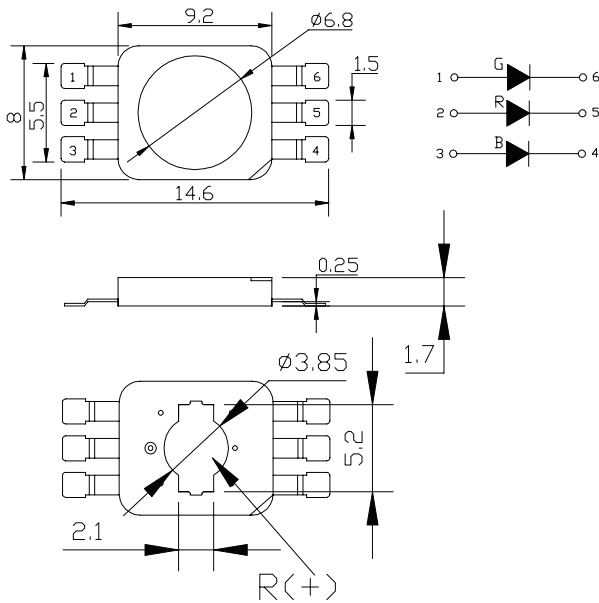


3W High Power LED



Package Dimensions:



Features:

- Super high flux output and high luminance
- Designed for high current operation
- Low thermal resistance
- No UV

Applications:

- Reading lights
- Portable flashlights
- Uplighters & downlighters
- Touch lighting
- LCD backlights / light guides
- General lighting

All dimensions are in mm
Tolerance: $\pm 0.25\text{mm}$

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

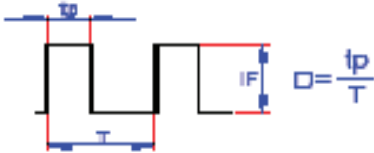
Parameter		Rating	Unit
Power Dissipation*	R	0.8	W
	G & B	1.2	
LED Junction Temperature*		120	$^\circ\text{C}$
Reverse Voltage*		5	V
D.C. Forward Current*		350	mA
Pulsed Forward Current ($t_p \leq 100\mu\text{s}$, Duty Cycle = 0.005×1)*		1,000	mA
Operating Temperature Range		-40 to +75	$^\circ\text{C}$
Storage Temperature Range		-40 to +105	$^\circ\text{C}$
Soldering Temperature	Tsld.	Reflow Soldering: 260°C for 10sec. Hand Soldering: 350°C for 3sec.	
Electric Static Discharge (HBM)	ESD	6,000	V



3W High Power LED



Duty Cycle:



- Proper current derating must be observed to maintain junction temperature below the maximum.
- All products no sensitive to ESD damage (6,000 Volts by HBM condition)
- Be careful with a powered up current limited power supply, because of current spikes during power up and/or connection. Best practice is to connect the LED then turn up the voltage gradually. People building their own power supplies should design for minimum current spikes during power up and connection.
- For best results the customer needs to provide proper control of the thermal path, protect against electrical overstress conditions and ensure they are properly attached to the heat sink.
- It is strongly recommended that the temperature of lead does not exceed 55°C.
- It is strongly recommended to apply an electrically isolated heat conducting film between the slug and contact surfaces

Red Characteristics at If=350mA (Ta=25°C):

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Luminous Flux	$\Phi_v^{(1)}$	23.5	30	39.7	lm
Dominant Wavelength	λ_d	620	625	630	nm
Forward Voltage	V_f	2	2.5	3	V
View Angle	$2\theta_{1/2}$	120			deg
Thermal Resistance Junction to Case	$R\theta_{J-C}$	13			°C/W

Green Characteristics at If=350mA (Ta=25°C):

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Luminous Flux	$\Phi_v^{(1)}$	39.7	50	65	lm
Dominant Wavelength	λ_d	520	525	535	nm
Forward Voltage	V_f	3	3.5	4	V
View Angle	$2\theta_{1/2}$	120			deg
Thermal Resistance Junction to Case	$R\theta_{J-C}$	10			°C/W

Blue Characteristics at If=350mA (Ta=25°C):

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Luminous Flux	$\Phi_v^{(1)}$	10.7	13	13.9	lm
Dominant Wavelength	λ_d	460	465	475	nm
Forward Voltage	V_f	3	3.4	4	V
View Angle	$2\theta_{1/2}$	120			deg
Thermal Resistance Junction to Case	$R\theta_{J-C}$	10			°C/W

3W High Power LED



Electrical & Optical Bin Group:

Flux Ranks

Colour	Group	Flux (lm)
Red & Green & Blue	L	10.7 ~ 13.9
	M	13.9 ~ 18
	N	18 ~ 23.5
	P	23.5 ~ 30.5
	Q	30.5 ~ 39.6
	R	39.6 ~ 51.5
	S	51.5 ~ 67

Wavelength Ranks

Colour	Group	WD (nm)
Red	W	620 ~ 630
Green	15	520 ~ 525
	16	525 ~ 530
	17	530 ~ 535
Blue	3	460 ~ 465
	4	465 ~ 470
	5	470 ~ 475

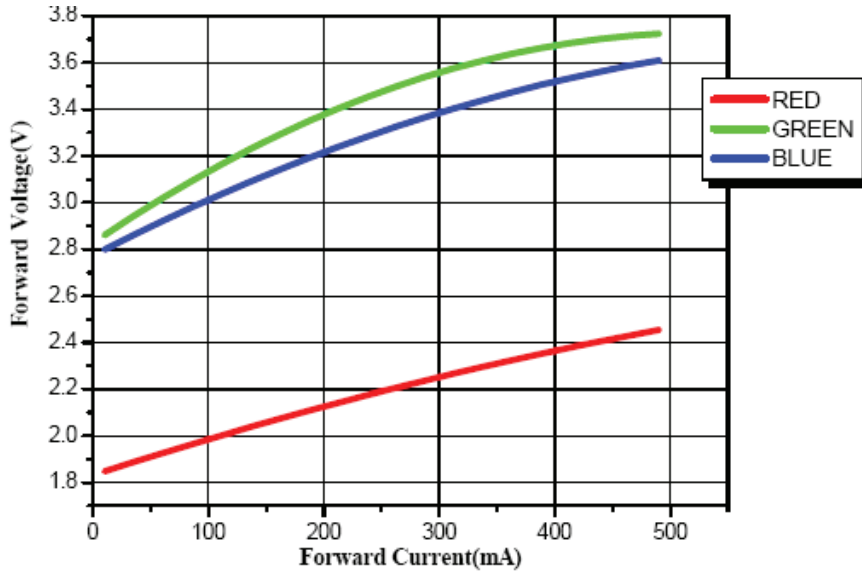
Forward Voltage Ranks:

Colour	Group	WD (nm)
Red	V01	1.8 ~ 2.0
	V02	2.0 ~ 2.2
	V03	2.2 ~ 2.4
	V04	2.4 ~ 2.6
	V05	2.6 ~ 2.8
Green	V01	3.0 ~ 3.2
	V02	3.2 ~ 3.4
	V03	3.4 ~ 3.6
	V04	3.6 ~ 3.8
	V05	3.8 ~ 4.0
Blue	V01	3.0 ~ 3.2
	V02	3.2 ~ 3.4
	V03	3.4 ~ 3.6
	V04	3.6 ~ 3.8
	V05	3.8 ~ 4.0

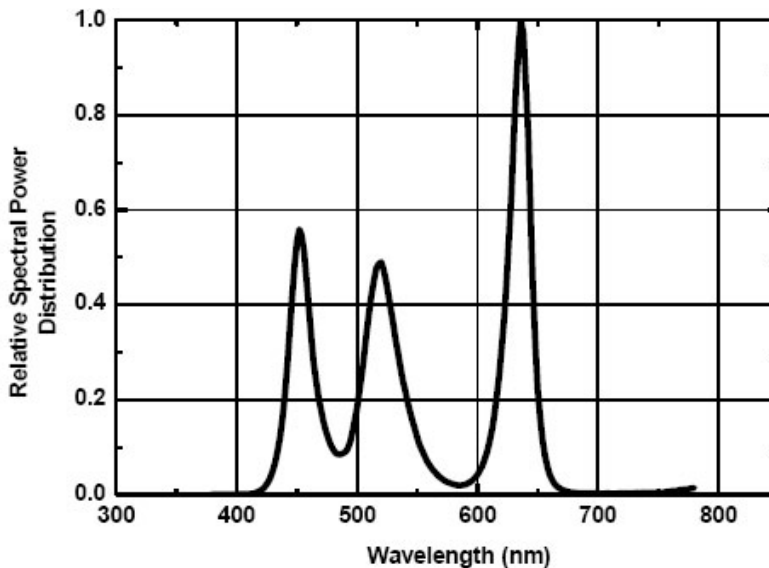


3W High Power LED

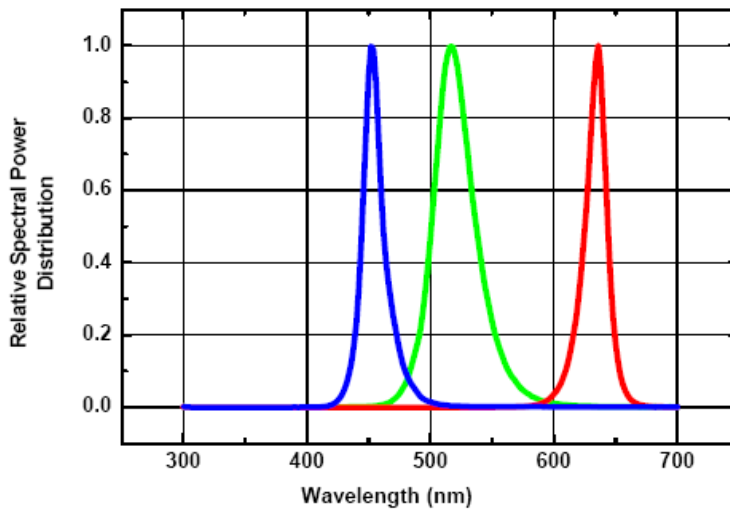
Forward Voltage Vs Forward Current (Ta=25°C):



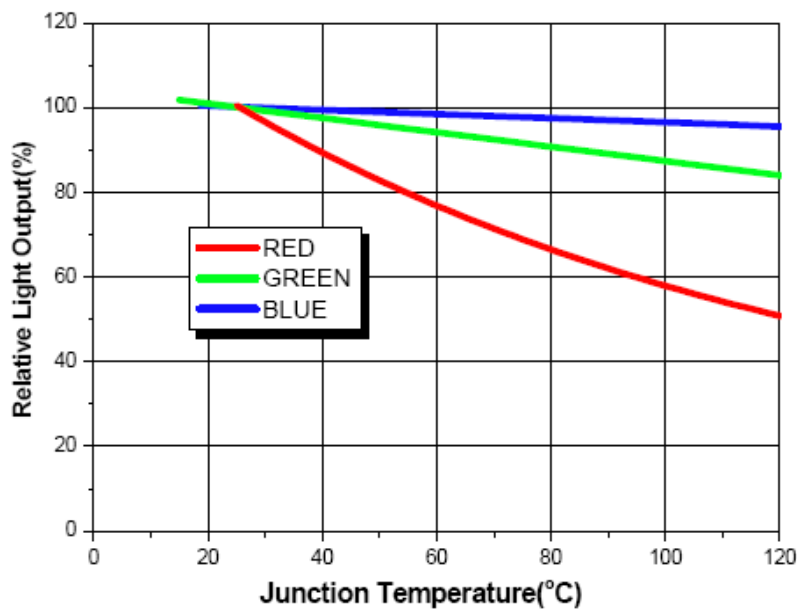
Wavelength Curve for White (Ta=25°C):



Wavelength Curve for Red, Green, Blue (Ta=25°C):



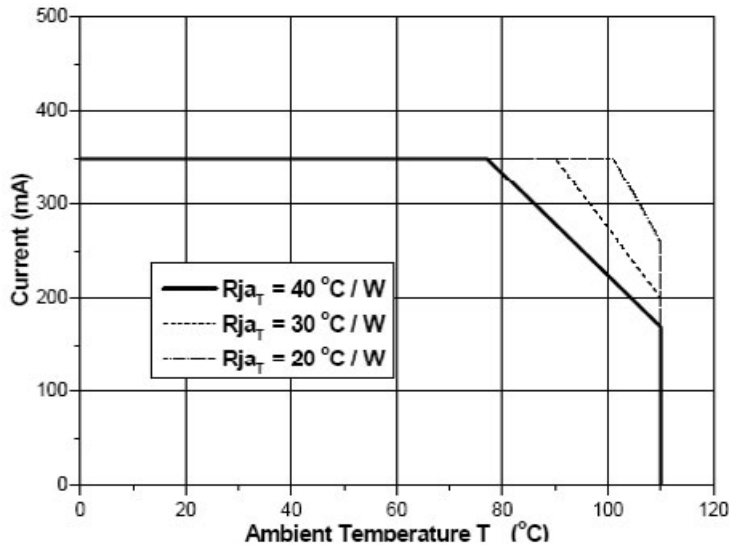
Temperature of Junction vs. Relative Light Output for Blue, Green, Red (Ta=25°C):



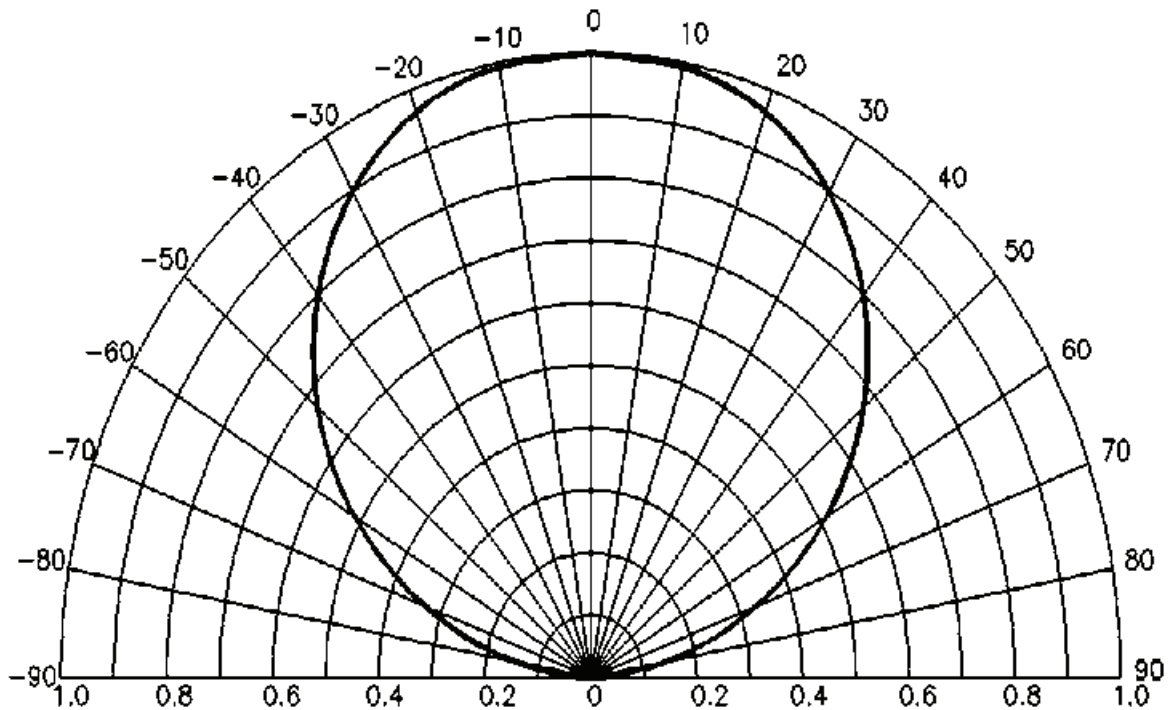
3W High Power LED



White, Blue, Green, Red ($T_a=25^\circ\text{C}$):



Typical Radiation Pattern for Non Lens ($2\theta_{1/2} : 120\pm 10^\circ$):



3W High Power LED



Recommended Storage Environment:

- Temperature: 5°C ~ 30°C (41°F ~ 86°F)
- Humidity: 60% RH Max.
- Use within 7 days after opening of sealed vapour/ESD barrier bags.
- If moisture absorbent material (silica gel) has faded away or LEDs have exceeded the storage time, baking treatment should be performed using the following conditions:
- Baking Treatment: 60 ± 5°C for 24 hours
- Fold the opened bag firmly and keep in dry environment.

Soldering

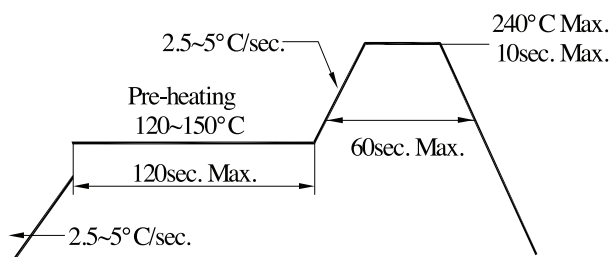
Reflow Soldering				
	Lead Solder	Lead-free Solder		
Pre-heat	120 ~ 150°C	180 ~ 200°C	Temperature	350°C max.
Pre-heat Time	120sec. max.	120sec. max.	Soldering time	3sec max. (one time only)
Peak Temperature	240°C max.	260°C max.		
Soldering Time	10sec. max.	10sec. max.		
Condition	Refer to temperature-profile 1	Refer to temperature-profile 2		

*After reflow soldering rapid cooling should be avoided.

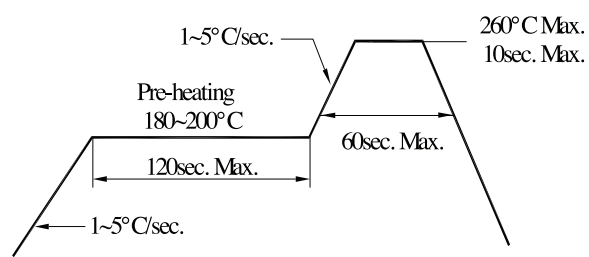
Temperature-profile (surface of circuit board):

Use the conditions shown under figure.

< 1 : Lead Solder >



< 2 : Lead-free Solder >

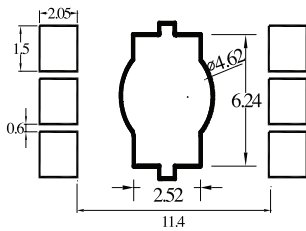


3W High Power LED



Recommended Soldering Pad Design

Use the conditions shown under figure.



Part Number Table

LED Chip		Lens Colour	Part Number
Material	Emitting Colour		
AlGaInP / Si	Red	Water clear	703-0150
InGaN / Al ₂ O ₃	True Green		
InGaN / Al ₂ O ₃	Blue		

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