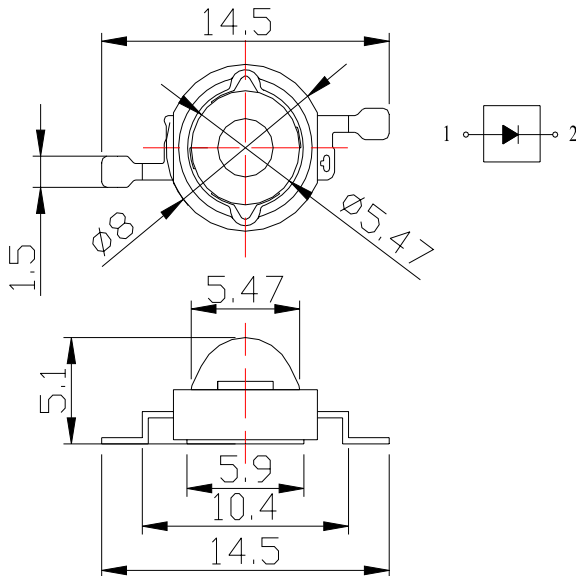


1W High Power LED



Package Dimensions:



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

Ant Part No.	LED Chip		Lens Colour
	Material	Colour Coordinates	
703-0148	InGaN/Sapphire	White	Water clear

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

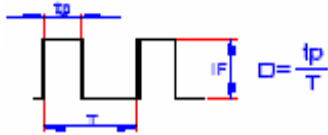
Parameter	Rating	Unit
Power Dissipation	1365	mW
LED Junction Temperature	120	$^\circ\text{C}$
Reverse Voltage	5	V
D.C. Forward Current	350	mA
Pulsed Forward Current; $t_p \leq 100\mu\text{s}$, Duty Cycle = 0.005)*1	700	mA
Operating Temperature Range	-40 to +75	$^\circ\text{C}$
Storage Temperature Range	-40 to +100	$^\circ\text{C}$
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	IF = 350 mA	-	115	-	lm
	Rank L1		100	-	120	
	Rank L2		120	-	140	
Forward Voltage	Rank V1	IF = 350 mA	2.9	-	3.1	V
	Rank V2		3.1	-	3.3	
	Rank V3		3.3	-	3.5	
	Rank V4		3.5	-	3.7	
	Rank V5		3.7	-	3.9	
Correlated Colour Temperature	CCT	IF = 350 mA	-	6250	-	K
CIE Chromaticity Coordinates: X Axis	X	IF = 350 mA	-	0.3175	-	-
CIE Chromaticity Coordinates: Y Axis	Y	IF = 350 mA	-	0.3283	-	-
Reverse Current	Ir	Vr = 5V	-	-	50	µA
View Angle	2θ½	IF = 350 mA	-	130	-	deg
Thermal resistance Junction to Case	RθJ-c	IF = 350 mA	-	15	-	°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)

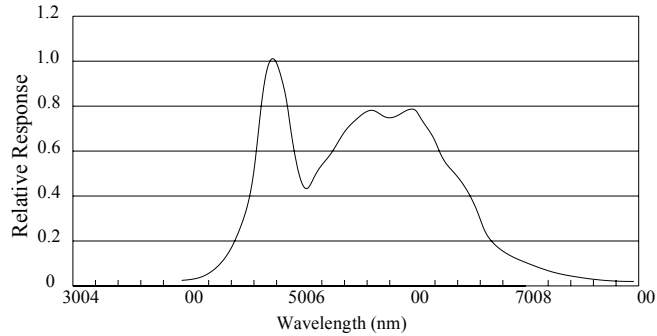
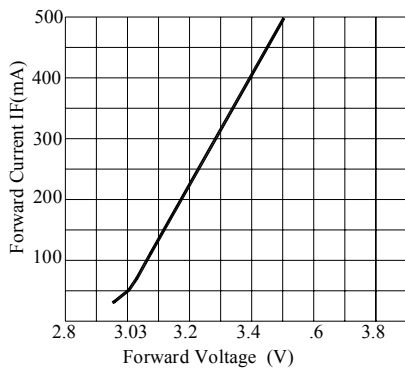
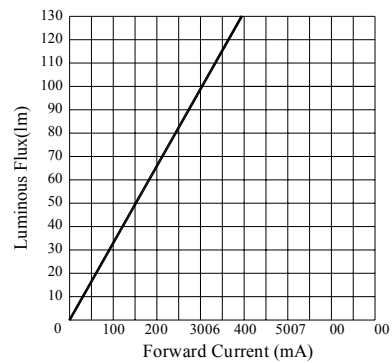


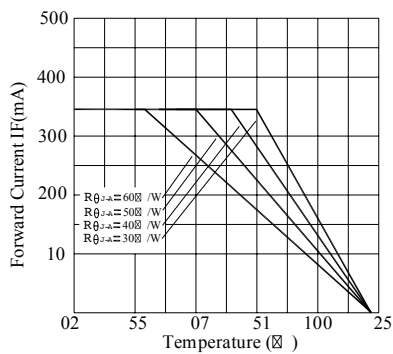
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



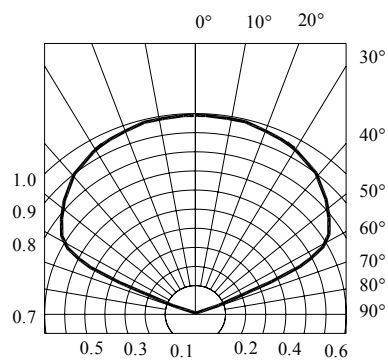
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Flux



Ambient Temperature VS. Forward Current



Radiation Diagram

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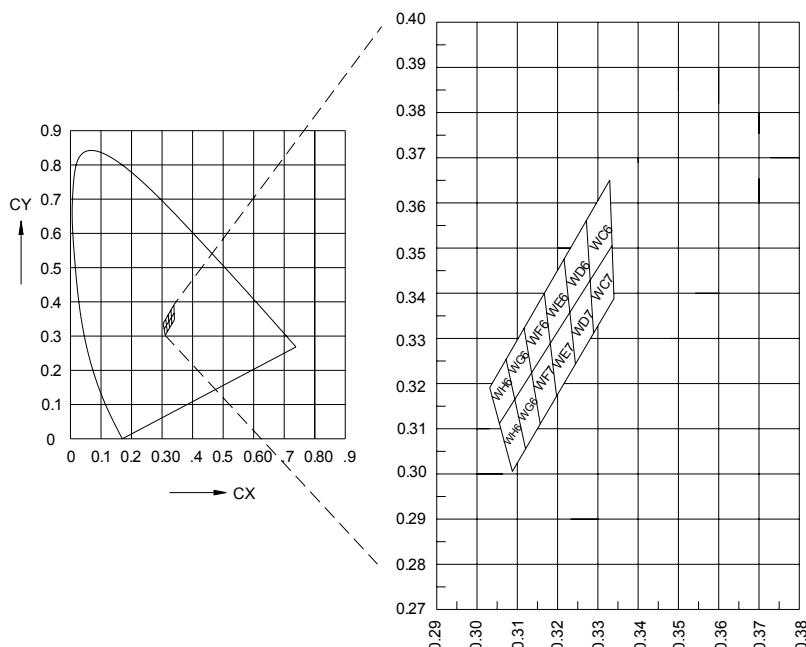
Chromaticity Coordinates Specifications for Bin Grading:

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

Bin	Rank					Bin	Rank				
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	0.3468	0.3551	0.3430	0.3353		Y	0.3353	0.3430	0.3305	0.3233
WE6	X	0.3164	0.3210	0.3218	0.3175	WE7	X	0.3175	0.3218	0.3227	0.3186
	Y	0.3395	0.3468	0.3353	0.3283		Y	0.3283	0.3353	0.3233	0.3169
WF6	X	0.3122	0.3164	0.3175	0.3136	WF7	X	0.3136	0.3175	0.3186	0.3151
	Y	0.3331	0.3395	0.3283	0.3223		Y	0.3223	0.3283	0.3169	0.3114
WG6	X	0.3085	0.3122	0.3136	0.3100	WG7	X	0.3103	0.3136	0.3151	0.3120
	Y	0.3273	0.3331	0.3223	0.3170		Y	0.3170	0.3223	0.3114	0.3064
WH6	X	0.3052	0.3085	0.3103	0.3070	WH7	X	0.3070	0.3103	0.3120	0.3091
	Y	0.3222	0.3273	0.3170	0.3118		Y	0.3118	0.3170	0.3064	0.3019

Note: X, Y Tolerance each Bin limit is ± 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:

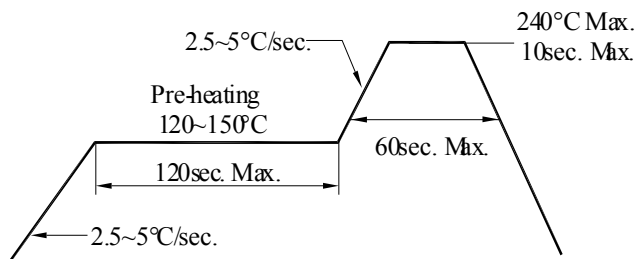
Reflow Soldering			Hand Soldering	
	Lead Solder	Lead-free Solder		
Pre-heat	120 ~ 150°C	180 ~ 200°C	Temperature	350°C Max.
Pre-heat Time	120sec. Max.	120sec. Max.	Soldering Time	3sec. Max. (one time only)
Peak Temperature	240°C Max.	260°C Max.		
Soldering Time	10sec. max.	10sec. Max.		
Condition	Refer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

* After reflow soldering rapid cooling should be avoided.

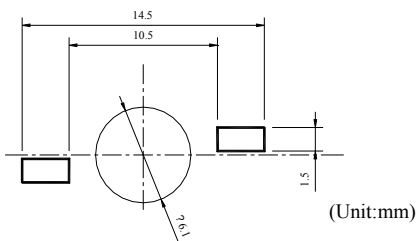
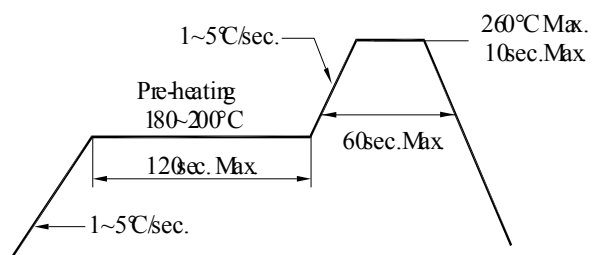
Temperature-profile (Surface of circuit board):

Use the following conditions shown in the figure.

<1 : Lead Solder>



<2 : Lead-free Solder>



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