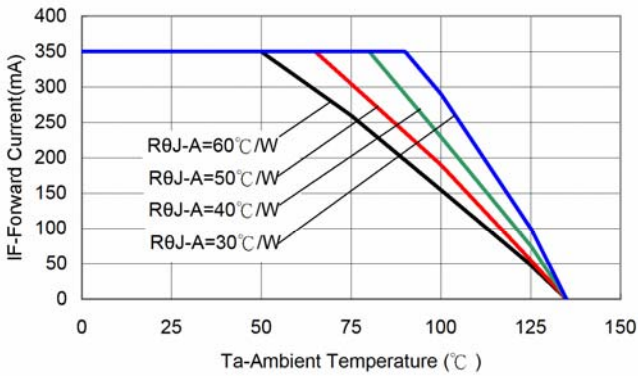
 (Please specify on order, otherwise, default full range of  $V_F$ )

**Typical Radiation Pattern**

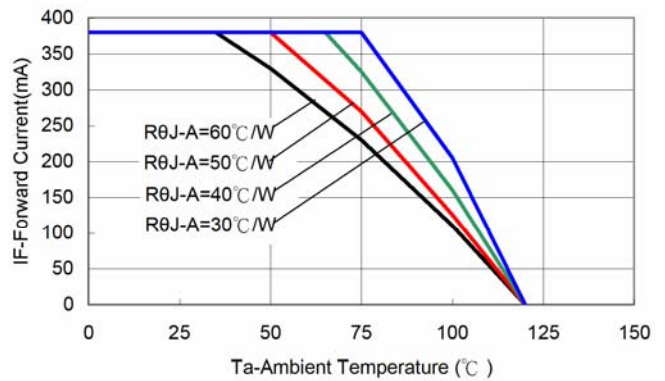


**Fig. 1 Typical Radiation Pattern**

**Operating Current & Ambient Temperature**



**Fig 2a.** Maximum Forward Current vs. Ambient Temperature. Derating based on TjMAX=135°C for White, Warm White, Blue and Green.



**Fig 2b.** Maximum Forward Current vs. Ambient Temperature. Derating based on TjMAX=120°C for Amber, Red-Orange and Red.

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

**Forward Current Characteristics,  $T_j=25^\circ\text{C}$**

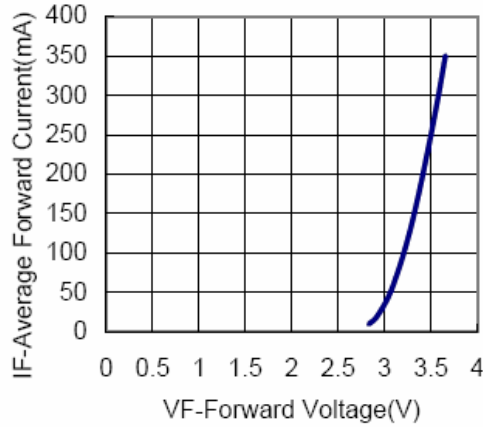


Fig 3a. Forward Current vs. Forward Voltage for White, Warm White, Blue and Green.

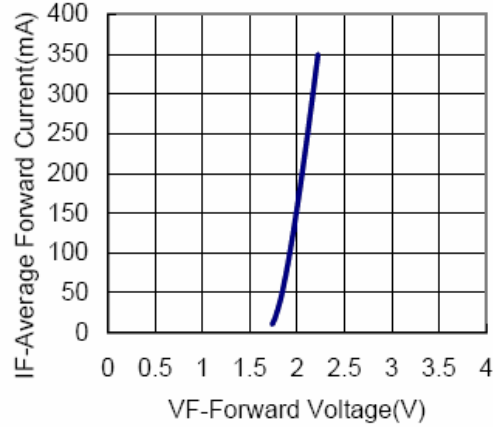


Fig 3b. Forward Current vs. Forward Voltage for Amber, Red-Orange and Red.

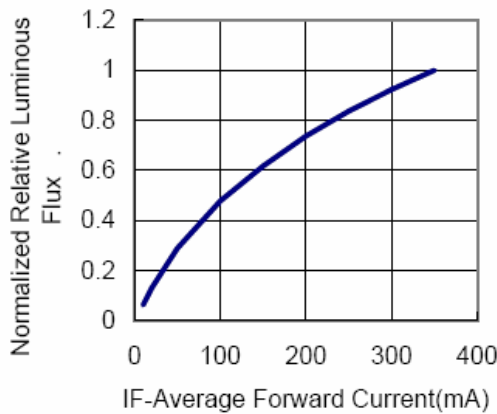


Fig 4a. Relative Luminous Flux vs. Forward Current for White, Warm White, Blue and Green at  $T_j=25^\circ\text{C}$  maintained.

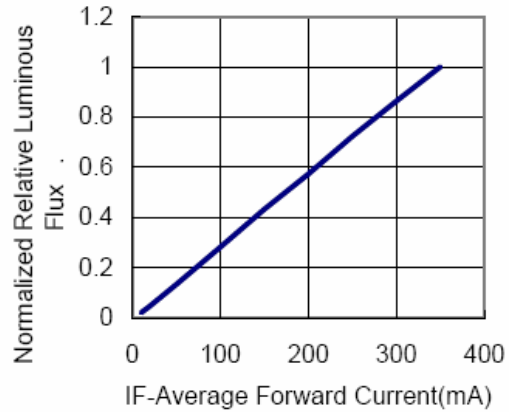
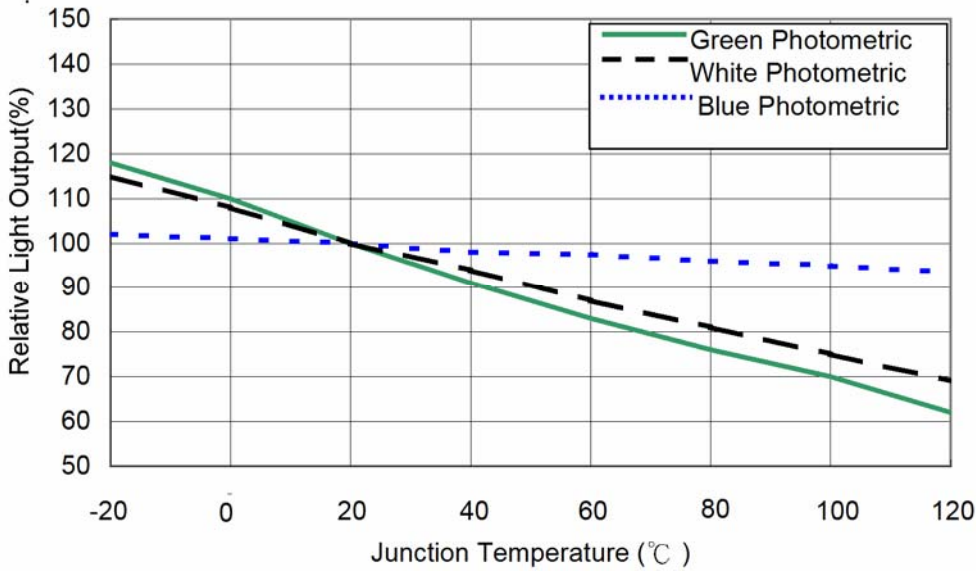
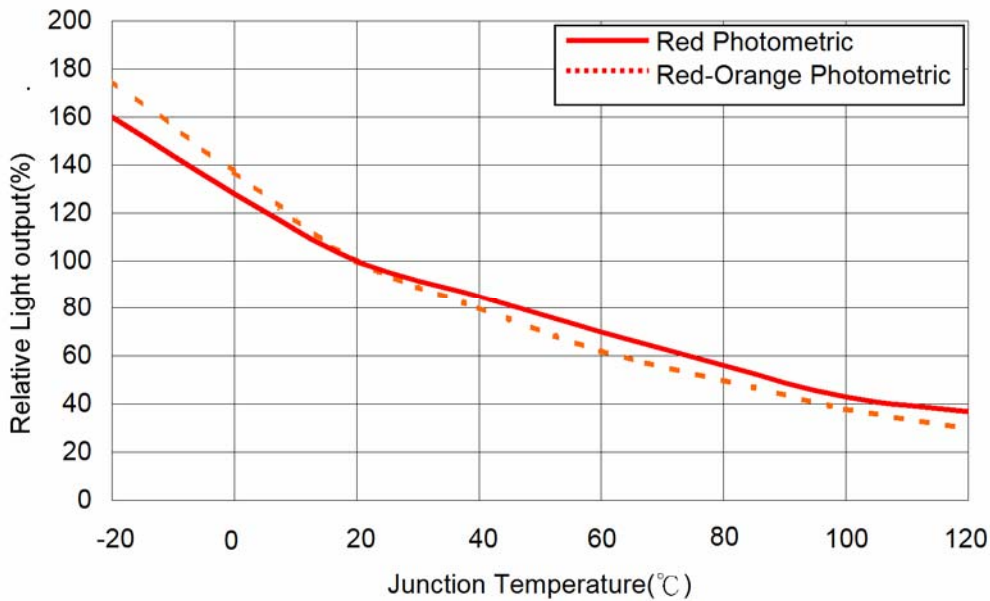


Fig 4b. Relative Luminous Flux vs. Forward Current for Amber, Red-Orange, Red at  $T_j=25^\circ\text{C}$  maintained.

Light Output & Junction Temperature

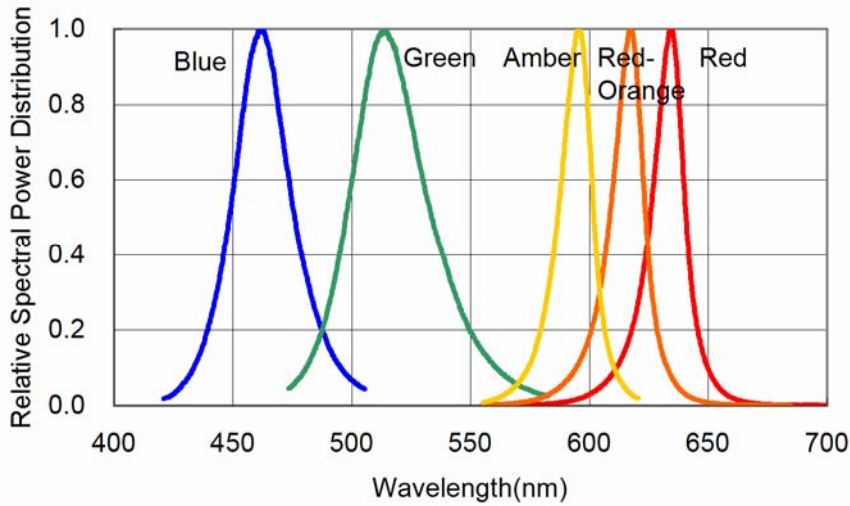


**Fig. 5a Relative Light Output vs Junction Temperature**



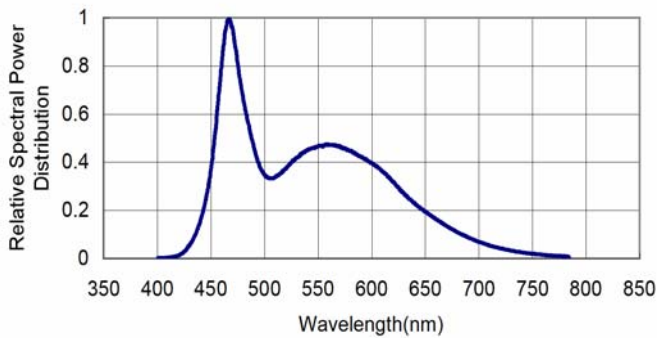
**Fig. 5b Relative Light Output vs Junction Temperature**

Wavelength Characteristics,  $T_J = 25^\circ\text{C}$

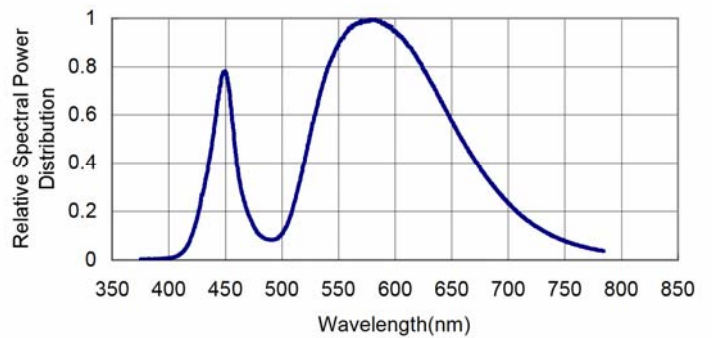


**Fig. 6a Relative Intensity vs Wavelength**

White Color Spectrum,  $T_J = 25^\circ\text{C}$



**Fig. 6b White Color Spectrum (Typ 5500K)**



**Fig. 6c Warm White Color Spectrum (Typ 3300K)**



## **ProLite 1W SMD Star**

### **BTP-99XXCT-XX-X/W**

#### Other Important Notes

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BT-Rev. 1.0A20041217

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