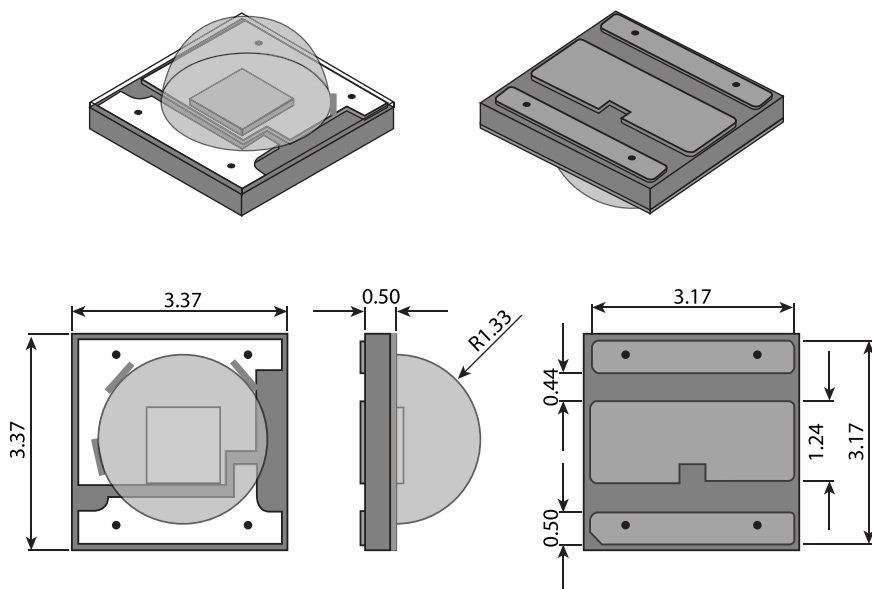


# 1W High Power LED



## Package Dimensions:



\* All dimensions are in mm  
\* Tolerance: ±0.6mm unless otherwise noted.

Ant Part No.	LED Chip		Lens Colour
	Material	Colour Coordinates	
703-0151	InGaN/Metal Alloy	White	Water clear

## Absolute Maximum Ratings at Ta=25°C:

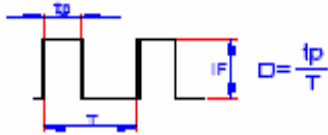
Parameter	Rating	Unit
Power Dissipation	1313	mW
LED Junction Temperature	125	°C
Reverse Voltage	5	V
D.C. Forward Current	350	mA
Pulsed Forward Current; $t_p \leq 100\mu s$ , Duty Cycle = 0.005)*1	700	mA
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-40 to +85	°C
Soldering Temperature	Dip Soldering: 260°C for 10sec. Hand Soldering: 350°C for 3sec.	
Electric Static Discharge Threshold (HBM)	6000	V

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# 1W High Power LED



## Duty Cycle:



## Notes:

1. Proper current derating must be 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.
5. It is recommended that the temperature of lead does not exceed 55 °C.
6. It is recommended to apply an electrically isolated heat conductive film between slug and contact surfaces.

## Electrical & Optical Characteristics:

Parameter	Symbol	Condition	Value			Unit	
			Min.	Typ.	Max.		
Luminous Flux	FULL	$\Phi_v^1$	IF = 700 mA	-	108	-	lm
	Rank L1			101	-	108	
	Rank L2			108	-	115	
Forward Voltage	Rank V1	VF	IF = 700 mA	-	3.3	-	V
	Rank V2			2.79	-	3.03	
	Rank V3			3.03	-	3.27	
	Rank V4			3.24	-	3.51	
	Rank V5			3.51	-	3.75	
Correlated Colour Temperature	CCT	IF = 700 mA	-	5665	-	K	
CIE Chromaticity Coordinates: X Axis	X	IF = 700 mA	-	0.3290	-	-	
CIE Chromaticity Coordinates: Y Axis	Y	IF = 700 mA	-	0.3417	-	-	
Reverse Current	Ir	Vr = 5V	70	-	-	$\mu$ A	
View Angle	$2\theta_{1/2}$	IF = 700 mA	-	-	50	deg	
Thermal resistance Junction to Case	R $\theta_{J-c}$	IF = 700 mA	-	120	-	°C/W	

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

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## Typical Electrical / Optical Characteristic Curves:

(25°C Ambient Temperature unless otherwise noted)

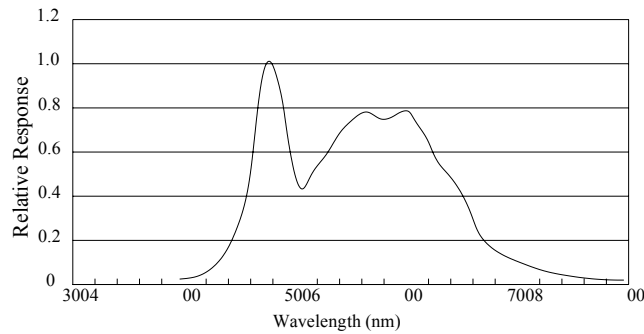
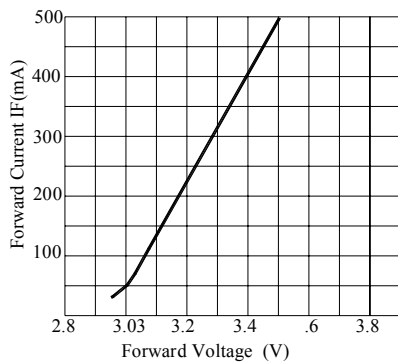
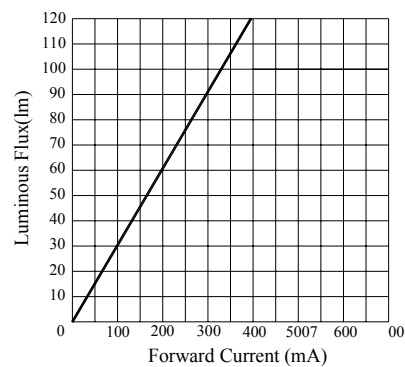


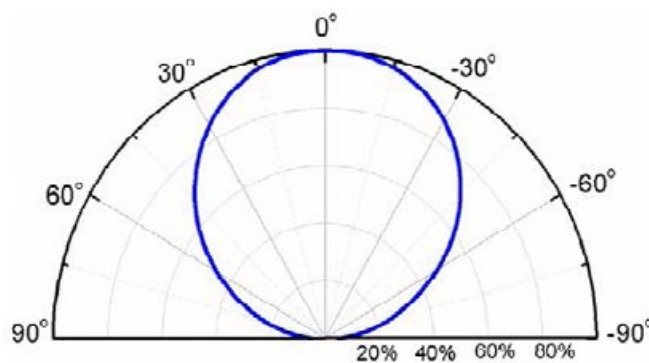
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



Forward Current VS. Applied Voltage



Forward Current VS. Luminous Flux



Radiation Diagram

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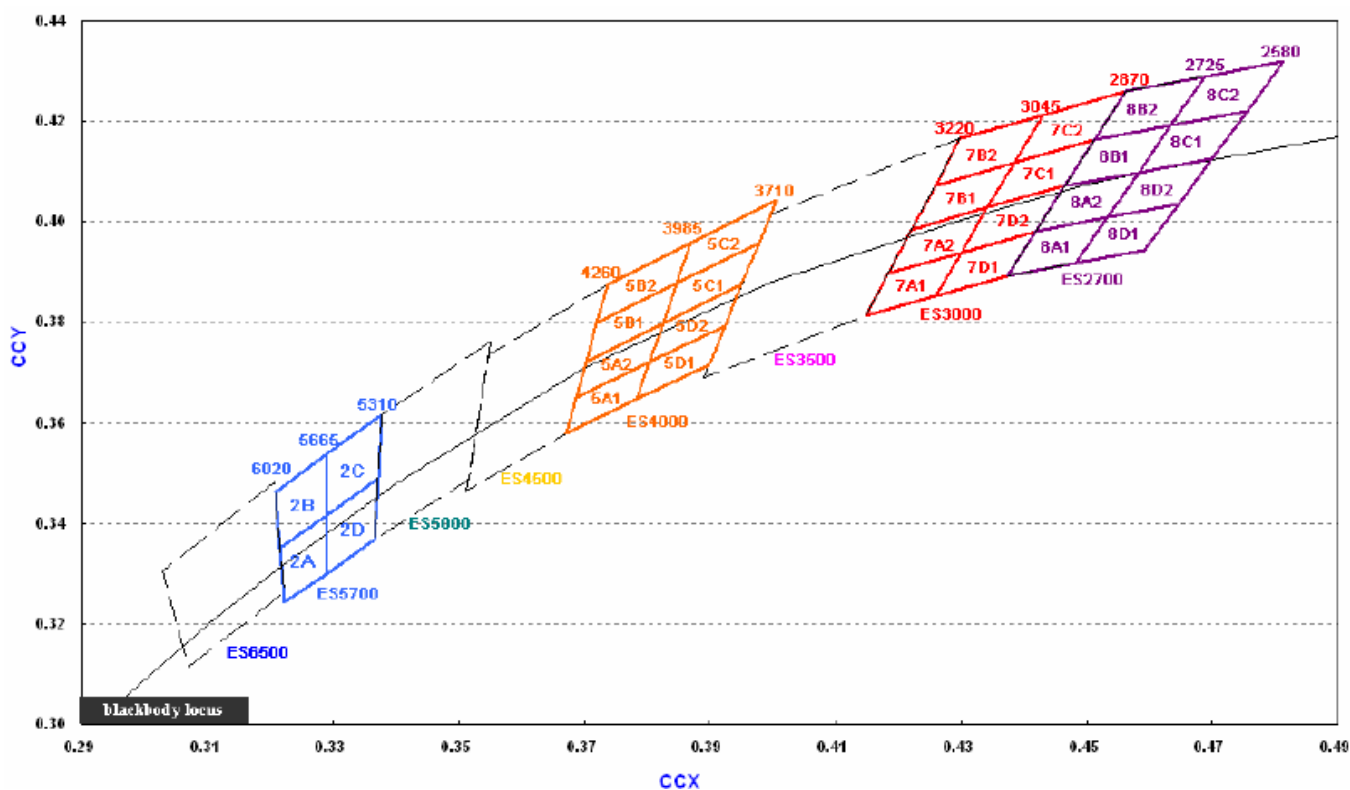
## Chromaticity Coordinates Specifications for Bin Grading:

Colour Ranks (IF = 350 mA, Ta = 25°C):

Bin	Rank					Bin	Rank				
2A	X	0.3215	0.3290	0.3290	0.3222	2B	X	0.3207	0.3290	0.3290	0.3215
	Y	0.3350	0.3417	0.3300	0.3243		Y	0.3462	0.3538	0.3417	0.3350
2C	X	0.3290	0.3376	0.3371	0.3290	2D	X	0.3290	0.3371	0.3366	0.3290
	Y	0.3538	0.3616	0.3490	0.3417		Y	0.3417	0.3490	0.3369	0.3300

Note: X, Y Tolerance each Bin limit is  $\pm 0.01$

## Chromaticity Coordinates Specifications for Bin Grading Diagram:



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# 1W High Power LED



## 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:

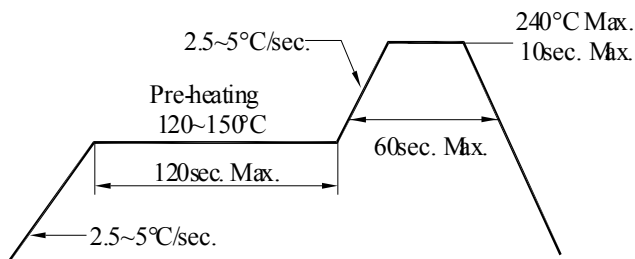
Reflow Soldering			Hand Soldering	
	Lead Solder	Lead-free Solder		
Pre-heat	120 ~ 150°C	180 ~ 200°C	Temperature	350°C Max.
Pre-heat Time	120sec. Max.	120sec. Max.	Soldering Time	3sec. Max. (one time only)
Peak Temperature	240°C Max.	260°C Max.		
Soldering Time	10sec. max.	10sec. Max.		
Condition	Refer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

\* After reflow soldering rapid cooling should be avoided.

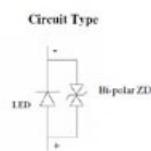
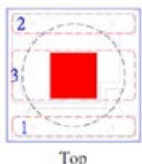
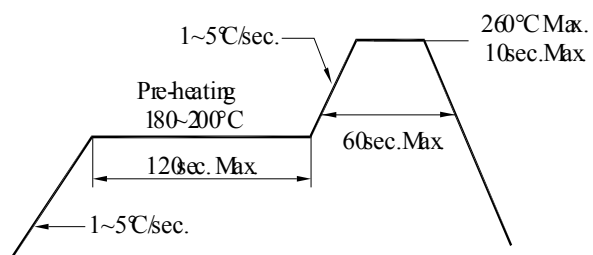
## Temperature-profile (Surface of circuit board):

Use the following conditions shown in the figure.

### <1 : Lead Solder>



### <2 : Lead-free Solder>



Pad	Function
1	Cathode
2	Anode
3	Thermal

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