

Power Light Source Luxeon LED 1W Emitter

Introduction:

LuxeonLED is the new generation high brightness LED for solid state lighting. Due to the special design of chip and package, the LuxeonLED has excellent thermal and optical properties. This series is design for easily manufacturing in the light module and system. LuxeonLED keeps the customers in pole position in solid state lighting industry.



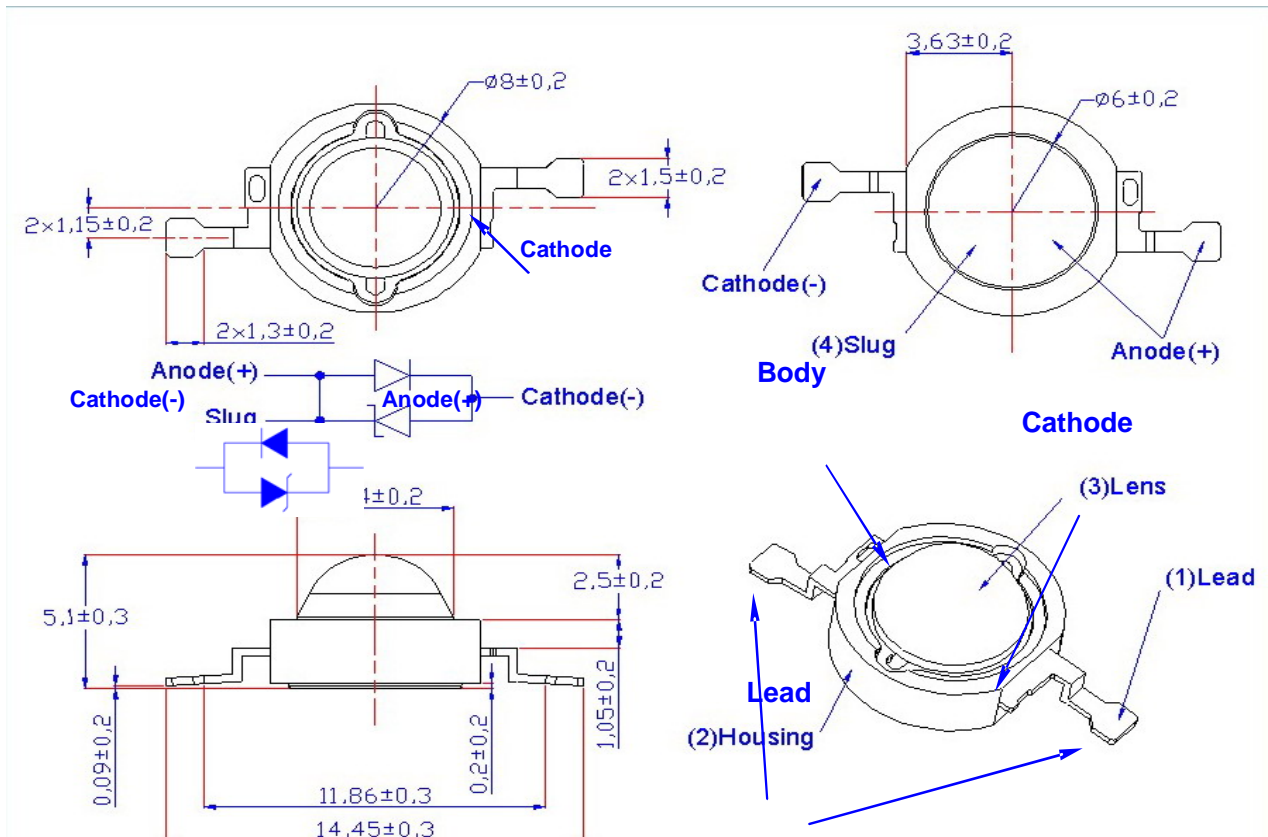
Features:

- Long operating life
- Energy efficiency
- Low thermal resistance
- Compact design
- SMT device
- Compatible to lead free process
- Instant light
- Fully dimmable
- No UV
- Superior ESD protection
- RoHS compliance
- Wide CCT range from 2850 to 10000K
- Comprehensive white light binning

Typical Applications:

- Reading lights
- Portable light
- Orientation
- Entertainment
- Garden
- Security light
- Ceiling light
- Architectural lighting
- Backlighting
- General lighting
- Jewel display illumination

1. Mechanical Dimensions



Notes:

- (1). Drawings are not to scale.
- (2). All dimensions are in millimeter.
- (3). General tolerance is ± 0.2 mm.
- (4). The polarity of metal part at bottom is anode; please make sure setting the correct polarity after assembly process.
- (5). The cathode is denoted by the bar (minus sign) on plastic body.

2. Absolute Maximum Ratings

Parameter	White series	Blue / Green	Red
	Value	Value	Value
DC Forward Current (mA)	350	350	350
Peak Pulse Current (mA)	500	500	500
Power Dissipation (W)	1.3	1.3	1.2
LED Junction Temperature	125°C	125°C	125°C
Storage Temperature	120°C	120°C	120°C
Soldering Temperature	JEDEC 020c 260°C	JEDEC 020c 260°C	JEDEC 020c 260°C
Allowable Reflow Cycle	3	3	3
Reverse Voltage	Not design to be driven in reverse bias		

3. General Characteristics at 350mA

3.1 Luminous Flux at 350mA, T_a=25°C

Color	Part Number	Minimum	Typical	Light Pattern
		Luminous Flux(lm) or Radiometric Power(mW)	Luminous Flux(lm) or Radiometric Power(mW)	
Daylight	POEW-2A0C-00	40	60	Lambertian
Cool White	POEL-2A0C-00	40	60	
Warm White	POEM-2A0C-00	25	35	
	POEM-2AAC-00	30	45	
Royal Blue	POED-2A0C-00	140 mW	220 mW	
Blue	POEB-2A0C-00	5	16	
Green	POEG-2A0C-00	30	50	
Red	POER-2A0C-00	25	30	

Notes:

- (1). Luminous flux is measured with an accuracy of ±10%
- (2). Royal Blue product is binned by radiometric power and peak wavelength rather than photometric lumens and dominant wavelength.

3.2 Optical Characteristics at 350mA, T_a=25°C

Light Pattern	Color	Dominant Wavelength λ_d Peak Wavelength λ_p or Correlated Color Temperature CCT			Spectral Half-width (nm)	Temperature Coefficient of λ_d (nm/°C)	Viewing Angle Degree
		Min.	Typ.	Max.	$\Delta\lambda_{1/2}$	$\Delta\lambda_d/\Delta T_j$	$2\theta_{1/2}$
	Daylight	5000 K	6300 K	10000 K	--	--	
	Cool White	3800 K	4000 K	5000 K	--	--	
	Warm White	2850 K	3300 K	3800 K	--	--	
Lambertian	Royal Blue	440 nm	455 nm	460 nm	20	0.04	120
	Blue	460 nm	470 nm	490 nm	25	0.04	
	Green	520 nm	530 nm	550 nm	35	0.04	
	Red	620 nm	627 nm	645 nm	20	0.05	

Notes:

- (1). Dominant wavelength is measured with ± 1 nm.
- (2). Royal blue product is binned by radiometric power and peak wavelength rather than photometric lumens and dominant wavelength. Helios Crew maintains a tolerance of ± 2 nm for peak wavelength measurements.
- (3). CCT $\pm 5\%$ tester tolerance.

3.3 Electrical Characteristics at 350Ma, T_a=25°C

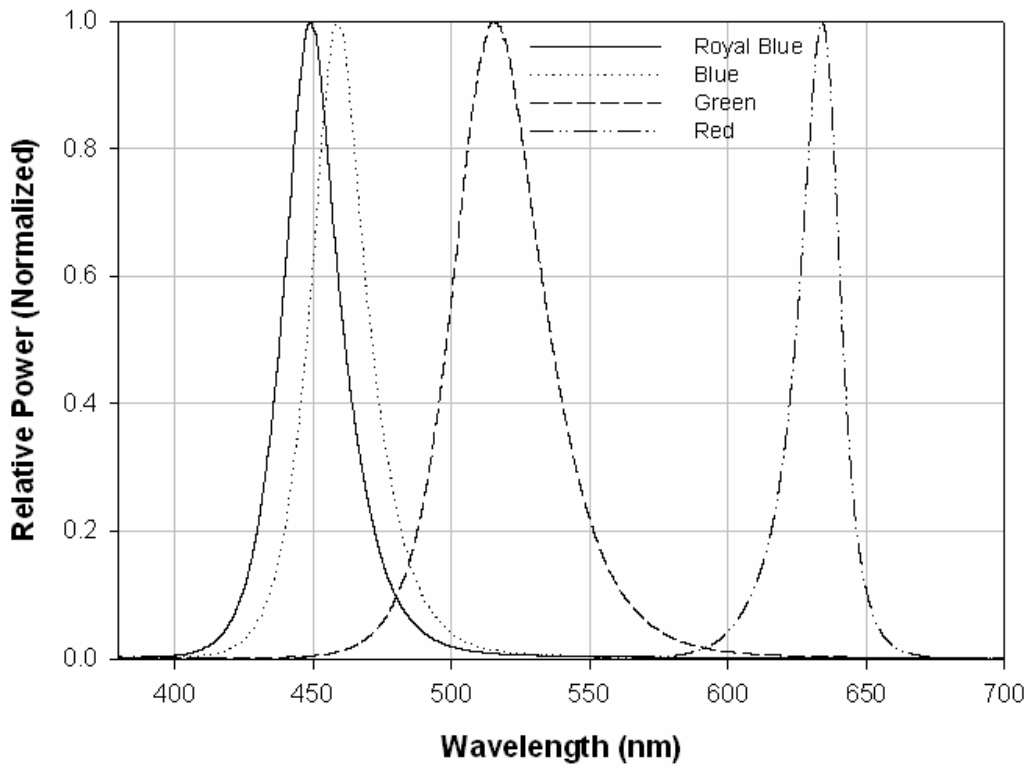
Light Pattern	Color	Forward Voltage V _F (V)			Temperature Coefficient of V _F (mV/°C)	Thermal Resistance Junction to lead
		Min.	Typ.	Max.	$\Delta V_F/\Delta T_j$	(°C/W) R θ_{J-L}
	Daylight	2.8	3.4	3.8	-3	5
	Cool White	2.8	3.4	3.8	-3	5
	Warm White	2.8	3.4	3.8	-3	5
Lambertian	Royal Blue	2.8	3.4	3.8	-3	5
	Blue	2.8	3.4	3.8	-3	5
	Green	2.8	3.4	3.8	-3	5
	Red	2.2	2.5	3.4	-3	10

Notes:

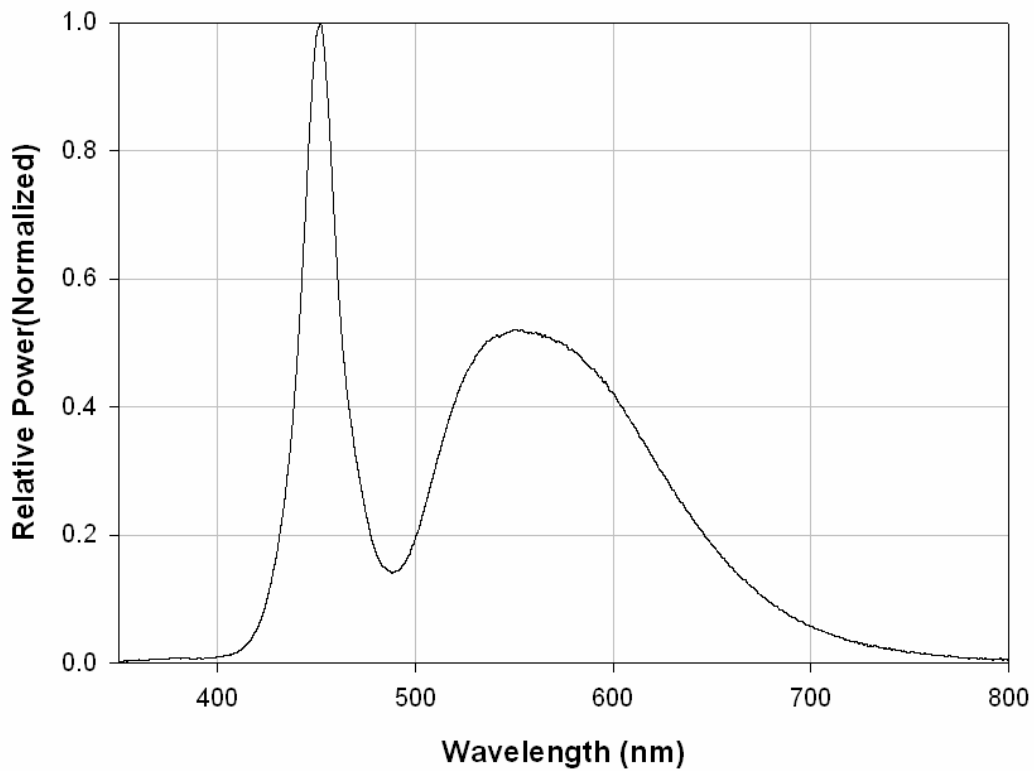
- (1). V_F ± 0.1 V tester tolerance

4. Wavelength Spectrum, $T_a=25\text{ }^\circ\text{C}$

4.1 Royal Blue / Blue / Green / Red

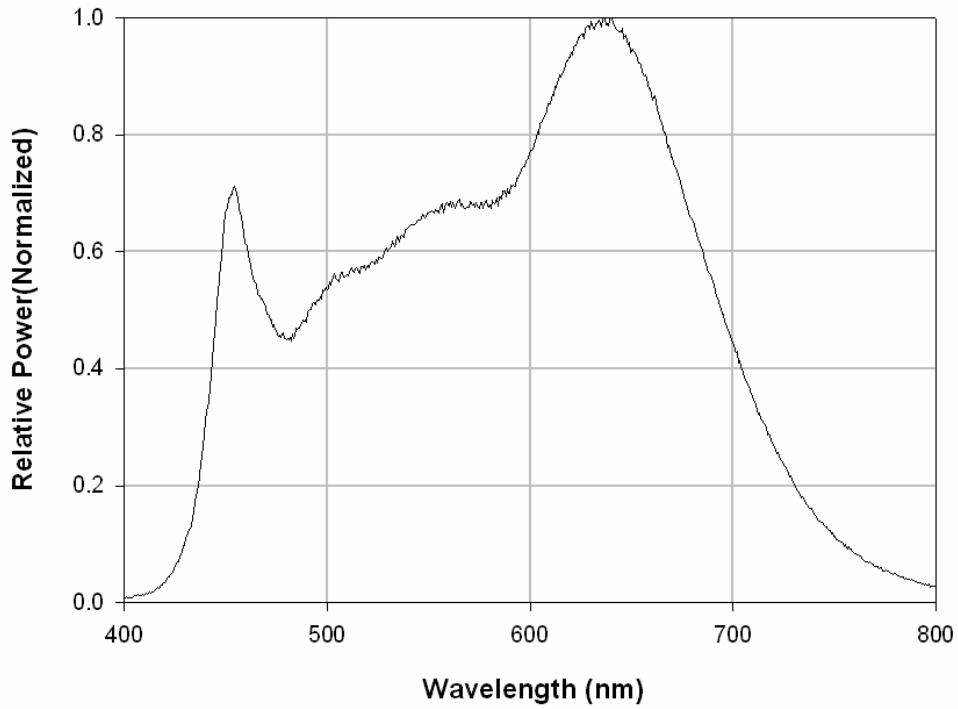


4.2 Daylight / Cool White

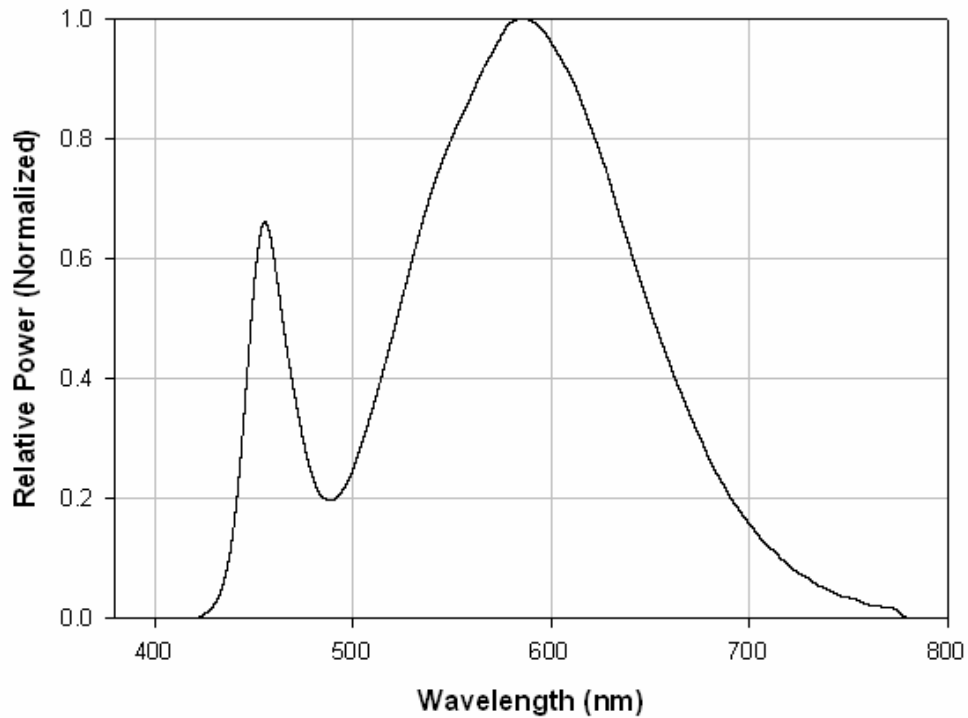


4.3 Warm White

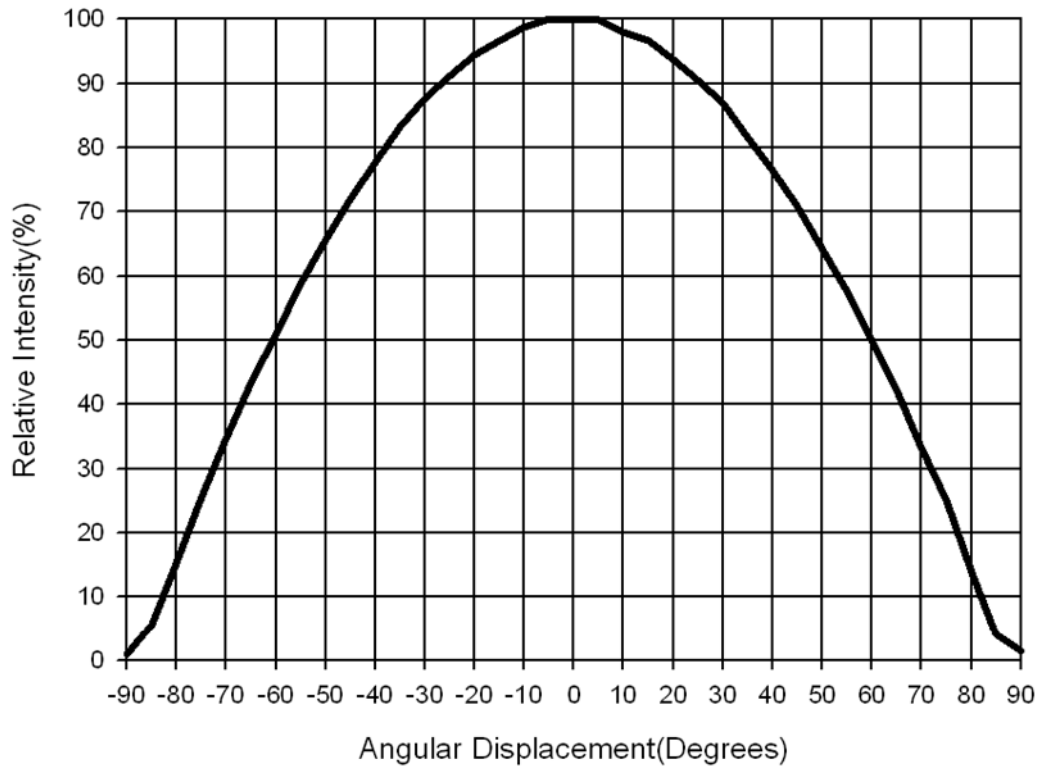
4.3.1 POEM-2A0C-00 Series



4.3.2 POEM-2AAC-00 Series

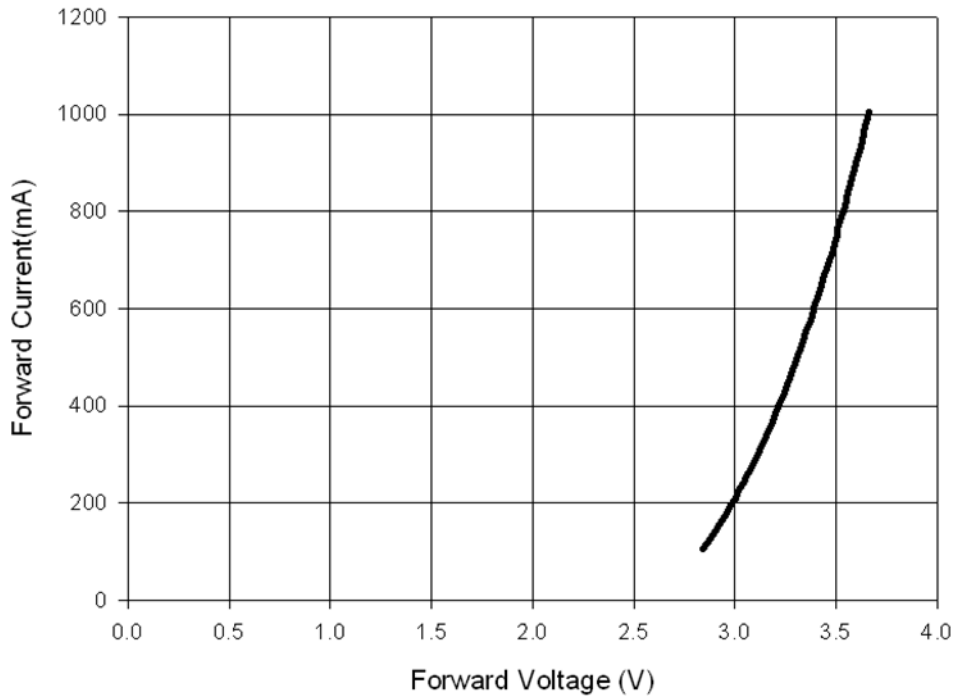


5. Typical Spatial Radiation Pattern

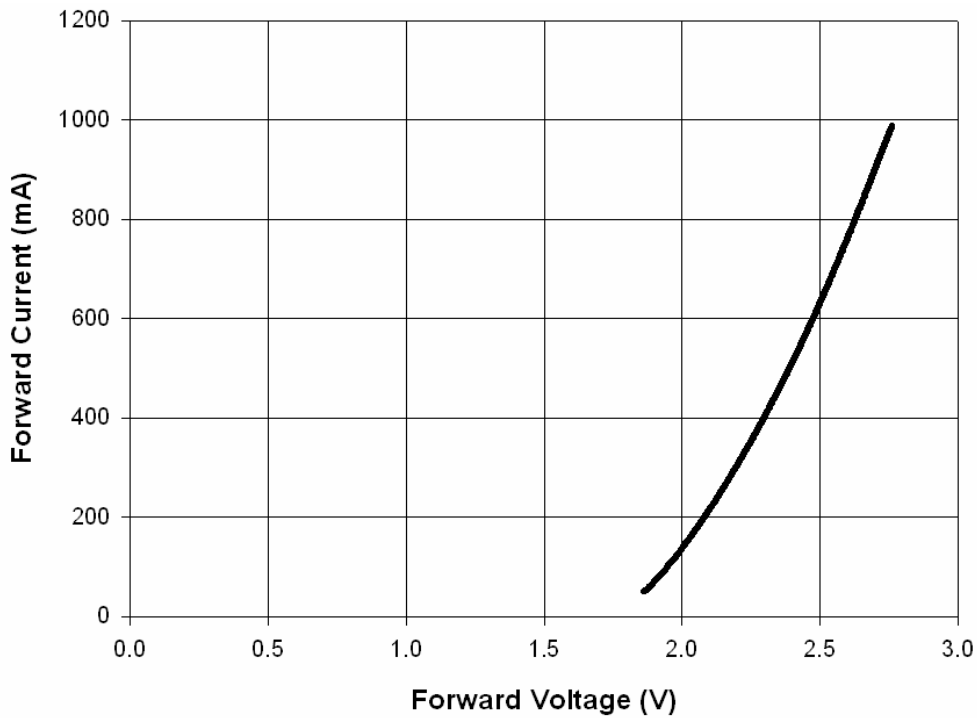


6. Forward I-V Characteristics

6.1 White Series / Royal Blue / Blue / Green

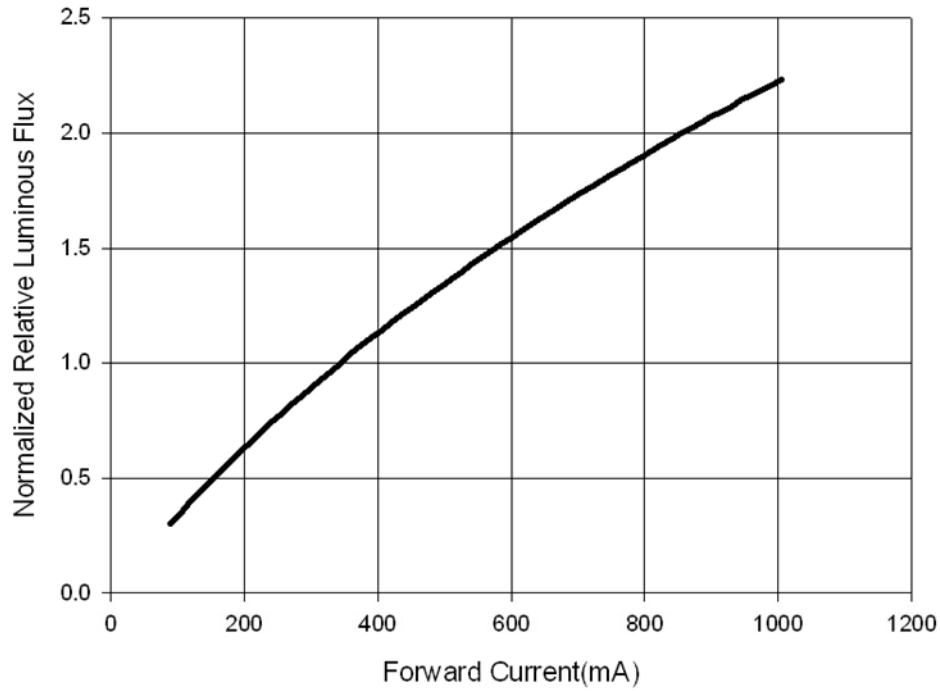


6.2 Red

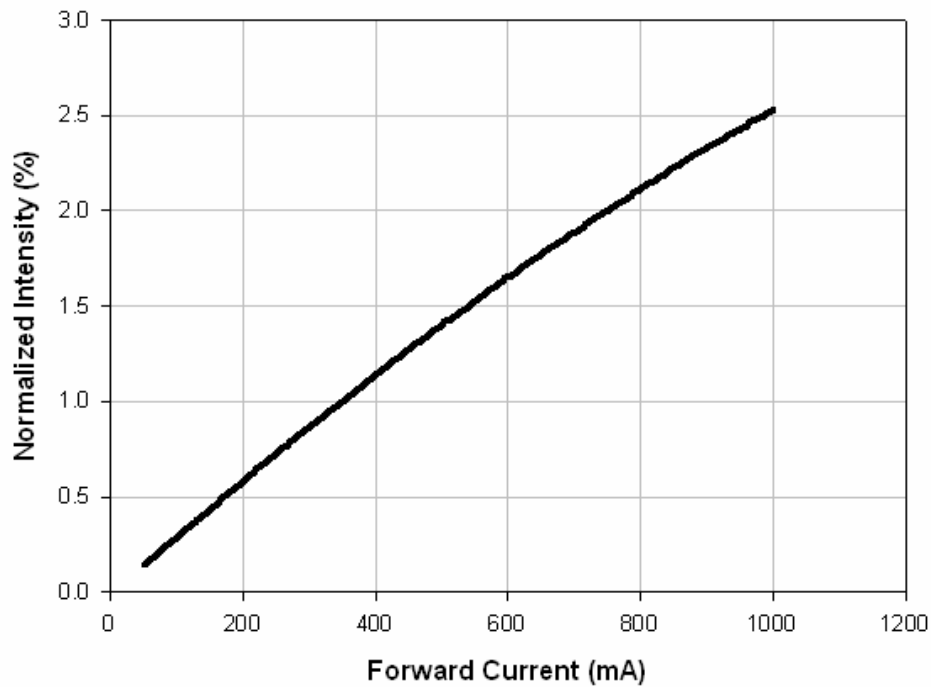


7. Forward L-I Characteristics

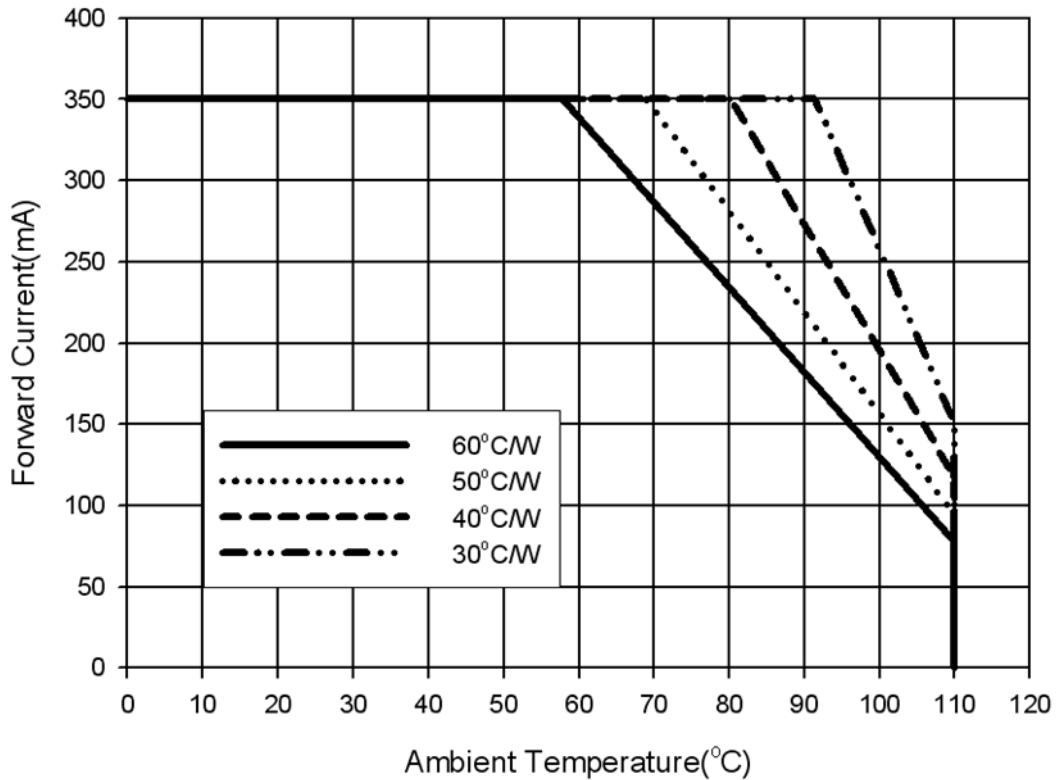
7.1 White Series / Royal Blue / Blue / Green



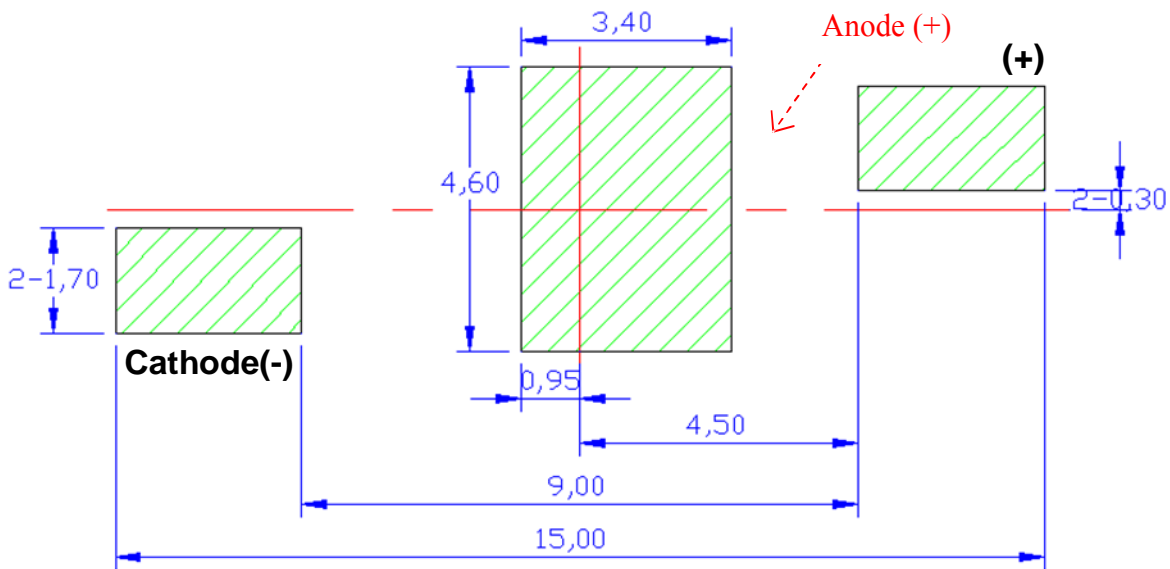
7.2 Red



8. Current Derating Curves



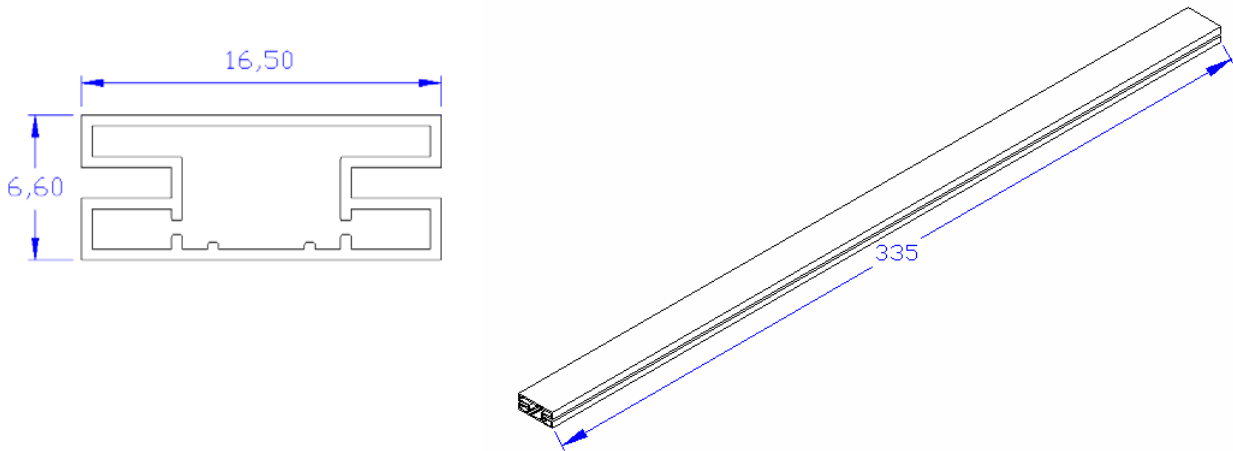
9. Recommended Solder Pad Design



Notes:

- (1). Drawing is not to scale.
- (2). All dimensions are in millimeter.
- (3). The center pad polarity is anode, please make sure that the polarity is correct as pad design and assembly process.

10. Shipping Package Information



Level	Dimensions (L*W*H)	Emitter Quantity
Tube	335*16.5*6.6 mm	50 EA

11. Recommended Lead-Free Soldering Condition

