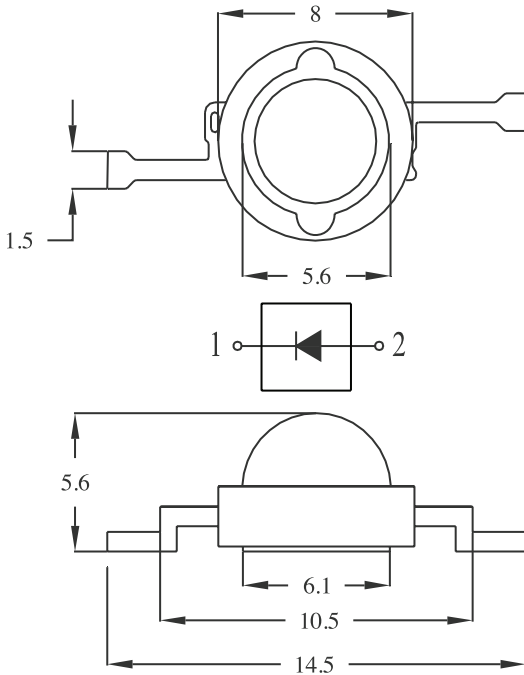


# 3W Warm White High Power LED



## Package Dimensions:



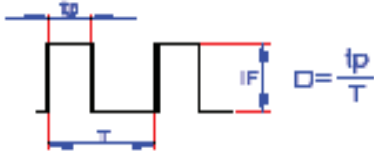
All dimensions are in mm  
Tolerance:  $\pm 0.25\text{mm}$

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

Parameter	Rating	Unit
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)	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 3sec.	
Electric Static Discharge (HBM)	6,000	V

# 3W Warm White 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 (6000 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	70		lm
	Rank T1			55		63	
	Rank T2			63		72	
	Rank U1			72		83	
	Rank U2			83		96	
	Rank V1			96		113	
	Rank V2			113		134	
Forward Voltage	Rank V01	Vf	IF=350mA	2.7		3.0	V
	Rank V02			3.0		3.25	
	Rank V03			3.25		3.5	
	Rank V04			3.5		3.75	
	Rank V05			3.75		4.0	
Correlated Colour Temperature		CCT	IF=350mA	2,600		2,900	
CIE Chromaticity Coordinates: X Axis		X	IF=350mA		0.4578		
CIE Chromaticity Coordinates: Y Axis		Y	IF=350mA		0.4101		
Colour Rendering Index (Ra)		CRI	IF=350mA		72		
Reverse Current		IR	VR=5V			50	$\mu$ A
Viewing Angle at 50% IV		$2\theta_{1/2}$	IF=350mA		120		deg
Thermal resistance Junction to Case		$R\theta_{J-C}$	IF=350mA		15		°C/W

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

## Typical Electrical & Optical Characteristics Curves:

(25°C Ambient temperature unless otherwise noted)

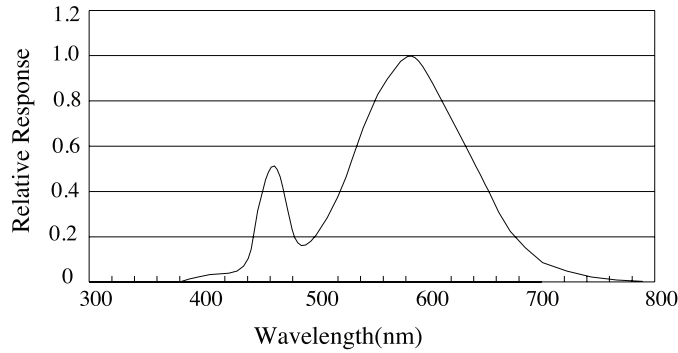
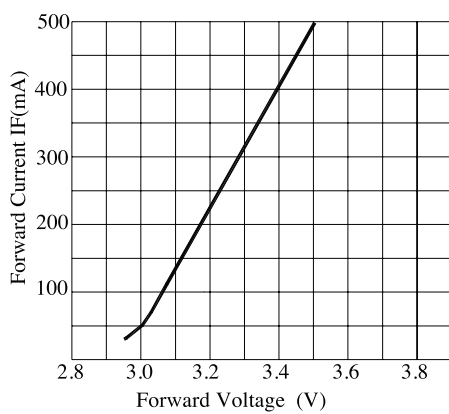
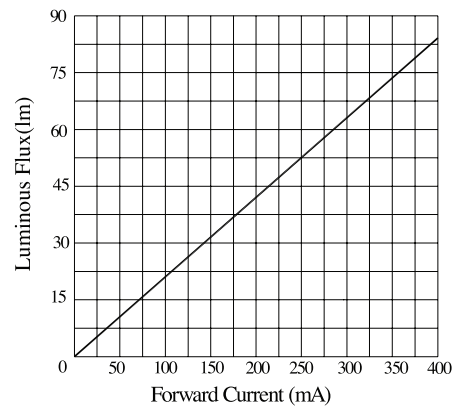


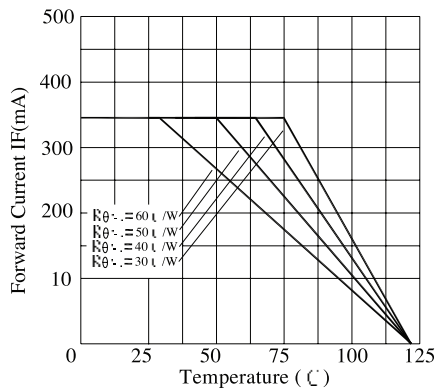
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



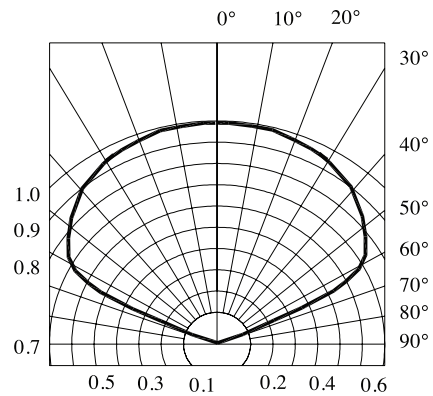
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Flux



Ambient Temperature VS. Forward Current



Radiation Diagram

## Chromaticity Coordinates Specifications for Bin Grading:

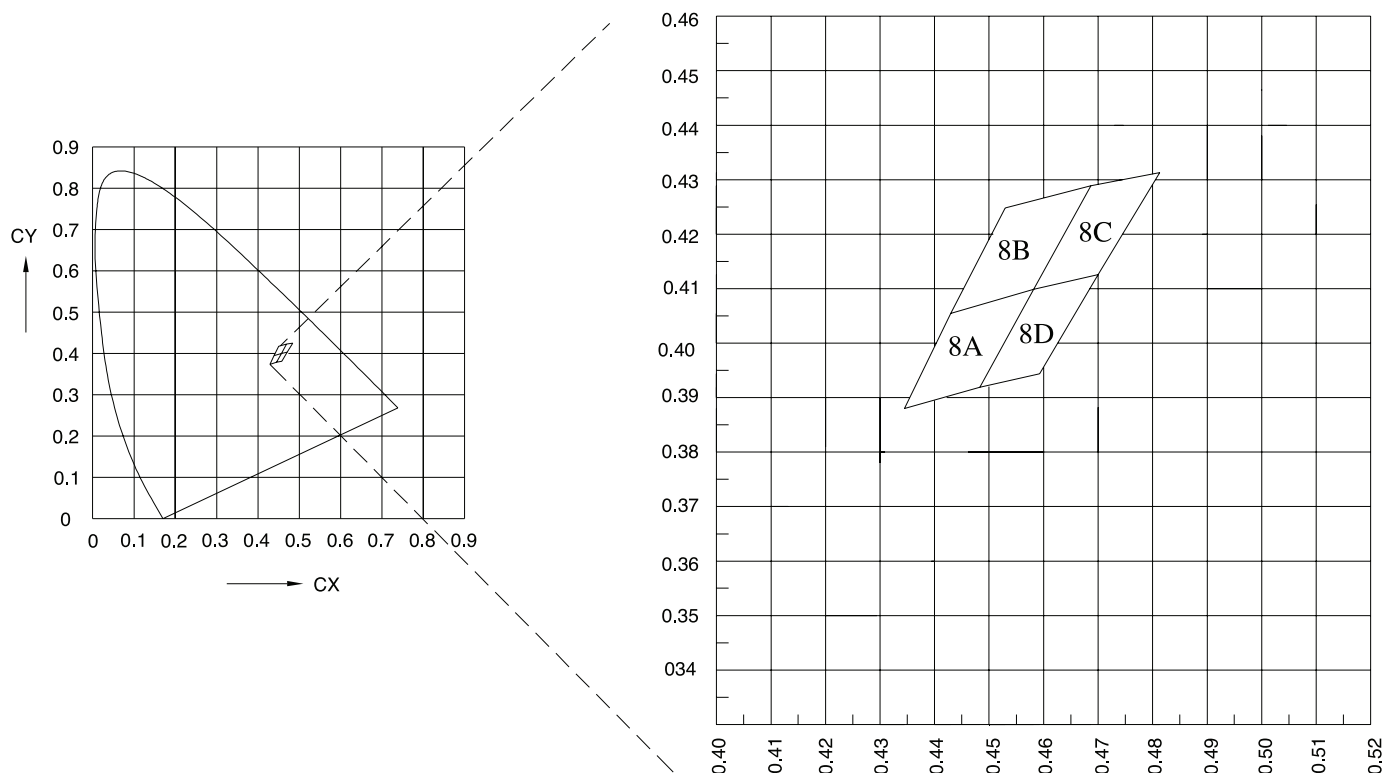
Colour Ranks (IF=350mA, Ta=25°C)

Bin	Rank				
	X	Y	Z	u'	v'
8A	X	0.4345	0.4430	0.4582	0.4483
	Y	0.3880	0.4055	0.4099	0.3919
8B	X	0.4430	0.4530	0.4687	0.4582
	Y	0.4055	0.4248	0.4289	0.4099
8C	X	0.4582	0.4687	0.4813	0.4700
	Y	0.4099	0.4289	0.4319	0.4126
8D	X	0.4483	0.4582	0.4700	0.4593
	Y	0.3919	0.4099	0.4126	0.3944

Note: X, Y

Tolerance each Bin limit is  $\pm 0.01$

## Chromaticity Coordinates & Bin Grading Diagram:



# 3W Warm White 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.

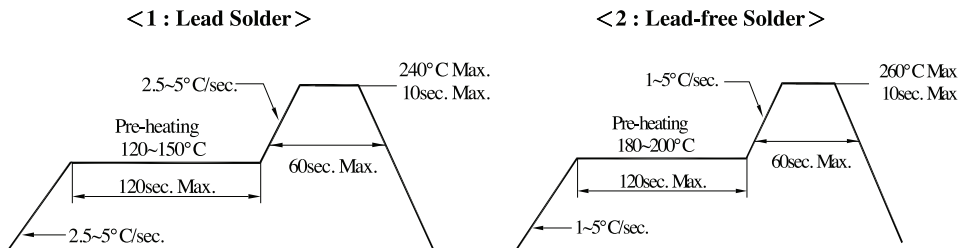
## Soldering

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 / Metal Alloy	Warm white	Water clear	703-0149

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