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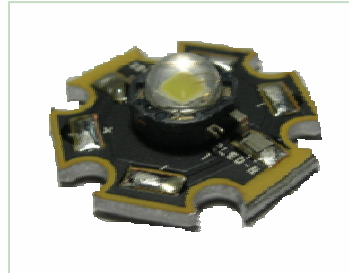
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# X42182

Z-Power series is designed for high current operation and high flux output applications.



Z-Power LED's thermal management perform exceeds other power LED solutions. It incorporates state of the art SMD design and Thermal emission material.

Z Power LED is ideal light sources for general illumination applications, custom designed solutions, automotive large LCD backlights

# X42182

## Features

- Super high flux output and high luminance
- Designed for high current operation
- Low thermal resistance
- SMT solderability
- Lead free product
- RoHS compliant

## Applications

- Mobile phone flash
- Automotive interior / Exterior lighting
- Automotive signal lighting
- Automotive forward lighting
- Torch
- Architectural lighting
- LCD TV / Monitor backlight
- Projector light source
- Traffic signals
- Task lighting
- Decorative / Pathway lighting
- Remote / Solar powered lighting
- Household appliances

\* The appearance and specifications of the product may be changed for improvement without notice.

## Full Code of Z-Power LED Series

Full code form :  $X_1 X_2 X_3 X_4 X_5 X_6 - X_7 X_8 - X_9 X_{10} X_{11} X_{12} X_{13}$

### 1. Part Number

- $X_1$  : Color
- $X_2$  : Z-Power LED series number
- $X_3$  : LENS type
- $X_4$  : Chip quantity (or Power Dissipation)
- $X_5$  : Package outline size
- $X_6$  : Type of PCB

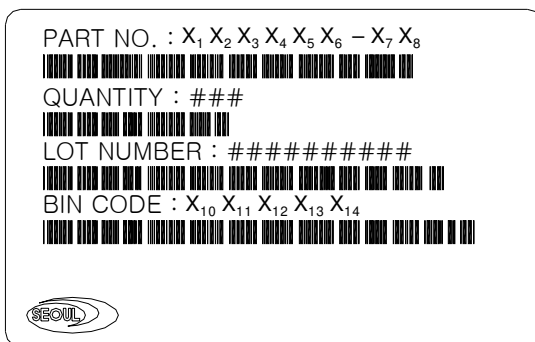
### 2. Internal Number

- $X_7$  : Grade of characteristic code
- $X_8$

### 3. Code Labeling

- $X_9$  : Luminous flux (or Radiant flux for royal blue)
- $X_{10} X_{11} X_{12}$  : Dominant wavelength (or x,y coordinates rank code)
- $X_{13}$  : Forward voltage

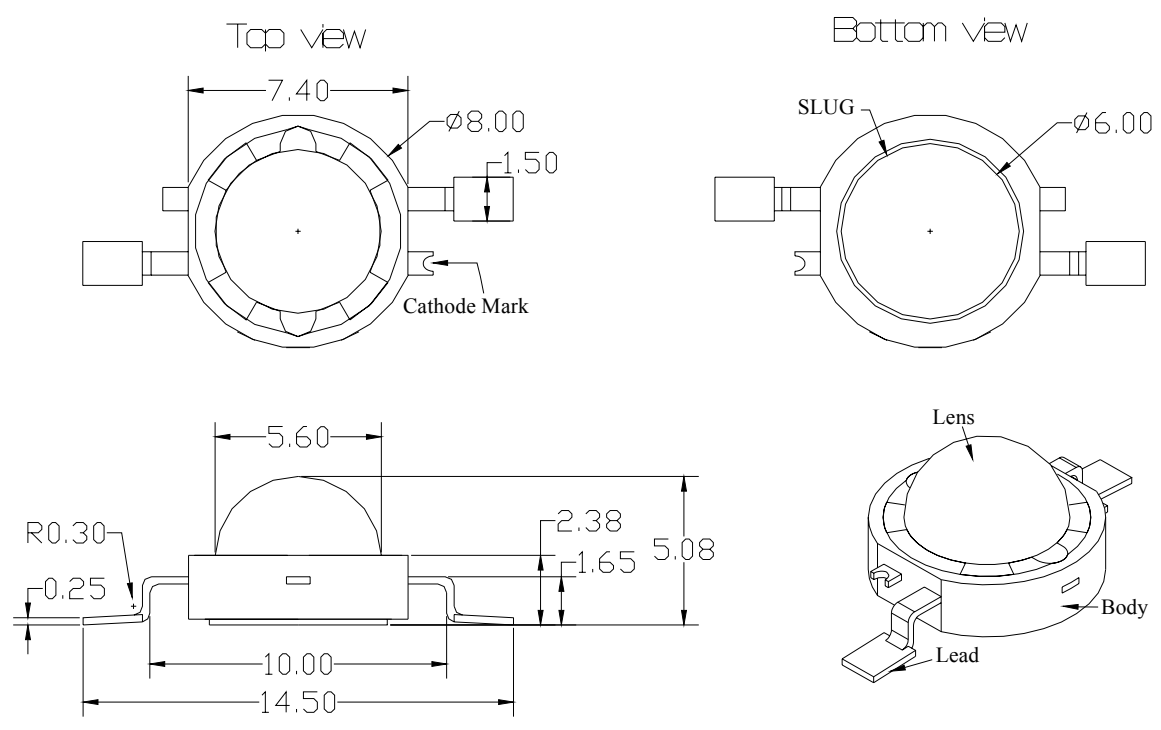
### 4. Sticker Diagram on Reel & Aluminum Vinyl Bag



For more information about binning and labeling, refer to the Application Note -1

## Outline Dimension

### 1. Dome Type



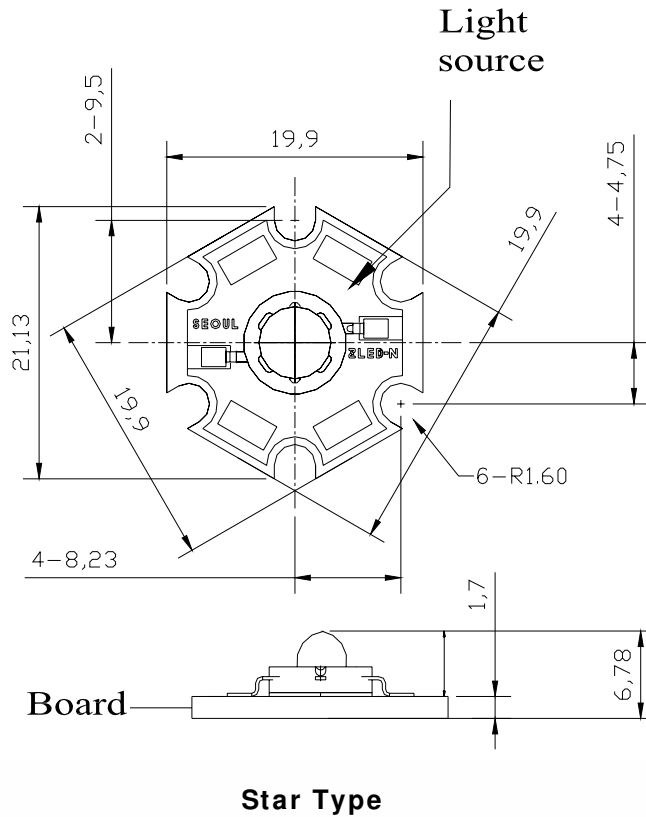
**Notes :**

1. All dimensions are in millimeters. (tolerance :  $\pm 0.2$  )
2. Scale : none
3. Slug of package is connected to anode.

\* The appearance and specifications of the product may be changed for improvement without notice.

## Outline Dimension

### 2. PCB Type



Notes :

1. All dimensions are in millimeters. (tolerance :  $\pm 0.2$  )
2. Scale : none

\* The appearance and specifications of the product may be changed for improvement without notice.

## Characteristics for Z-Power LED

### 1. Pure White (W42182)

1-1 Electro-Optical characteristics at  $I_F=350\text{mA}$ ,  $T_A=25^\circ\text{C}$

Parameter		Symbol	Value			Unit
			Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	T rank	$\Phi_V$ <sup>[2]</sup>	70	80	91	lm
	U rank	$\Phi_V$ <sup>[2]</sup>	91	100	-	lm
Correlated Color Temperature <sup>[3]</sup>		CCT	-	6300	-	K
CRI		$R_a$	-	75	-	-
Forward Voltage <sup>[4]</sup>		$V_F$	3.0	3.25	4	V
View Angle		$2\Theta_{1/2}$	127			deg.
Thermal resistance <sup>[5]</sup>		$R\Theta_{J-B}$	8.8			$^\circ\text{C/W}$
Thermal resistance <sup>[6]</sup>		$R\Theta_{J-C}$	7.2			$^\circ\text{C/W}$

### 1-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	1000 (@ $T_J = 90^\circ\text{C}$ ) <sup>[7]</sup>	mA
		1800 (@ 1KHz, 1/10 duty)	
Power Dissipation	$P_d$	4	W
Junction Temperature	$T_J$	145(@ $I_F \leq 700\text{mA}$ )	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[8]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

[1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.

[2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.

[3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram. CCT  $\pm 5\%$  tester tolerance.

[4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements

[5], [6]  $R\Theta_{J-B}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )

$R\Theta_{J-C}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )

Break voltage of Metal PCB is 6.5kVAC.

[7]  $I_F$  Max is guaranteed under the  $T_J \leq 90^\circ\text{C}$ .

[8] It is included the zener chip to protect the product from ESD.

-----Caution-----

**1. Please do not drive at rated current more than 5 sec. without proper heat sink.**

## Characteristics for Z-Power LED

### 2. Warm White (N42182)

2-1 Electro-Optical characteristics at  $I_F=350\text{mA}$ ,  $T_A=25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	66	-	lm
Correlated Color Temperature <sup>[3]</sup>	CCT	-	3000	-	K
CRI	$R_a$	-	93	-	-
Forward Voltage <sup>[4]</sup>	$V_F$	3.0	3.25	4	V
View Angle	$2\theta$ 1/2	124			deg.
Thermal resistance <sup>[5]</sup>	$R\theta_{J-B}$	8.8			$^\circ\text{C} / \text{W}$
Thermal resistance <sup>[6]</sup>	$R\theta_{J-C}$	7.2			$^\circ\text{C} / \text{W}$

### 2-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	800	mA
Power Dissipation	$P_d$	3.2	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[7]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT  $\pm 5\%$  tester tolerance
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R\theta_{J-B}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R\theta_{J-C}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
Break voltage of Metal PCB is 6.5kVAC
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

1. Please do not drive at rated current more than 5 sec. without proper heat sink

## Characteristics for Z-Power LED

### 3. Warm White (N42182H)

3-1 Electro-Optical characteristics at  $I_F=350\text{mA}$ ,  $T_A=25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	77	-	lm
Correlated Color Temperature <sup>[3]</sup>	CCT	-	3000	-	K
CRI	$R_a$	-	80	-	-
Forward Voltage <sup>[4]</sup>	$V_F$	3.0	3.25	4	V
View Angle	$2\theta$ 1/2	124			deg.
Thermal resistance <sup>[5]</sup>	$R\theta_{J-B}$	8.8			$^\circ\text{C} / \text{W}$
Thermal resistance <sup>[6]</sup>	$R\theta_{J-C}$	7.2			$^\circ\text{C} / \text{W}$

#### 3-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	800	mA
Power Dissipation	$P_d$	3.2	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[7]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT  $\pm 5\%$  tester tolerance
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R\theta_{J-B}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R\theta_{J-C}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
Break voltage of Metal PCB is 6.5kVAC
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

1. Please do not drive at rated current more than 5 sec. without proper heat sink



## Characteristics for Z-Power LED

### 4. Natural White (S42182)

4-1 Electro-Optical characteristics at  $I_F=350\text{mA}$ ,  $T_A=25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	72	-	lm
Correlated Color Temperature <sup>[3]</sup>	CCT	-	4000	-	K
CRI	$R_a$	-	93	-	-
Forward Voltage <sup>[4]</sup>	$V_F$	3.0	3.25	4	V
View Angle	$2\theta$ 1/2	124			deg.
Thermal resistance <sup>[5]</sup>	$R\theta_{J-B}$	8.8			$^\circ\text{C} / \text{W}$
Thermal resistance <sup>[6]</sup>	$R\theta_{J-C}$	7.2			$^\circ\text{C} / \text{W}$

4-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	800	mA
Power Dissipation	$P_d$	3.2	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[8]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram. CCT  $\pm 5\%$  tester tolerance.
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R\theta_{J-B}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R\theta_{J-C}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 Break voltage of Metal PCB is 6.5kVAC.
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

1. Please do not drive at rated current more than 5 sec. without proper heat sink

## Characteristics for Z-Power LED

### 5. Natural White (S42182H)

5-1 Electro-Optical characteristics at  $I_F = 350\text{mA}$ ,  $T_A = 25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	84	-	lm
Correlated Color Temperature <sup>[3]</sup>	CCT	-	4000	-	K
CRI	$R_a$	-	80	-	-
Forward Voltage <sup>[4]</sup>	$V_F$	3.0	3.25	4	V
View Angle	$2\theta$ 1/2	124			deg.
Thermal resistance <sup>[5]</sup>	$R_{\theta_{J-B}}$	8.8			$^\circ\text{C} / \text{W}$
Thermal resistance <sup>[6]</sup>	$R_{\theta_{J-C}}$	7.2			$^\circ\text{C} / \text{W}$

5-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	800	mA
Power Dissipation	$P_d$	3.2	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[8]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram. CCT  $\pm 5\%$  tester tolerance.
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R_{\theta_{J-B}}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R_{\theta_{J-C}}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 Break voltage of Metal PCB is 6.5kVAC.
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

1. Please do not drive at rated current more than 5 sec. without proper heat sink

## Characteristics for Z-Power LED

### 6. Blue (B42182)

6-1 Electro-Optical characteristics at  $I_F = 350\text{mA}$ ,  $T_A = 25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	22	-	lm
Dominant Wavelength <sup>[3]</sup>	$\lambda_D$	455	465	475	nm
Forward Voltage <sup>[4]</sup>	$V_F$	3.0	3.25	4	V
View Angle	$2\theta$ 1/2	130			deg.
Thermal resistance <sup>[5]</sup>	$R_{\theta_{J-B}}$	8.8			$^\circ\text{C} / \text{W}$
Thermal resistance <sup>[6]</sup>	$R_{\theta_{J-C}}$	7.2			$^\circ\text{C} / \text{W}$

### 6-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	1000	mA
Power Dissipation	$P_d$	4	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[7]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Dominant wavelength is derived from the CIE 1931 Chromaticity diagram.  
A tolerance of  $\pm 0.5\text{nm}$  for dominant wavelength
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R_{\theta_{J-B}}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R_{\theta_{J-C}}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
Break voltage of Metal PCB is 6.5kVAC
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

1. Please do not drive at rated current more than 5 sec. without proper heat sink
2. Blue power light sources represented here are IEC825 Class 2 for eye safety

## Characteristics for Z-Power LED

### 7. Royal Blue (D42182)

7-1 Electro-Optical characteristics at  $I_F = 350\text{mA}$ ,  $T_A = 25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Radiant Power <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	468	-	mW
Dominant Wavelength <sup>[3]</sup>	$\lambda_D$	455	457	460	nm
Forward Voltage <sup>[4]</sup>	$V_F$	3.0	3.25	3.8	V
View Angle	2 $\Theta$ 1/2	130			deg.
Thermal resistance <sup>[5]</sup>	$R\theta_{J-B}$	8.8			$^\circ\text{C}/\text{W}$
Thermal resistance <sup>[6]</sup>	$R\theta_{J-C}$	7.2			$^\circ\text{C}/\text{W}$

#### 7-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	1000	mA
Power Dissipation	$P_d$	4	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[7]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT  $\pm 5\%$  tester tolerance
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R\theta_{J-B}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R\theta_{J-C}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
Break voltage of Metal PCB is 6.5kVAC
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

1. Please do not drive at rated current more than 5 sec. without proper heat sink
2. Blue power light sources represented here are IEC825 Class 2 for eye safety

## Characteristics for Z-Power LED

### 8. Green (G42182)

8-1 Electro-Optical characteristics at  $I_F = 350\text{mA}$ ,  $T_A = 25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	70	-	lm
Dominant Wavelength <sup>[3]</sup>	$\lambda_D$	520	525	535	nm
Forward Voltage <sup>[4]</sup>	$V_F$	3.0	3.25	4.1	V
View Angle	$2\theta$ 1/2	130			deg.
Thermal resistance <sup>[5]</sup>	$R\theta_{J-B}$	9.5			$^\circ\text{C} / \text{W}$
Thermal resistance <sup>[6]</sup>	$R\theta_{J-C}$	8.0			$^\circ\text{C} / \text{W}$

### 8-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	1000	mA
Power Dissipation	$P_d$	4	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[7]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Dominant wavelength is derived from the CIE 1931 Chromaticity diagram.  
A tolerance of  $\pm 0.5\text{nm}$  for dominant wavelength
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R\theta_{J-B}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R\theta_{J-C}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
Break voltage of Metal PCB is 6.5kVAC
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

**1. Please do not drive at rated current more than 5 sec. without proper heat sin**

## Characteristics for Z-Power LED

### 9. Red (R42182)

9-1 Electro-Optical characteristics at  $I_F=350\text{mA}$ ,  $T_A=25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	48	-	lm
Dominant Wavelength <sup>[3]</sup>	$\lambda_D$	618	625	630	nm
Forward Voltage <sup>[4]</sup>	$V_F$	2.0	2.3	3.0	V
View Angle	$2\Theta$ 1/2	130			deg.
Thermal resistance <sup>[5]</sup>	$R\theta_{J-B}$	9			$^\circ\text{C} / \text{W}$
Thermal resistance <sup>[6]</sup>	$R\theta_{J-C}$	7.8			$^\circ\text{C} / \text{W}$

### 9-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	800	mA
Power Dissipation	$P_d$	2.4	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[7]</sup>	-	$\pm 10,000\text{V}$ HBM	-

\* Notes :

- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Dominant wavelength is derived from the CIE 1931 Chromaticity diagram.  
A tolerance of  $\pm 0.5\text{nm}$  for dominant wavelength
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R\theta_{J-B}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R\theta_{J-C}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
Break voltage of Metal PCB is 6.5kVAC
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

1. Please do not drive at rated current more than 5 sec. without proper heat sink

## Characteristics for Z-Power LED

### 10. Amber (A42182)

10-1 Electro-Optical characteristics at  $I_F = 350\text{mA}$ ,  $T_A = 25^\circ\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	48	-	lm
Dominant Wavelength <sup>[3]</sup>	$\lambda_D$	585	590	595	nm
Forward Voltage <sup>[4]</sup>	$V_F$	2.0	2.3	3.0	V
View Angle	$2\theta$ 1/2	130			deg.
Thermal resistance <sup>[5]</sup>	$R\theta_{J-B}$	9			$^\circ\text{C} / \text{W}$
Thermal resistance <sup>[6]</sup>	$R\theta_{J-C}$	7.8			$^\circ\text{C} / \text{W}$

### 10-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	$I_F$	800	mA
Power Dissipation	$P_d$	2.4	W
Junction Temperature	$T_j$	145	$^\circ\text{C}$
Operating Temperature	$T_{opr}$	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
ESD Sensitivity <sup>[7]</sup>	-	$\pm 10,000\text{V HBM}$	-

\* Notes :

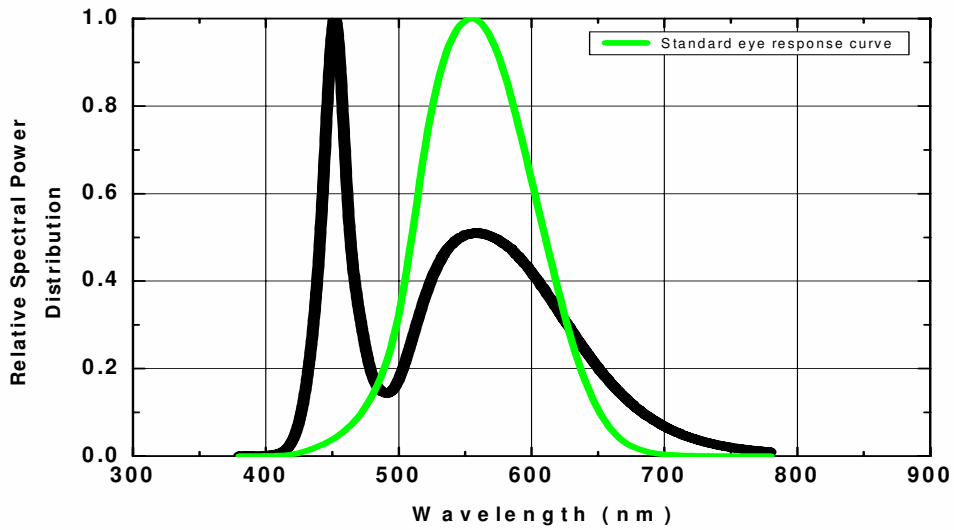
- [1] SSC maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Dominant wavelength is derived from the CIE 1931 Chromaticity diagram.  
A tolerance of  $\pm 0.5\text{nm}$  for dominant wavelength
- [4] A tolerance of  $\pm 0.06\text{V}$  on forward voltage measurements
- [5], [6]  $R\theta_{J-B}$  is measured with a SSC metal core pcb. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
 $R\theta_{J-C}$  is measured with only emitter. ( $25^\circ\text{C} \leq T_J \leq 110^\circ\text{C}$ )  
Break voltage of Metal PCB is 6.5kVAC
- [7] It is included the zener chip to protect the product from ESD.

-----Caution-----

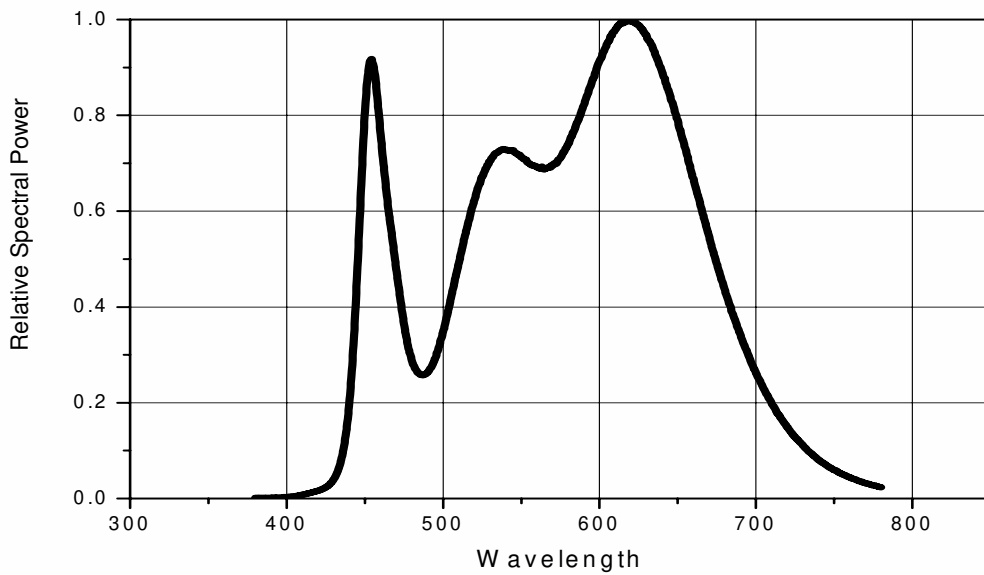
1. Please do not drive at rated current more than 5 sec. without proper heat sink

## Color Spectrum, $T_A = 25^\circ\text{C}$

### 1. Pure White



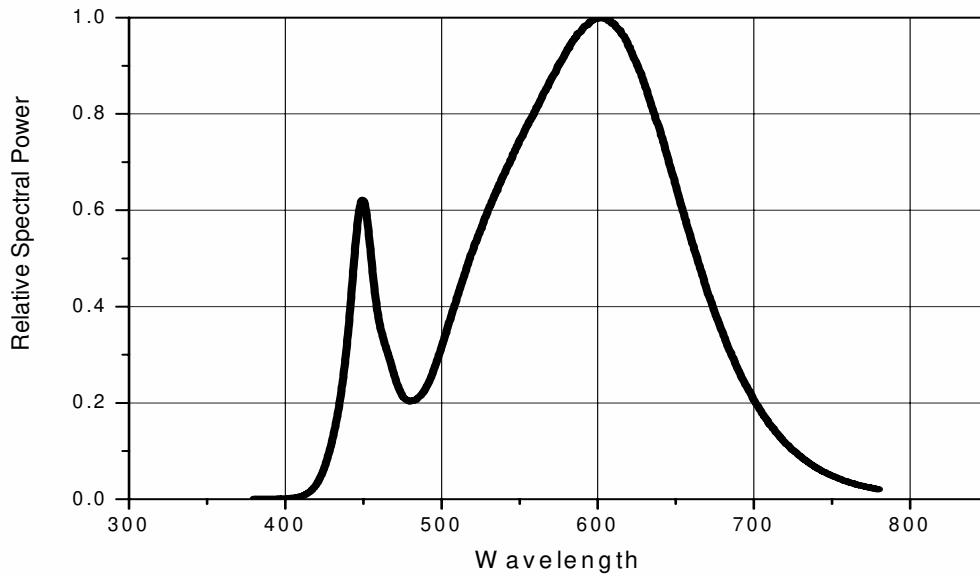
### 2. Warm White (N42182)



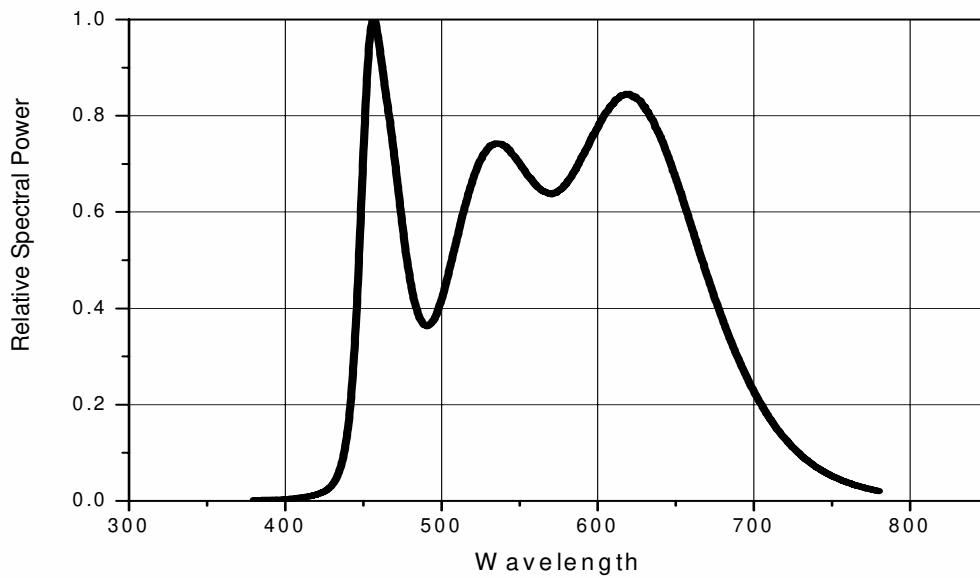


Color Spectrum,  $T_A=25^\circ\text{C}$

3. Warm White (N42182H)

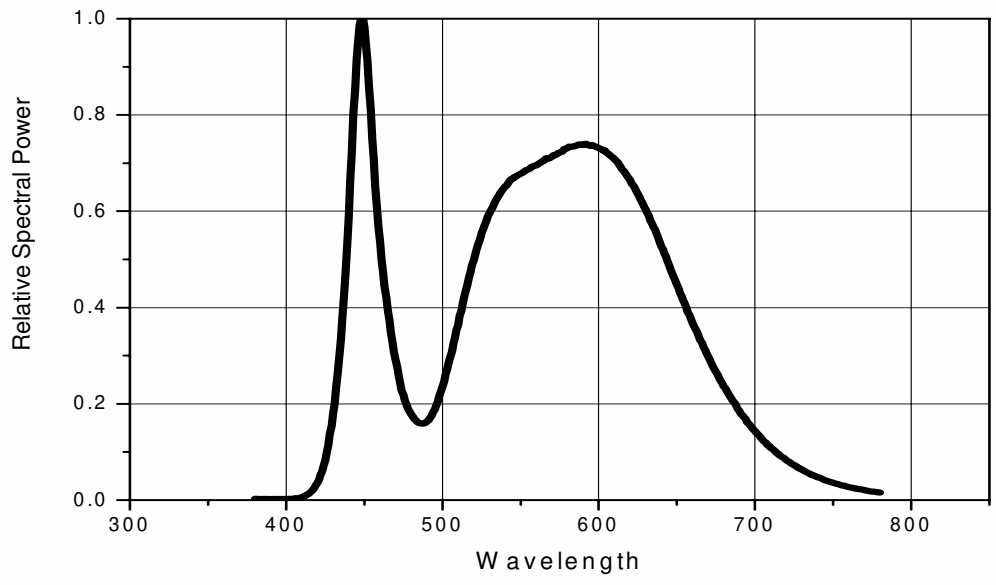


4. Natural White (S42182)

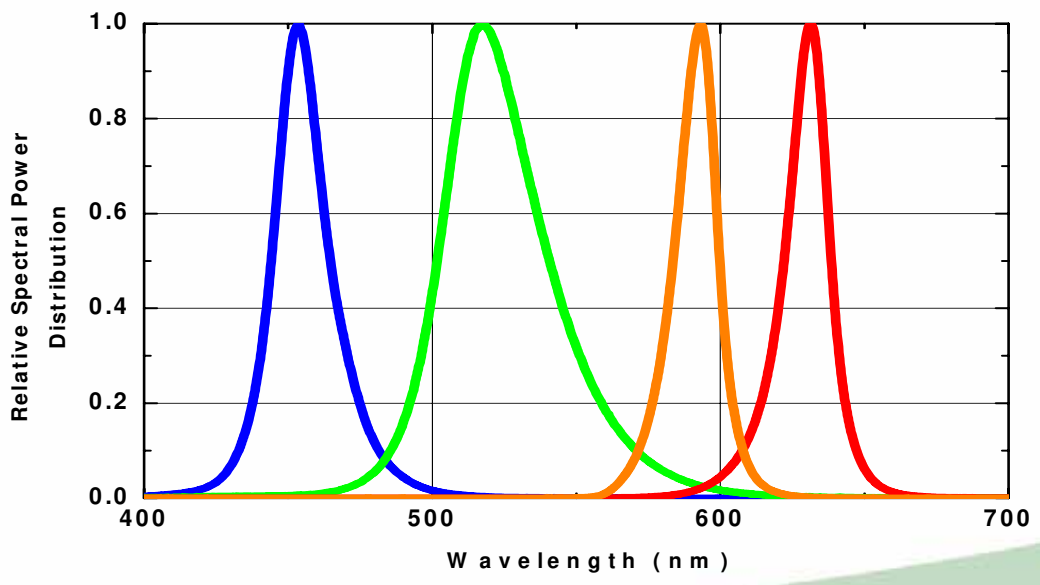


Color Spectrum,  $T_A = 25^\circ C$

5. Natural White (S42182H)

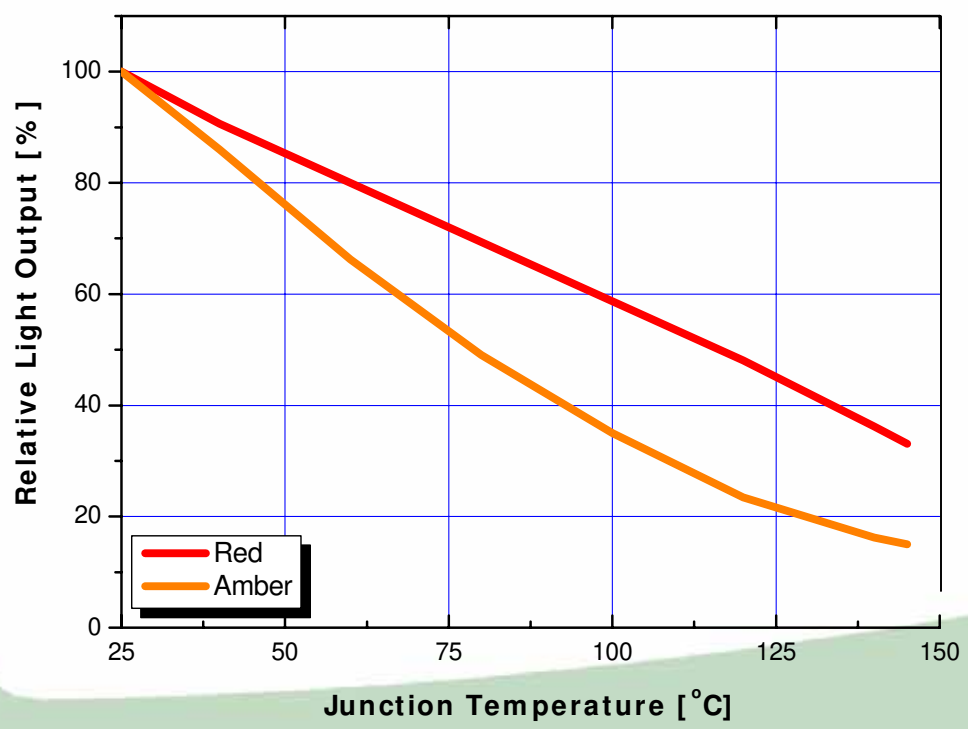
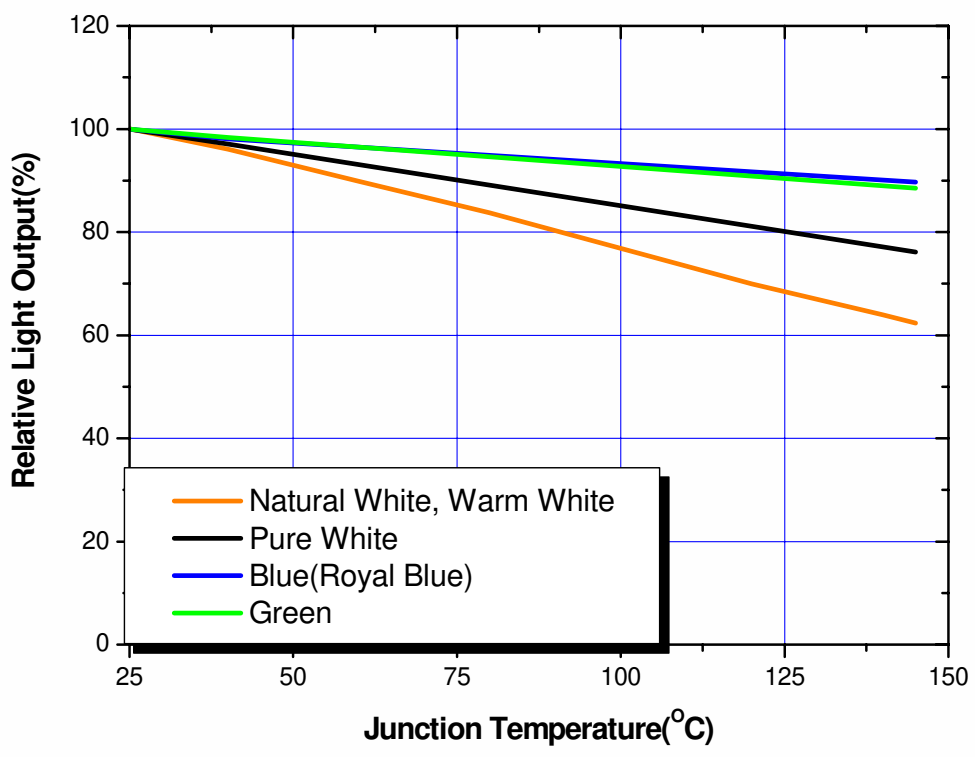


5. Red, Amber, Green, Blue(Royal Blue)



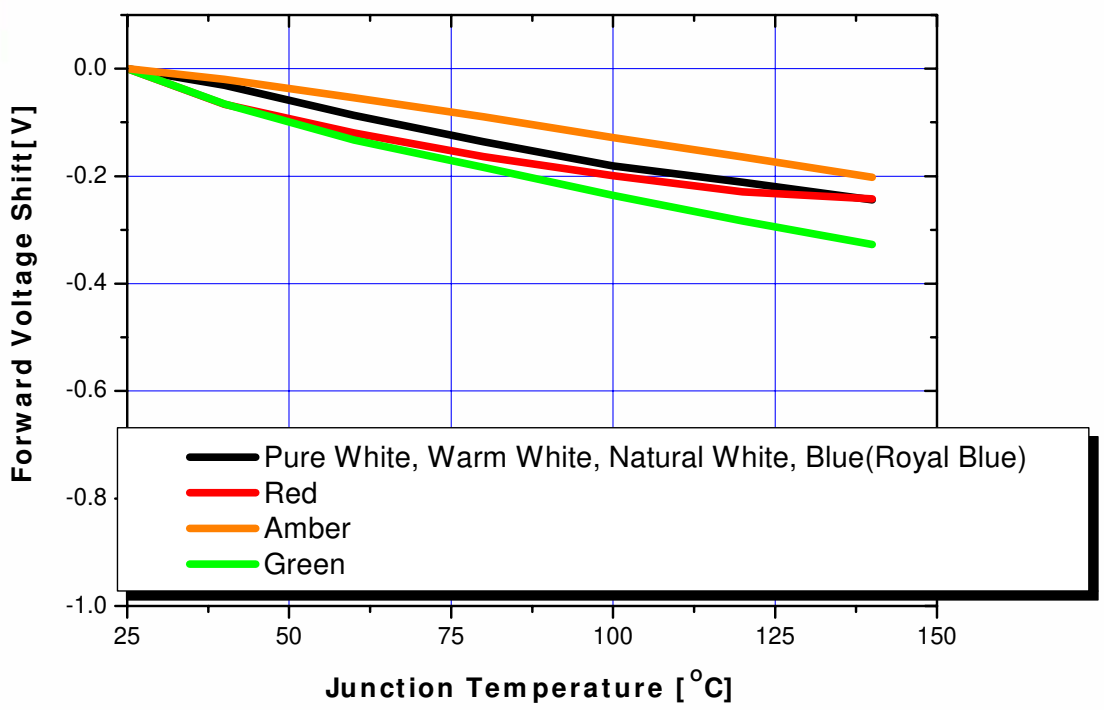
## Junction Temperature Characteristics

### 1. Relative Light Output vs. Junction Temperature at $I_F = 350\text{mA}$

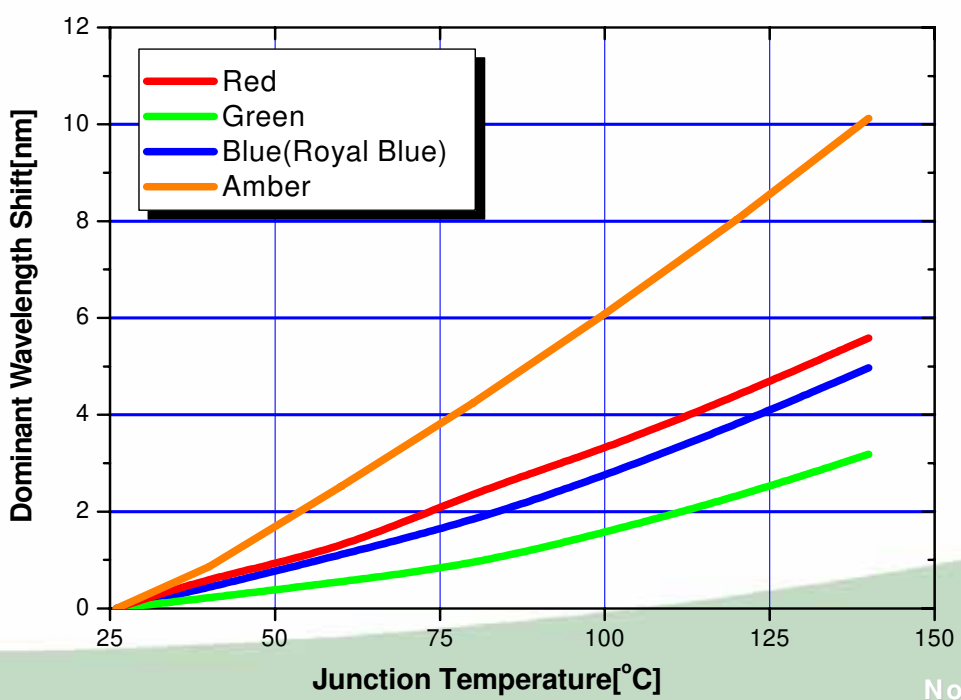


## Junction Temperature Characteristics

### 2. Forward Voltage Shift vs. Junction Temperature at $I_F = 350\text{mA}$

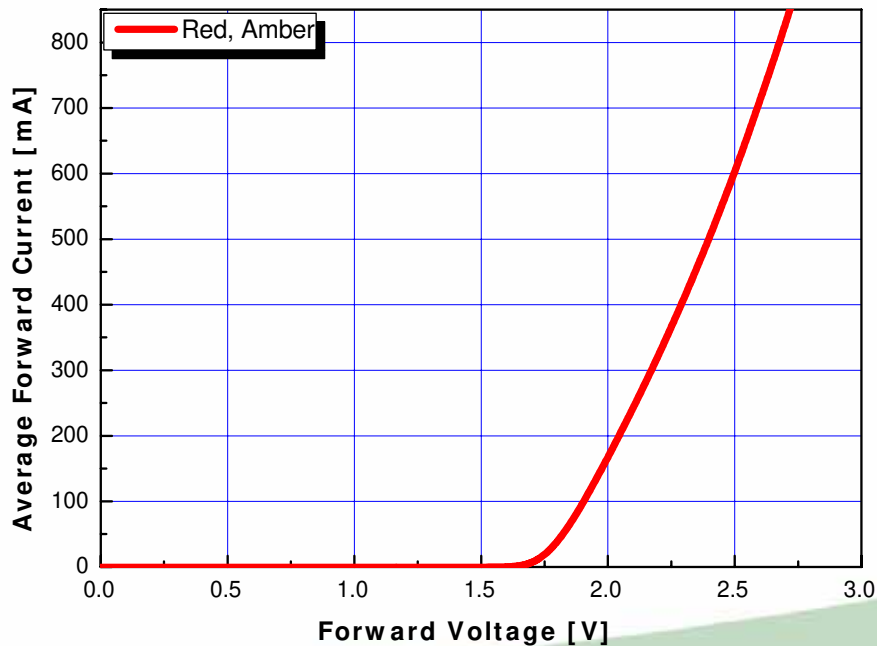
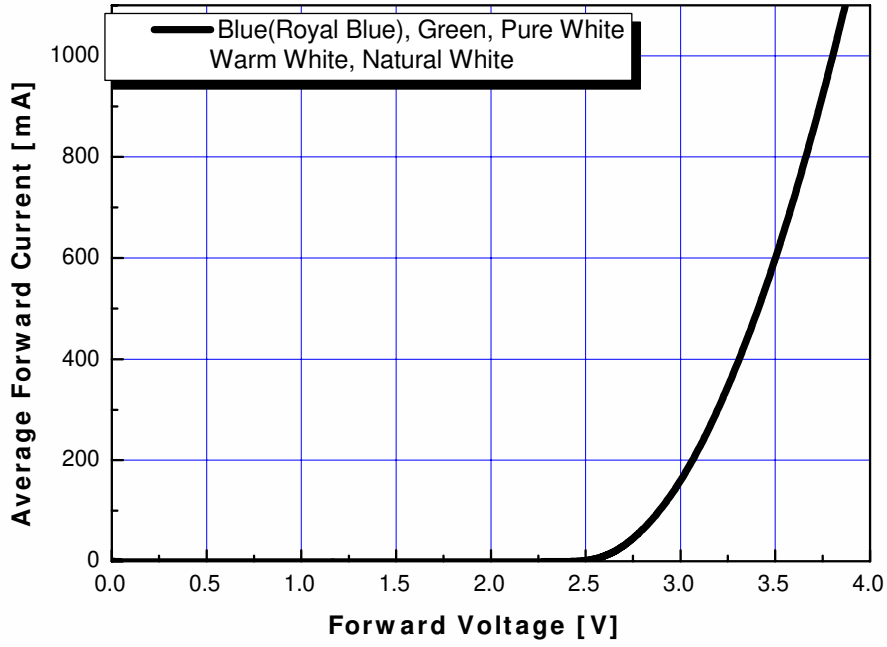


### 3. Wavelength Shift vs Junction Temperature at $I_F = 350\text{mA}$



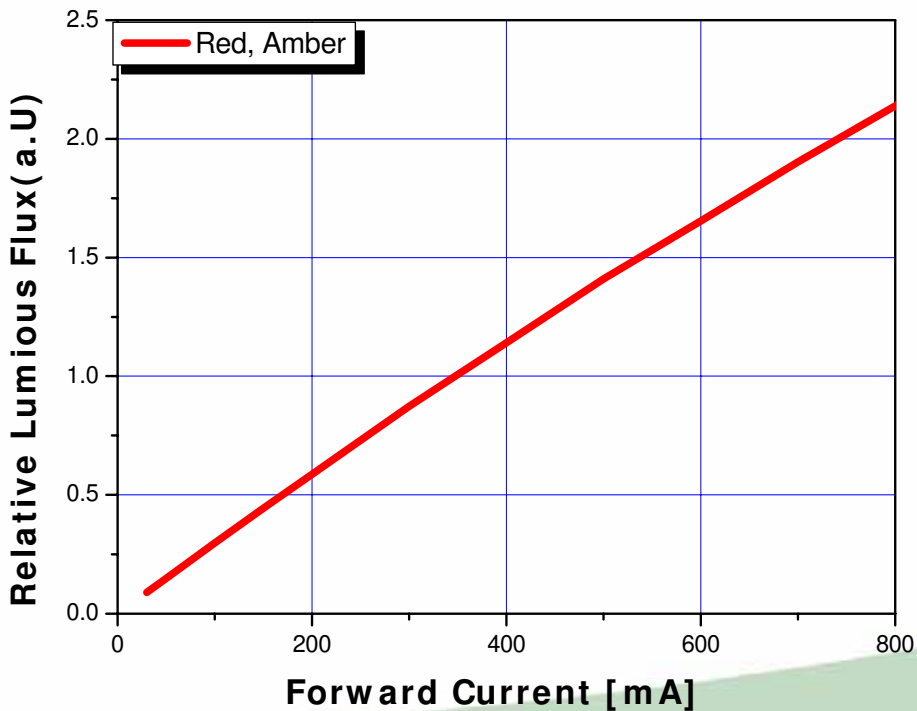
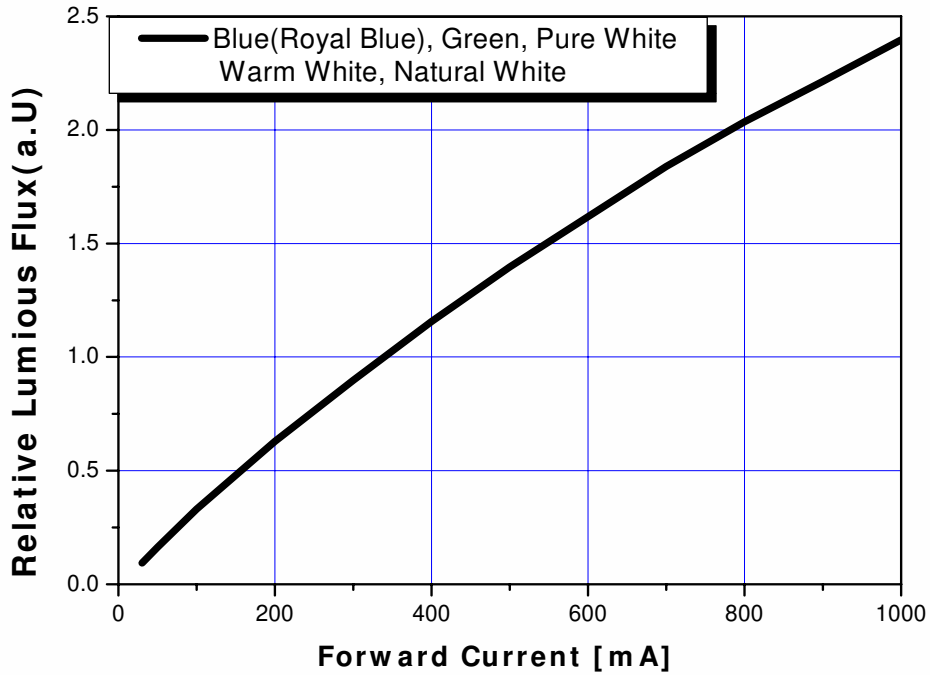
## Forward Current Characteristics

### 1. Forward Voltage vs. Forward Current , $T_A = 25^\circ\text{C}$



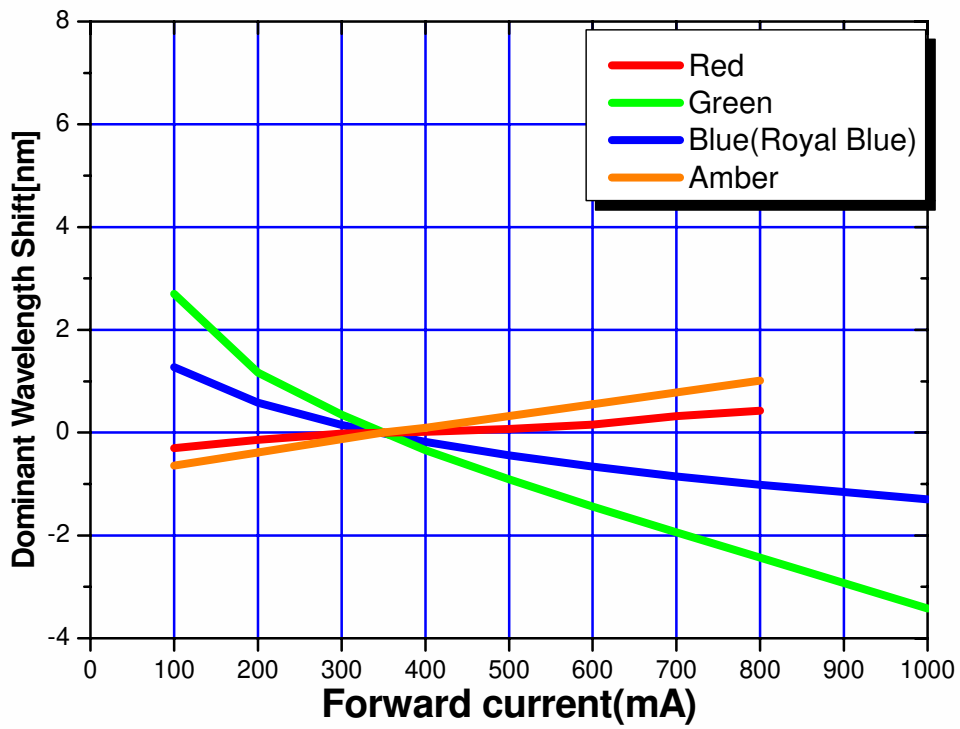
## Forward Current Characteristics

### 2. Forward Current vs. Normalized Relative Luminous Flux, $T_A = 25^\circ\text{C}$



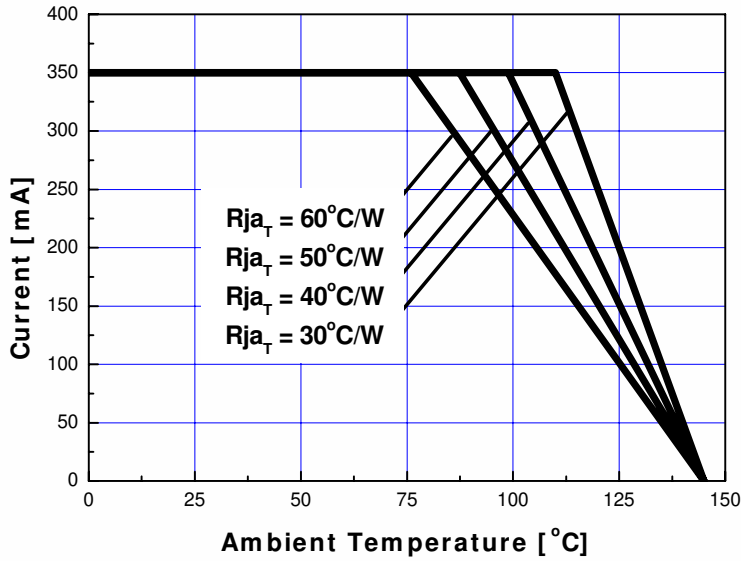
### Forward Current Characteristics

#### 3. Forward Current vs Wavelength Shift, $T_A = 25^\circ\text{C}$

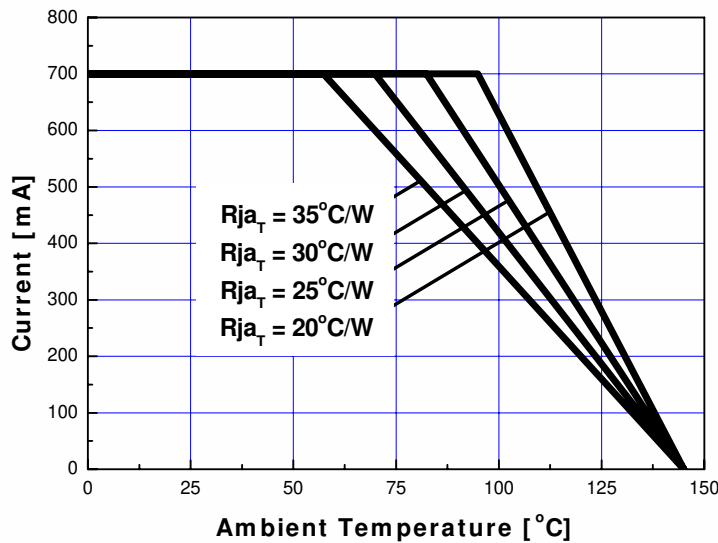


## Ambient Temperature vs Allowable Forward Current

### 1-1. Pure White, Warm White, Natural White, Green, Blue(Royal Blue) ( $T_{JMAX} = 145\text{ }^{\circ}\text{C}$ , @350mA)



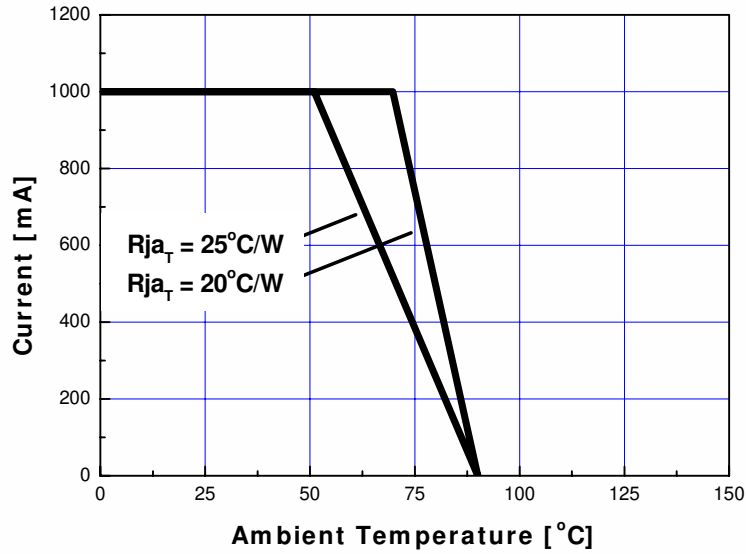
### 1-2. Pure White, Warm White, Natural White, Green, Blue(Royal Blue) ( $T_{JMAX} = 145\text{ }^{\circ}\text{C}$ , @700mA)





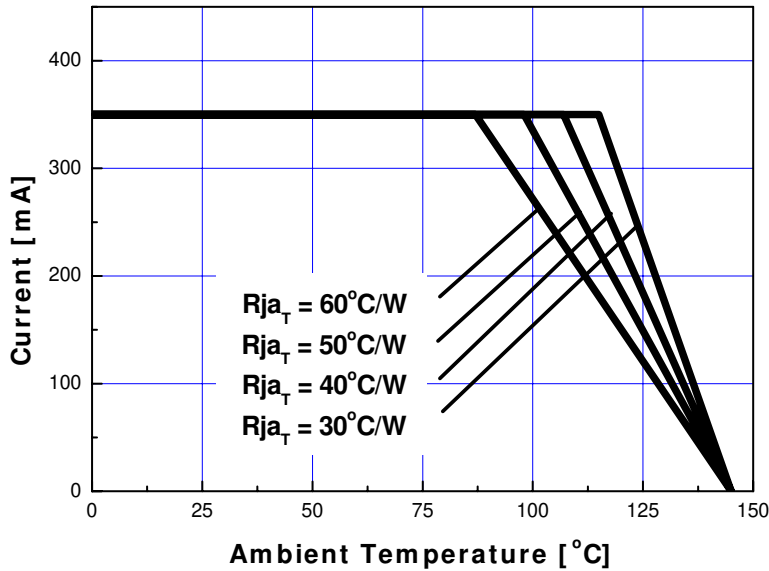
## Ambient Temperature vs Allowable Forward Current

1-3. Pure White, Green, Blue(Royal Blue)  
 ( $T_{JMAX} = 90\text{ }^{\circ}\text{C}$ , at 1000mA)



## Ambient Temperature vs Allowable Forward Current

### 1-4. Red, Amber ( $T_{JMAX} = 145\text{ }^{\circ}\text{C}$ , at 350mA)



### 1-5. Red, Amber ( $T_{JMAX} = 145\text{ }^{\circ}\text{C}$ , @700mA)

