

Tpower LED full color Series

Model No: ZL-T1EO3T0

Spec No:

Tpower LED series is designed for higher current operation and super high flux output applications. It's easy and free to design applications by package SMD design and its special color management. For high volume applications, custom Xpower designs are available upon request, to meet specific needs.

Features

1. Highest luminous flux output
2. Long operating lifetime (up to 100,000 hours)
3. More energy efficient than incandescent and most halogen lamps
4. Low forward voltage operated
5. Instant light (Less than 100ns)
6. No UV
7. Superior ESD protection
8. Available in Pure White, Warm White, Green, Blue, Royal Blue, Red and Amber
9. SMT design

Typical Applications

1. Portable flashlight
 2. Automotive lights
 3. Reading lights
 4. LCD TV / Monitor backlight
 5. Indoor and Outdoor Commercial lighting
 6. Decorative/Entertainment lighting
 7. General lighting
- ...

Part Number of Tpower LED Series

Code form: ZL-X₁X₂X₃X₄X₅X₆-X₇ X₈ X₉

-X1: Power LED type

- Xi, Xpower SMT high power LED series
- Gi, Gpower PCB high power LED series
- Ti, Topview high power LED series
- Hi, Hpower MVPCB & no lens high power LED series

-X2 : Xpower series heatsink type

- E, Xpower emitter series (no heatsink)
- H, Hexagon Star heatsink type series
- Q, Quadrangle Star heatsink type series
- R, Round heatsink type series

-X3 : Lens Type

- Bi, Batwing type (120° Angle $2\theta_{1/2}$)
- Li, Lambertian type (140° Angle $2\theta_{1/2}$)
- Si, Side emitting type (80° Angle θ_{peak})
- O, No lens type (120° Angle $2\theta_{1/2}$)

-X4: Power

- H, 0.5W power LED, half of 1W power
- 1, 1W power LED
- 3, 3W power LED
- A, 10 W power LED

-X5: Color

- W, Pure white color (CCT 4500-10000K)
- L, Warm white color (CCT 3000-4500K)
- R, Red color (620-630nm)
- A, Amber color (585-595nm)
- B, Blue color (455-475nm)
- G, Green color (520-535nm)
- T, Full color

-X6: Number

0,1,2,3...

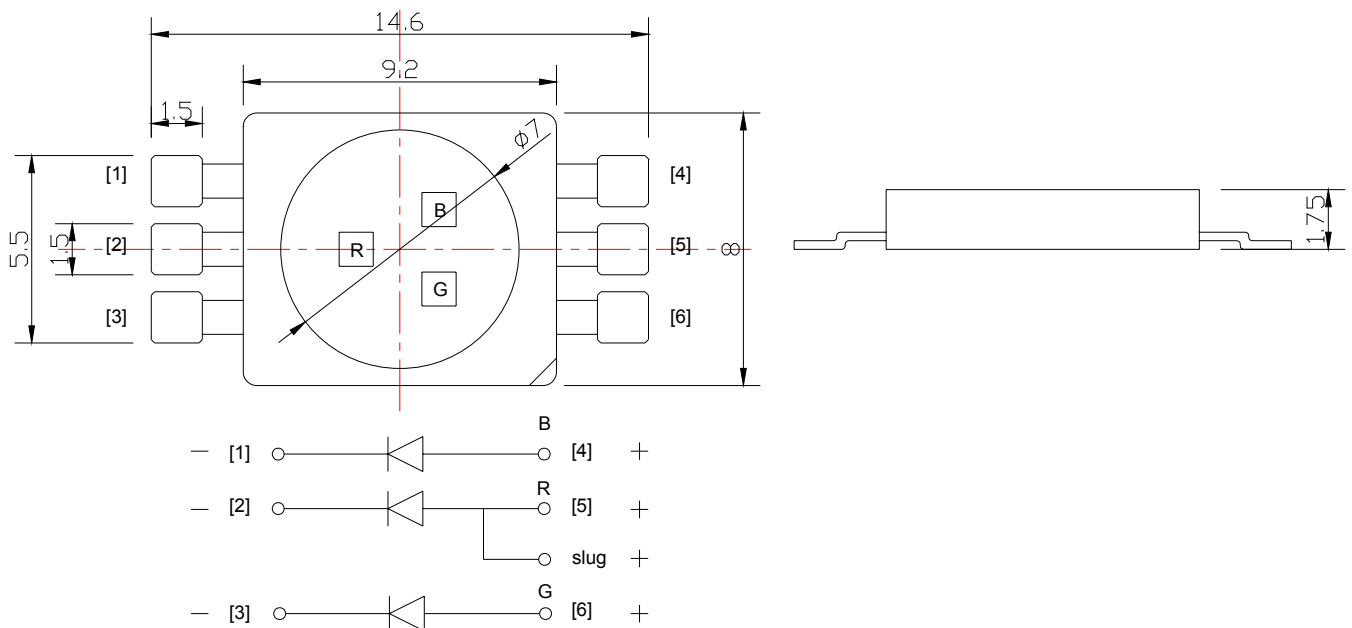
-X7: Chip quantity

- 1, one chip
- 2, two chips
- ...
- 9, nine chips
- A, ten chips

-X8: Chip size

-X9: Chip provider

Mechanical Dimensions for Tpower Emitter series



Notes:

1. All dimensions are in millimeters.
2. All dimensions without tolerances are ± 0.2 .
3. The package material of the body is heat-resistance polymer, and the plating material of the lead frame is Ag.

Characteristics for Tpower full color series

1. Typical Electrical & Optical Characteristics at $I_F=350\text{mA}$, $T_A = 25^\circ\text{C}$

Parameter	Symbol		Value			Unit
			Min.	Typ.	Max.	
Luminous Flux	Φ_V	R	-	40	-	lm
		G	-	60	-	
		B	-	12	-	
Dominant Wavelength	λ_D	R	620	-	630	nm
		G	520	-	530	
		B	465	-	470	
Forward Voltage	V_F	R	-	2.4	-	V
		G	-	3.6	-	
		B	-	3.6	-	
View Angle	2θ 1/2		120			deg.

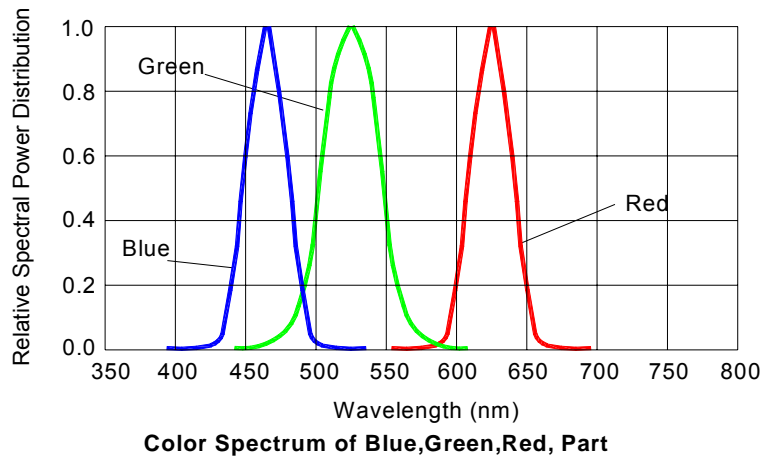
2. Absolute Maximum Ratings

Parameter	Symbol		Value	Unit
Forward Current	I_F		400	mA
Power Dissipation	P_D	R	1.2	W
		G	1.6	
		B	1.6	
Junction Temperature	T_J		125	$^\circ\text{C}$
Operating Temperature	T_{opr}		-30~80	$^\circ\text{C}$
Storage Temperature	T_{stg}		-40~85	$^\circ\text{C}$
ESD Sensitivity	-		1000	V HBM

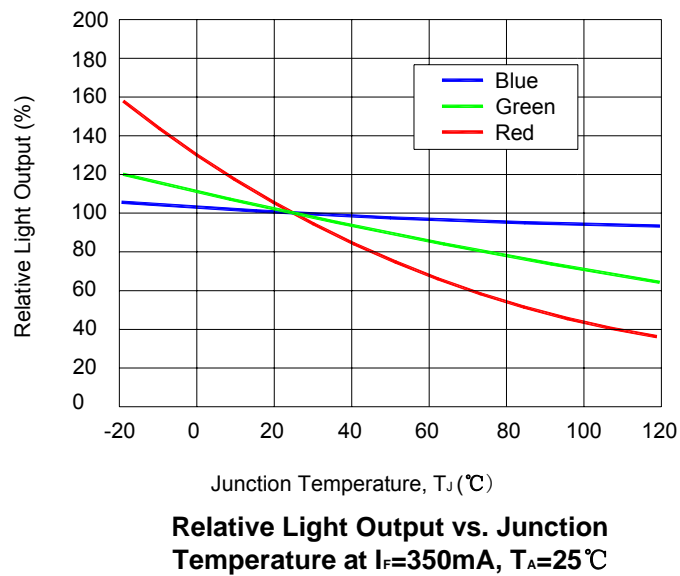
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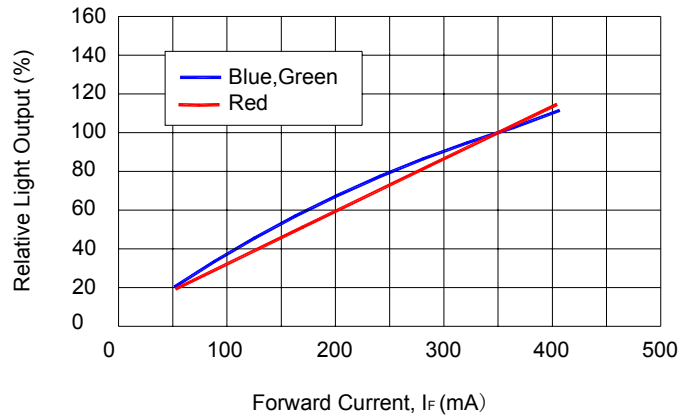
- The measured value is tested by an integrator system.
- Tolerance of measurement of luminous flux $\pm 15\%$
- Tolerance of measurement of CCT $\pm 5\%$
- Tolerance of measurement of forward voltage $\pm 0.05\text{V}$
- R is measured with an Xpower Star PCB.
- Do not drive at rated current more than 5 sec. without heatsink for Xpower emitter series.

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

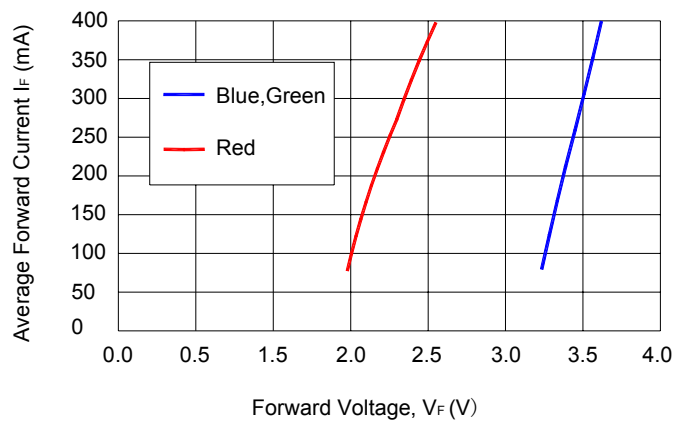


Light Output, Forward Current Characteristics, $T_A=25^\circ\text{C}$



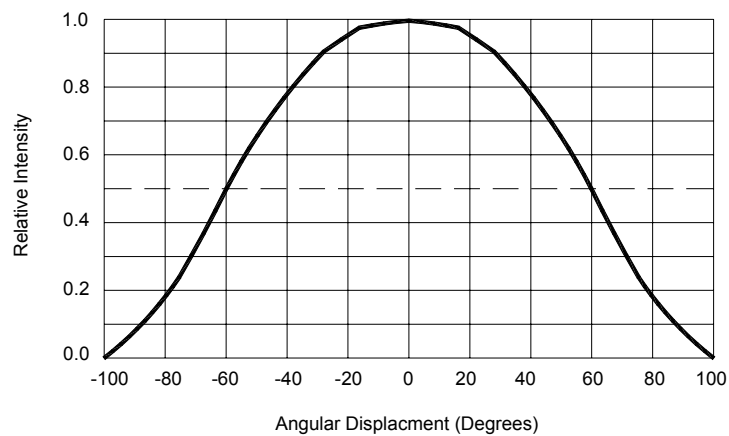


Forward Current vs. Relative Light Output , $T_A=25^\circ\text{C}$



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

Typical Lens Type Radiation Pattern



Typical Radiation Pattern for Xpower full color

NOTE:

- 1) The LED shall be used under allowed conditions. Z-light cannot take any responsibility for any troubles that are caused by using the LEDs at conditions exceeding our specifications.
- 2) The LED must be used as soon as tore open, otherwise the plank will be oxygenated.
- 3) The Blue · Green · White products shall be care of the static electricity.
- 4) 2mm from body for 6 seconds below 260°C.

Please avoid the soldered LEDs from clashing or librating before the lens' temperature cool down.

- 5) The circuit shall be designed according to certain current or relative operating voltage.
- 6) These LEDs are designed and manufactured for standard applications such as electric home appliances, communication equipment, office equipment, electronic instrumentation and so on.
It is recommended to consult with Z-light. In advance if user's application requires any particular quality or reliability that concerns human life. Examples would be medical equipment, aerospace applications, traffic signals, safety system equipment and so on.
- 7) We reserve the right to make technical changes without prior notice.
- 8) All the content interpretation reserved to Z-Light.