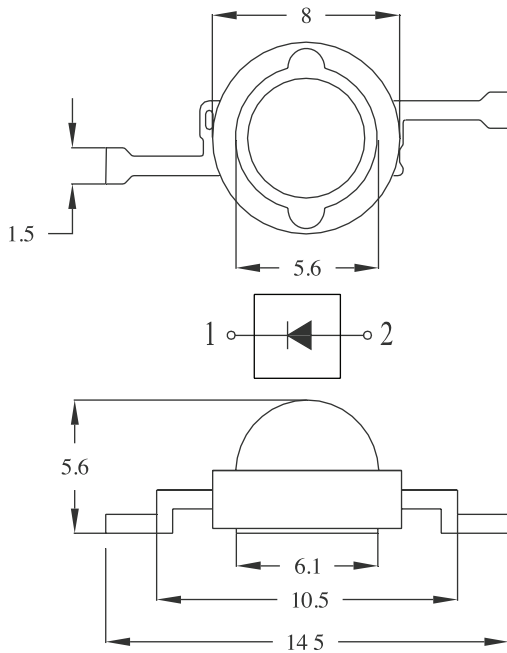


# 1W High Power LED



## Package Dimensions:



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

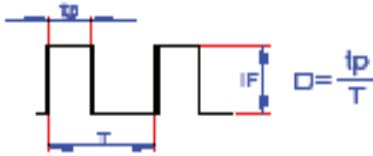
## Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Rating	Unit
Power Dissipation	1,400	mW
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 = $0.005 \times 1$ )	700	mA
Operating Temperature Range	-40 to +75	$^\circ\text{C}$
Storage Temperature Range	-40 to +100	$^\circ\text{C}$
Soldering Temperature	Reflow Soldering: $260^\circ\text{C}$ for 10sec. Hand Soldering: $350^\circ\text{C}$ for 3 sec.	
Electric Static Discharge (HBM)	6,000	V

# 1W 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

## Electrical & Optical Characteristics

Parameter	Symbol	Condition	Values			Unit	
			Min.	Typ.	Max.		
Luminous Flux	FULL	$\Phi_v$	IF=350mA	55	74		lm
	Rank L1			55		63	
	Rank L2			63		72	
	Rank L3			72		83	
	Rank L4			83		96	
Forward Voltage	Rank V1	Vf	IF=350mA	3		3.25	V
	Rank V2			3.25		3.5	
	Rank V3			3.5		3.75	
	Rank V4			3.75		4	
Dominant Wavelength (per LED)		$\lambda_D$		515		520	nm
				520		525	
				525		530	
				530		535	
Reverse Current	$I_R$					50	$\mu A$
Viewing Angle at 50% IV	$2\theta_{1/2}$				120		deg
Thermal resistance Junction to Case	$R\theta_{J-C}$				15		$^{\circ}C/W$

- Notes: 1. The data is tested by an IS tester.  
2. Customer's special requirements are also welcome.



# 1W High Power LED



## Typical Electrical & Optical Characteristics Curves:

(25°C Ambient temperature unless otherwise noted)

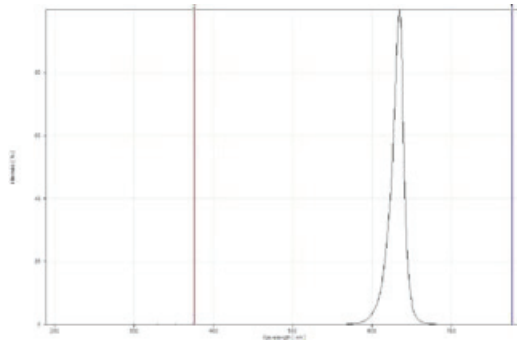
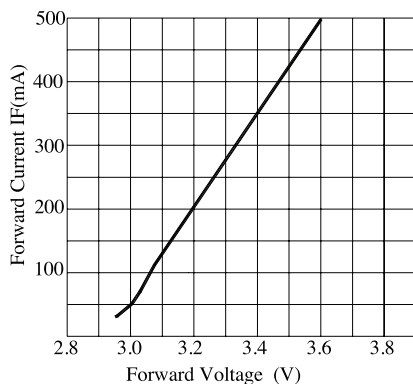
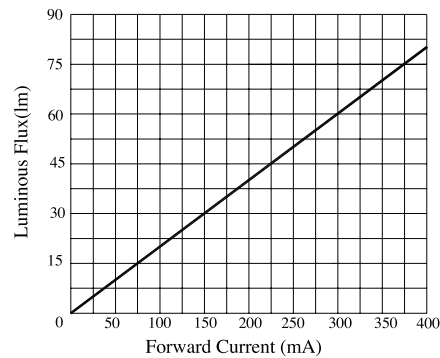


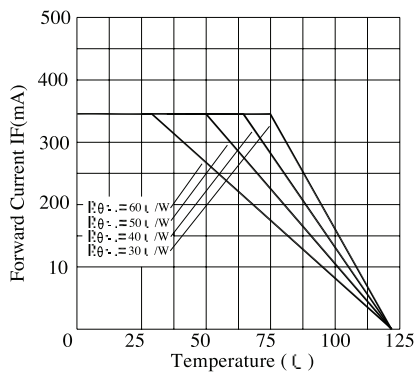
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



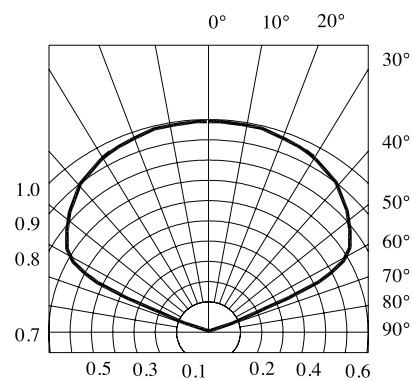
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Flux



Ambient Temperature VS. Forward Current



Radiation Diagram



# 1W 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.

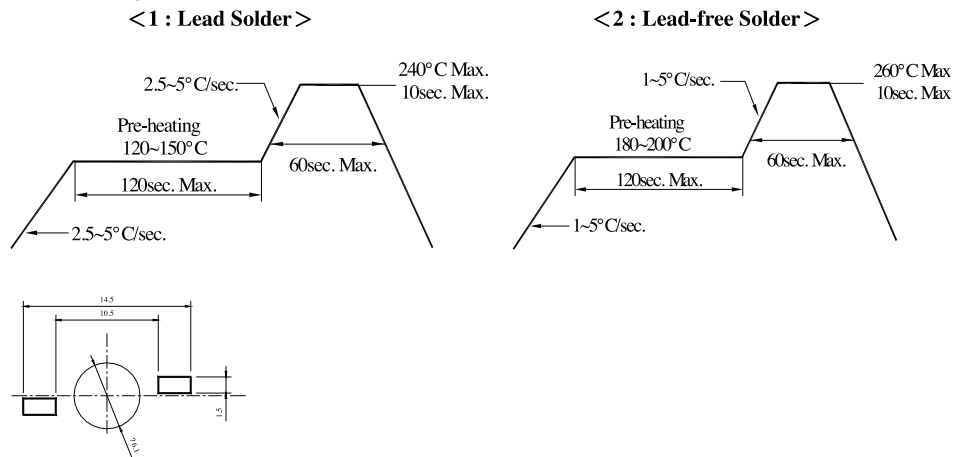
## Soldering

Reflow Soldering			
	Lead Solder	Lead-free Solder	
Pre-heat	120 ~ 150°C	180 ~ 200°C	Temperature
Pre-heat Time	120sec. max.	120sec. max.	Soldering time
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	
			350°C max.
			3sec max. (one time only)

\*After reflow soldering rapid cooling should be avoided.

## Temperature-profile (surface of circuit board):

Use the conditions shown under figure.



## Part Number Table

LED Chip		Lens Colour	Part Number
Material	Emitting Colour		
InGaN / Al2O3	Yellow	Water clear	703-0146

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