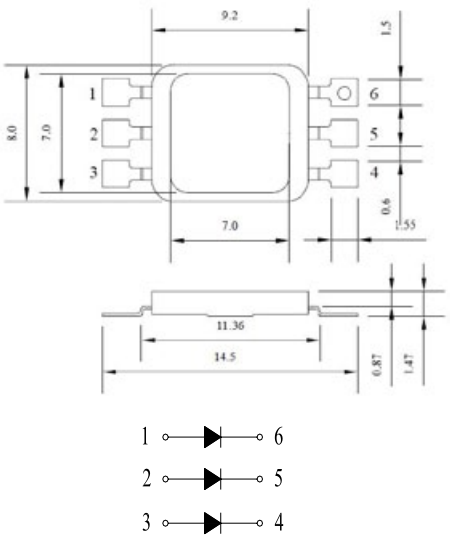
3W RGB High Power LED

RoHS Compliant

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

Typical Applications
- Reading lights
- Portable flashlight
- Uplighters and downlighters
- Torch lighting
- LCD backlights / light guides
- Decorative lighting

Package Dimensions:



* All dimensions are in mm
* Tolerance: ±0.25mm

Ant Part No.	LED Chip		Lens Colour
	Material	Emitting Colour	
703-0150	AlGaInP / Si	Red	Water clear
	InGaN / Al_2O_3	True Green	
	InGaN / Al_2O_3	Blue	

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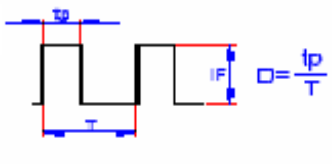
Absolute Maximum Ratings at Ta=25°C:

Parameter		Rating	Unit
Power Dissipation*	R	0.8	W
	G&B	1.2	
LED Junction Temperature*		120	V
Reverse Voltage*		5	mA
D.C. Forward Current*		350	mA
Pulsed Forward Current; tp ≤ 100µs, Duty Cycle = 0.005)*1 *		700	°C
Operating Temperature Range		-40 to +75	°C
Storage Temperature Range		-40 to +105	
Soldering Temperature	Tsold.	Dip Soldering: 260°C for 10sec. Hand Soldering: 350°C for 3sec.	
Electric Static Discharge Threshold (HBM)*	ESD	2000	V

* The values are based on 1 die performance.

Duty Cycle:



Notes:

1. Proper current derating must de observed to maintain junction temperature below the maximum.
2. All products not sensitive to ESD damage (6000 Volts by HBM condition).
3. Be careful with 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.
4. For best results the customer needs to provide proper control of the thermal path, protect against electrical overstress conditions and ensure the emitters are properly attached to the mcpcb/heat sink.

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Luminous Flux	Φv[1]	-	38	-	lm
Dominant Wavelength	λd	620	625	630	nm
Forward Voltage	Vf	2.0	2.5	3.0	V
View Angle	2θ½	120			deg
Thermal resistance Junction to Case	RθJ-C	13			°C/W

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Luminous Flux	Φv[1]	-	71	-	lm
Dominant Wavelength	λd	520	525	530	nm
Forward Voltage	Vf	3.0	3.5	4.0	V
View Angle	2θ½	120			deg
Thermal resistance Junction to Case	RθJ-C	10			°C/W

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Luminous Flux	Φv[1]	-	21	-	lm
Dominant Wavelength	λd	460	465	475	nm
Forward Voltage	Vf	3.0	3.5	4.0	V
View Angle	2θ½	120			deg
Thermal resistance Junction to Case	RθJ-C	10			°C/W

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Electrical & Optical Bin Group

Flux Ranks

Colour	Group	Flux (lm)
Red, Green & Blue	L	10.7 ~ 13.9
	M	13.9 ~ 18.0
	N	18.0 ~ 23.5
	P	23.5 ~ 30.5
	Q	30.5 ~ 39.6
	R	39.6 ~ 51.5
	S	51.5 ~ 67.0
	T	67.0 ~ 87.0
	U	87.0 ~ 113.0

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

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Forward Voltage Ranks

Colour	Group	Vf (V)
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

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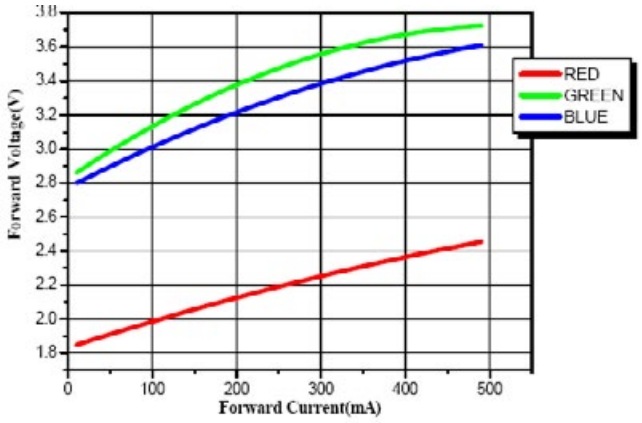
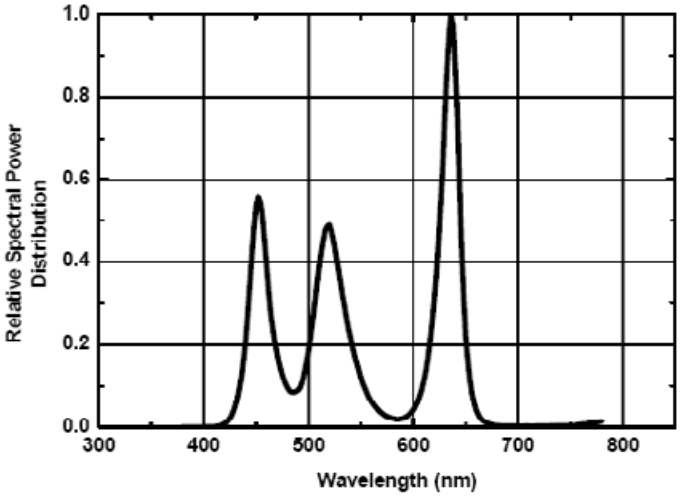
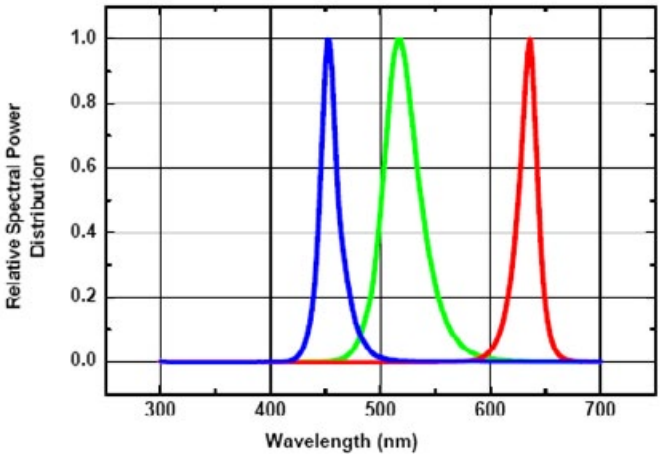
Forward Voltage Vs Forward Current(Ta=25°C):



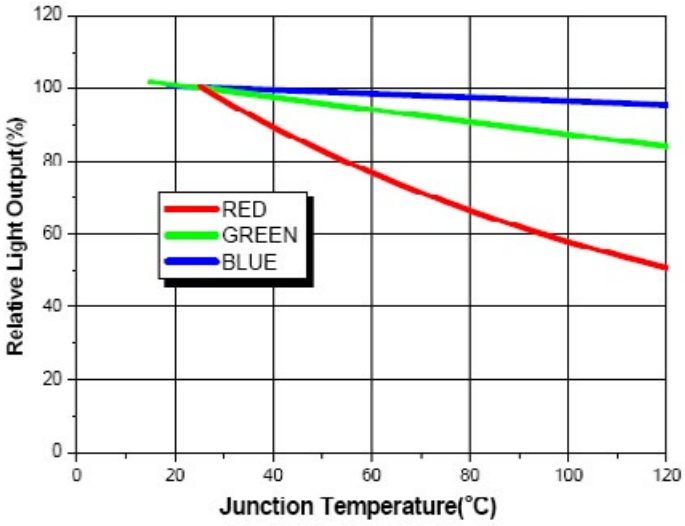
Wavelength Curve for white(Ta=25°C):



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



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



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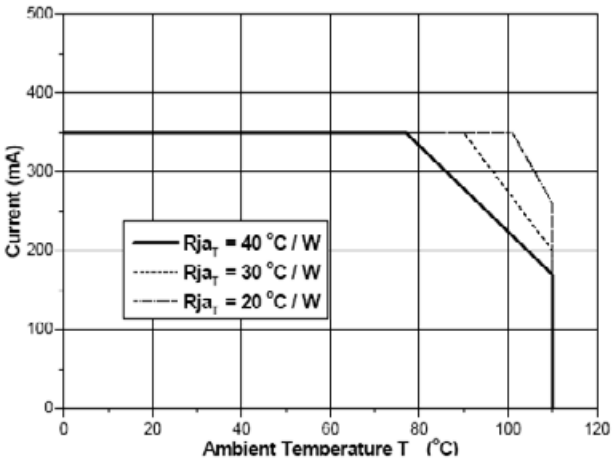
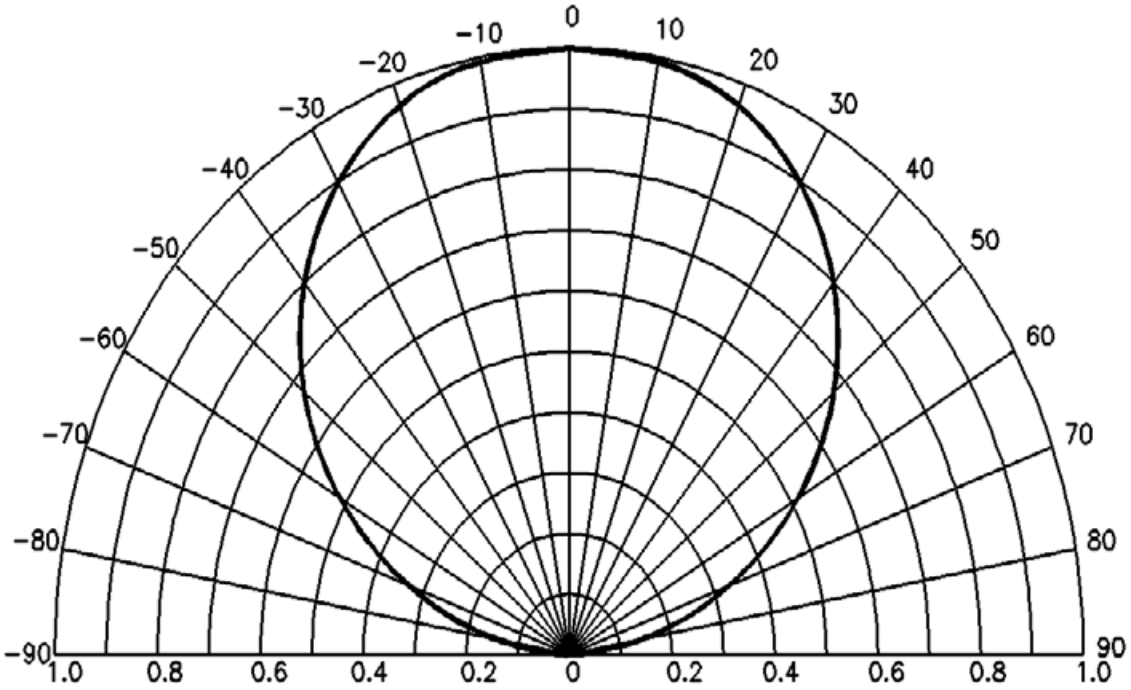
Ambient Temperature vs. Allowable Forward Current for 1 chip

White, Blue,Green,Red(Ta=25°C):



Typical Radiation Pattern for Non Lens (2θ½ : 120±10°):



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Storage:

Recommended storage environment:

- Temperature: 5°C ~ 30°C (41°F ~ 86°F)
- Humidity: 60% RH Max.
- Moisture measures: Please refer to Moisture-sensitive label on reels package bags. If unused LEDs remain, they should be stored in moisture proof packages, such as a sealed container with packages of moisture absorbant material (silica gel). It is also recommended to return the LEDs to the original moisture proof bag and to reseal it again (fold the open bag firmly shut and keep in a dry environment.

Soldering:

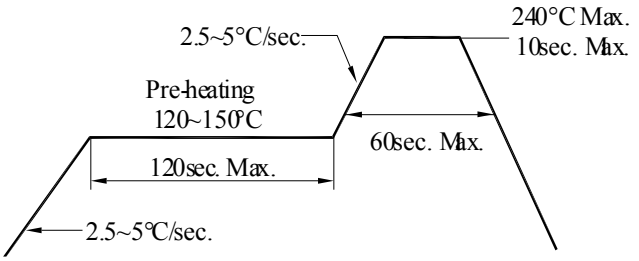
Reflow Soldering			Hand Soldering	
	Lead Solder	**Lead-free Solder**		
Pre-heat	120 ~ 150°C	180 ~ 200°C	**Temperature**	350°C Max.
Pre-heat Time	120sec. Max.	120sec. Max.	**Soldering Time**	3sec. Max. (one time only)
Peak Temperature	240°C Max.	260°C Max.		
Soldering Time	10sec. max.	10sec. Max.		
Condition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

* After reflow soldering rapid cooling should be avoided.

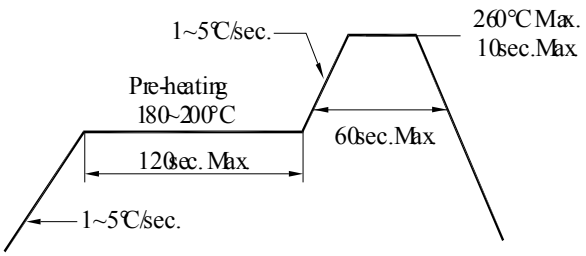
Temperature-profile (Surface of circuit board):

Use the following conditions shown in the figure.

<1 : Lead Solder>



<2 : Lead-free Solder>



Recommended soldering pad design:

Use the following conditions shown in the figure.