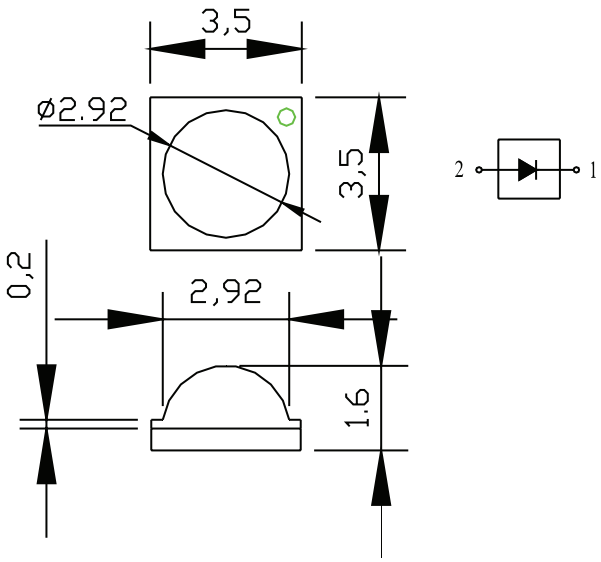
1W High Power LED

RoHS Compliant

Package Dimensions:

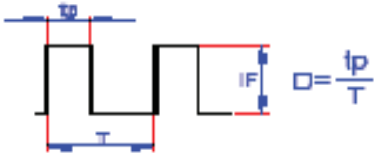


All dimensions are in mm
Tolerance: ±0.25mm

Absolute Maximum Ratings at Ta=25°C

Parameter	Rating	Unit
Power Dissipation	1,400	mA
LED Junction Temperature	120	°C
Reverse Voltage	5	V
D.C. Forward Current	350	mA
Pulsed Forward Current (tp ≤ 100µs, Duty Cycle = 0.005 × 1)	700	mA
Operating Temperature Range	-40 to +75	°C
Storage Temperature Range	-40 to +100	°C
Soldering Temperature	Reflow Soldering : 260°C for 10sec Hand Soldering: 350°C for 3sec.	
Electric Static Discharge (HBM)	6,000	V

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	Φv	IF=350mA	80	100		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	V
	Rank V02			3		3.25	
	Rank V03			3.25		3.5	
	Rank V04			3.5		3.75	
	Rank V05			3.75		4	
Efficiency		η	IF=350mA		82		
Colour rendering Index		CRI	IF=350mA		70		
CIE Chromaticity Coordinates: X Axis		X	IF=350mA		0.3287		
CIE Chromaticity Coordinates: Y Axis		Y	IF=350mA		0.3417		
Correlated Colour Temperature		CCT	IF=350mA	5250		6,000	
Reverse Current		I_R				50	μA
Viewing Angle at 50% IV		2 θ ½			120		deg
Thermal resistance Junction to Case		$R\theta_{J-C}$			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)

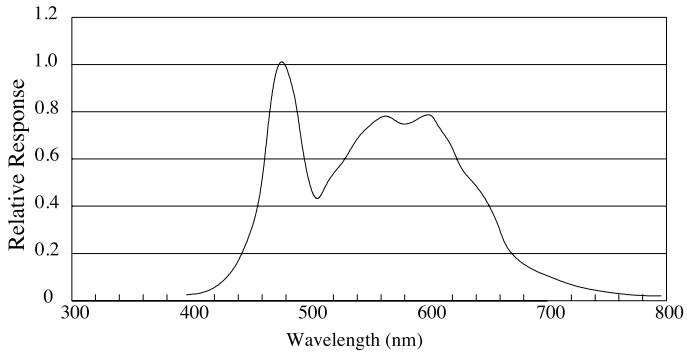
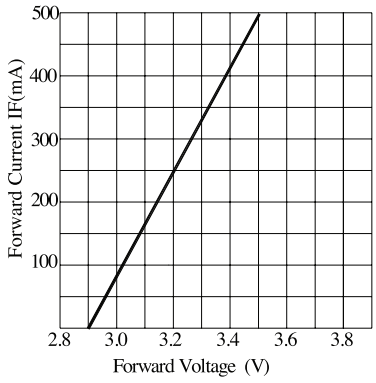
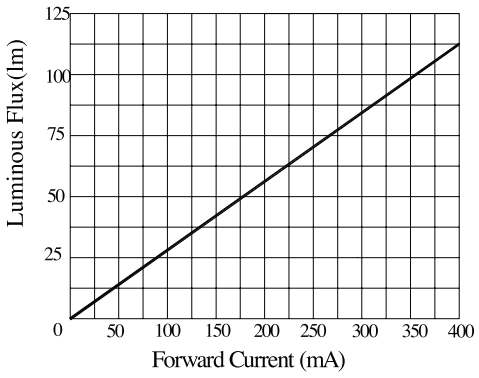


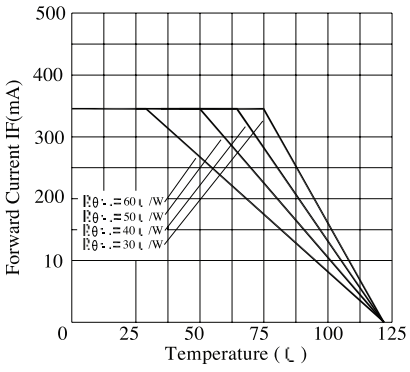
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



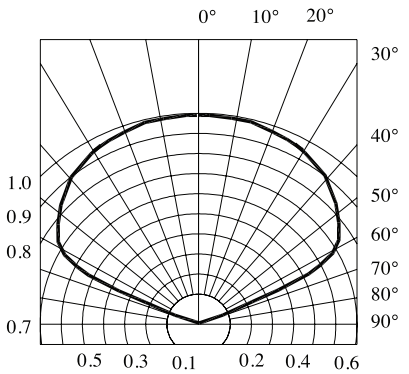
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Flux



Ambient Temperature VS. Forward Current



Radiation Diagram

Chromaticity Coordinates Specifications for Bin Grading:

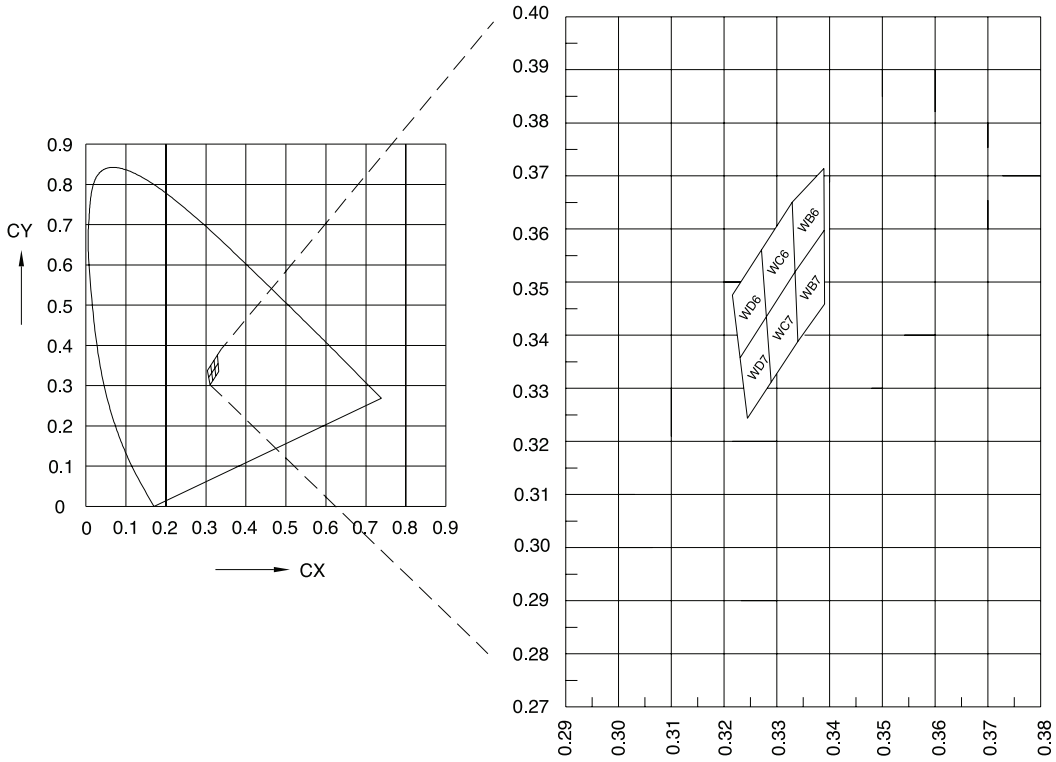
Colour Ranks (IF=350mA. Ta=25°C)

Bin	Rank					Bin	Rank				
WB6	X	0.3327	0.3394	0.3390	0.3324	WB7	X	0.3324	0.3390	0.3385	0.3324
	Y	0.3650	0.3719	0.3591	0.3519		Y	0.3519	0.3591	0.3465	0.3388
WC6	X	0.3264	0.3327	0.3324	0.3268	WC7	X	0.3268	0.3324	0.3324	0.3272
	Y	0.3551	0.3650	0.3519	0.3430		Y	0.3430	0.3519	0.3388	0.3305
WD6	X	0.3210	0.3264	0.3268	0.3218	WD7	X	0.3218	0.3268	0.3272	0.3227
	Y	0.3364	0.3551	0.3430	0.3353		Y	0.3353	0.3430	0.3305	0.3233

Note: X. Y

Tolerance each Bin limit is ±0.01

Chromaticity Coordinates & Bin Grading Diagram:



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

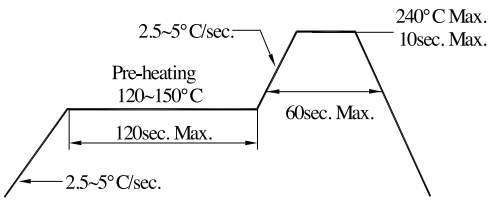
Reflow Soldering				
	Lead Solder	**Lead-free Solder**		
Pre-heat	120 ~ 150°C	180 ~ 200°C	Temperature	350°C max.
Pre-heat Time	120sec. max.	120sec. max.	Soldering time	3sec max. (one time only)
Peak Temperature	240°C max.	260°C max.		
Soldering Time	10sec. max.	10sec. max.		
Condition	Refer to temperature-profile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

*After reflow soldering rapid cooling should be avoided.

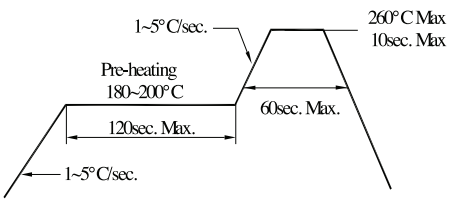
Temperature-profile (surface of circuit board):

Use the conditions shown under figure.

＜1 : Lead Solder＞

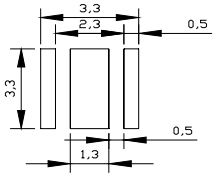


＜2 : Lead-free Solder＞



Recommended Soldering Pad Design:

Use the following conditions shown in figure.



Part Number Table

LED Chip		Lens Colour	Part Number
Material	**Emitting Colour**		
InGaN/Metal Alloy	Warm white	Water clear	703-0151