

5W 大功率 LED/白光

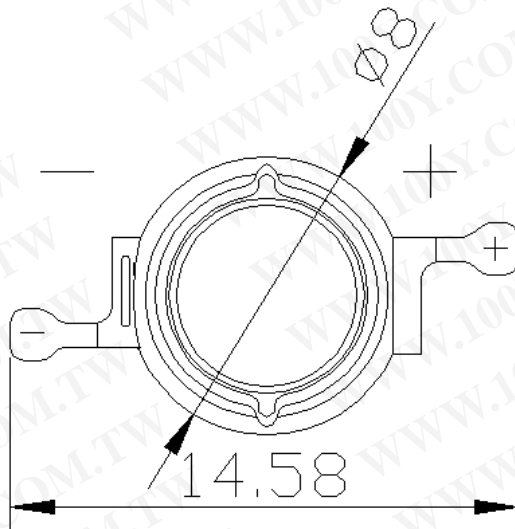
● Feature (特點)

- 5W HIGH POWER LED
- Package : TOP Package (TOP 封裝)
- Viewing Angle ($2\theta_{1/2}$): 140° (發光角度)
- Colloid Color: Water Clear (無色透明) (膠體顏色) Mist (霧)

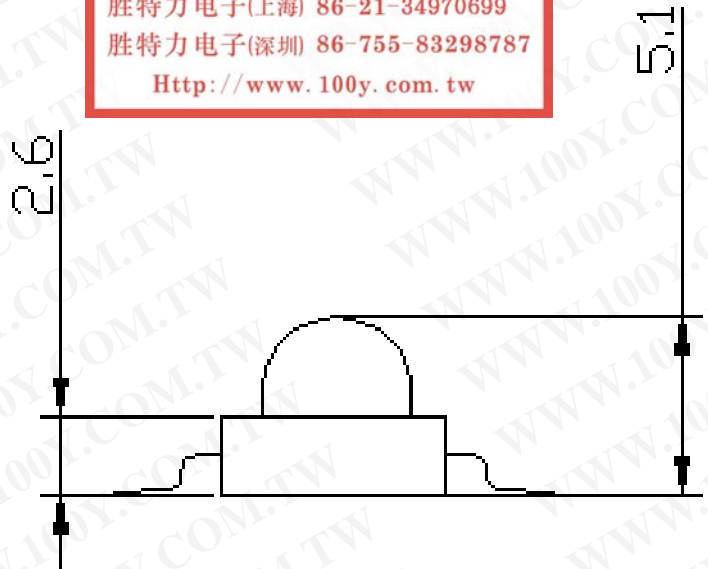
◆ Applications (應用)

- ◆ Commercial Lighting (商業照明)
- ◆ Advertisement (廣告)
- ◆ Architectural Lighting (建築照明)
- ◆ Street Lamps (路燈)

■ Package Dimensions



勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



Notes (備註):

1. All dimensions are in millimeters. (所有尺寸以毫米為單位)
2. Tolerance is ± 0.25 unless otherwise noted. (公差為 ± 0.25 ，除非另有說明)

MODEL No (型號)	Dice Material (材料)	Emitting Color (發光顏色)	Package Type (封裝類型)
YY-PR50WW5-6500K	InGaN	White	Emitter

■ Electrical/Optical Characteristics (光學特徵) (At TA=25°C)

Parameter (參數)	Symbol (符號)	Conditions (條件)	Min. (最小值)	Avg. (平均)	Max. (最大值)	Units (單位)
Luminous Intensity (流明)	Φ	$I_F=1200\text{mA}$	230		270	lm
Color Temperature (色溫)	CCT	$I_F=1200\text{mA}$	6000		6500	K
Forward Voltage (正向電壓)	V_F	$I_F=1200\text{mA}$	3.8		4.2	V
Color Rendering index (顯色指數)	Ra	$I_F=1200\text{mA}$	70			--
Thermal Resistance Junction To Board (熱阻)	$R\Theta_{J-B}$	$I_F=1200\text{mA}$		10		°C/W
50% Power Angle (50%的功率角)	$2\theta_{\frac{1}{2}}$	$I_F=1200\text{mA}$		140		deg
Reverse Current (反向電流)	I_R	$V_R=5\text{V}$			5	μA

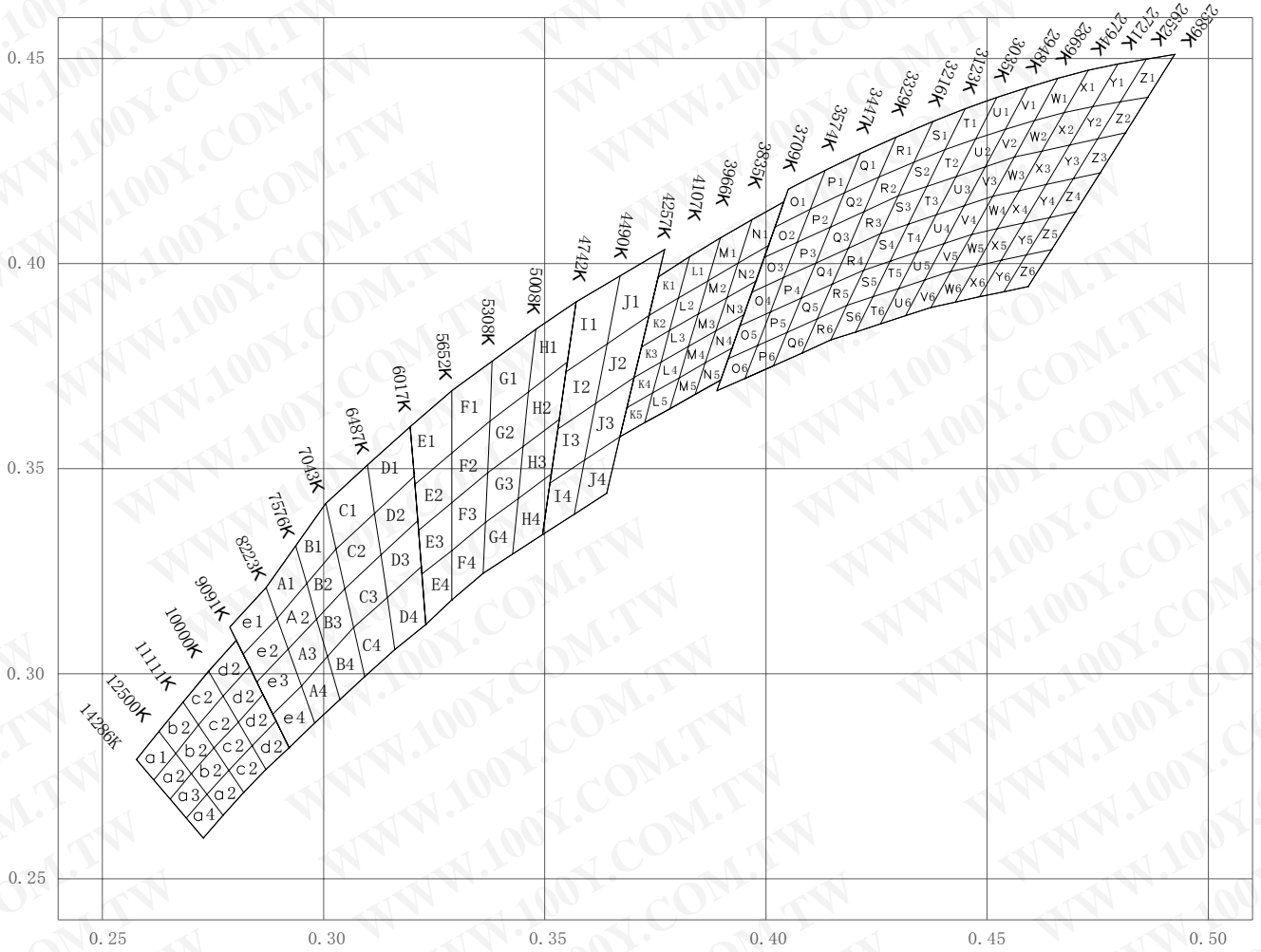
■ Absolute Maximum Rating (室內使用時的特性參數) (At TA=25°C)

Parameter (名稱)	Symbol (符號)	Ratings (參數)	Units (單位)
Power Dissipation (功率)	P_D	5	W
Continuous Forward Current (連續順向電流)	I_F	1200	mA
Peak Forward Current ^[2] (峰值正向電流)	$I_F(\text{Peak})$	1200	mA
LED Junction Temperature (LED 結點溫度)	T_J	125	°C
Reverse Voltage (反向電壓)	V_R	5	V
Operating Temperature Range (工作溫度範圍)	T_{OPR}	-30°C To +60°C	
Storage Temperature Range (存儲溫度範圍)	T_{STG}	-30°C To +60°C	
Manual Soldering Temperature (手工焊接溫度)	T_{SOL}	350°C± 20°C For 3 Seconds	
Soldering on a heat plate (焊接台溫度)	T_{SOL}	190°C± 10°C For 20Seconds	
ESD Sensitivity (防靜電敏感度)	ESD	4000V HBM	

Important Notes (重要說明) :

- 1) Tolerance of measurement of luminous flux is $\pm 10\%$. (光通量的測量公差為 $\pm 10\%$)
- 2) Tolerance of measurement of V_f is $\pm 0.1\text{ V}$. (正向電壓測試公差為 $\pm 0.1\text{ V}$)
- 3) The product will be packaged in Anti-Static vacuum. (該產品將使用防靜電真空包裝)
- 4) Please refer to High Power LED RELIABILITY TEST STANDARD for reliability test conditions.
(請參閱大功率 LED 可靠性試驗條件下的可靠性試驗標準)
- 5) Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED if necessary.
(如果有必要，使用的清潔溶劑如異丙醇 alcohol 清潔的 LED)

■ CIE Specifications (CIE 規格)



■ Color Ranks (顏色等級) (IF=700mA, Ta=25°C)

a-d Ranks	1	2	3	4	e-B Ranks	1	2	3	4
	0.2577	0.2803	0.2922	0.2728		0.2788	0.3004	0.3093	0.2922
C-D Ranks	1	2	3	4	E-F Ranks	1	2	3	4
	0.2791	0.3081	0.282	0.2599		0.3114	0.3414	0.2993	0.282
G-H Ranks	1	2	3	4	I-J Ranks	1	2	3	4
	0.3004	0.3196	0.3231	0.3093		0.3196	0.3381	0.3361	0.3231
K-N Ranks	1	2	3	4	O-R Ranks	1	2	3	4
	0.3414	0.3602	0.312	0.2993		0.3602	0.3762	0.3245	0.312
S-V Ranks	1	2	3	4	W-Z Ranks	1	2	3	4
	0.3381	0.3571	0.3495	0.3361		0.4051	0.4378	0.4147	0.3889
	1	2	3	4		1	2	3	4
	0.3762	0.3907	0.3339	0.3245		0.4181	0.4346	0.3814	0.369
	1	2	3	4		1	2	3	4
	0.3756	0.4041	0.3898	0.367		0.466	0.4924	0.4593	0.4373
	1	2	3	4		1	2	3	4
	0.3967	0.415	0.3716	0.3578		0.4452	0.451	0.3944	0.3893
	1	2	3	4		1	2	3	4
	0.4378	0.466	0.4373	0.4203					
	1	2	3	4		1	2	3	4
	0.4346	0.4452	0.3893	0.3833					

Measurement uncertainty of the color coordinates: ± 0.015 (顏色座標測量的不確定度: ± 0.015)

■ Reliability 可靠性

(1) Test Items And Condition

NO.	Items (項目)	Test Condition (測試條件)	Test Hours/Cycles (測試週期)	Sample Size (樣本大小)	Ac/Re
1	DC Operating Life (直流工作壽命)	Ta=25°C IF=1200mA	1000H	50	0/1
2	Thermal Shock (冷熱衝擊)	-40°C/1H +100°C/1H	50 Cycles	50	0/1
3	High Temperature Operation (高溫操作)	Ta=80°C±5°C IF=1200mA	1000H	50	0/1
4	High Temperature/High Humidity (高溫/高濕度)	80°C/80%RH	168H	50	0/1
5	Low Temperature Operation (低溫操作)	Ta=-40°C±5°C IF=1200mA	168H	50	0/1
6	ESD(HBM) (防靜電)	2000V HBM	1 Time	50	0/1

(2) Criteria For Judging the Damage (對於損害的判斷的準則)

Items (項目)	Symbol (符號)	Test Condition (測試條件)	Limit (範圍)	
			Min.	Max.
Luminous Intensity (光通量)	IV	IF=1200mA	L.S.L*0.8	----
Forward Voltage (正向電壓)	VF	IF=1200mA	----	U.S.L*1.1
Reverse Current (反向漏電電流)	IR	VR=5V	----	U.S.L*2.0

Note(說明):

L.S.L : Lower Standard Level (較低的標準水準)

U.S.L : Upper Standard Level (較高的標準水準)

■ Characteristics Curve (特性曲線) :

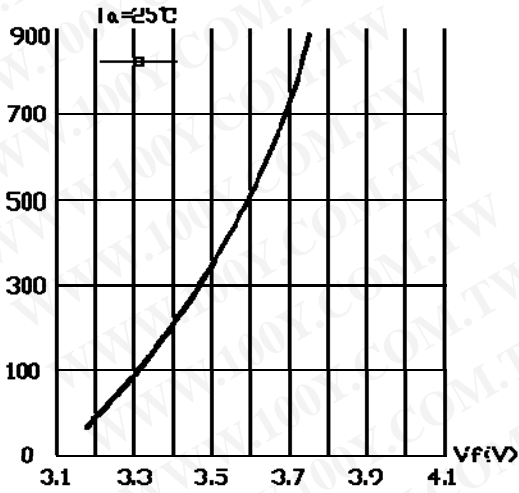


Fig.1 Forward Current vs. Forward Voltage

圖表 1：順向電流與正向電壓

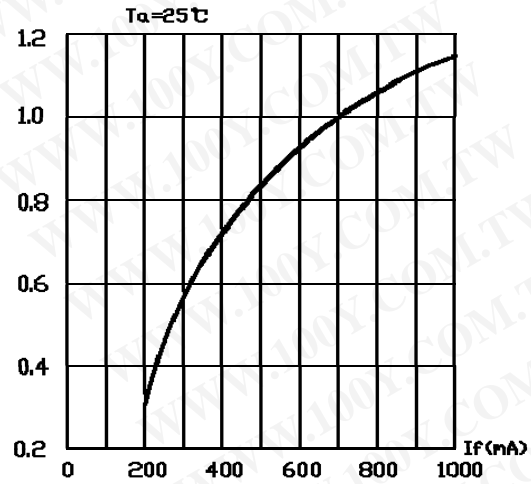


Fig.2 Relative Luminous Intensity vs. Forward Current

圖表 2：光通量與順向電流

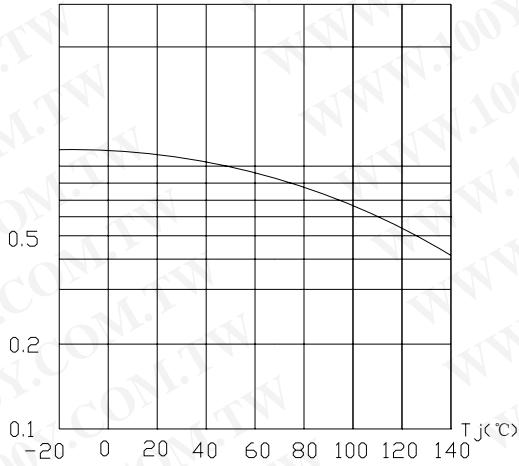


Fig.3 Relative Luminous Intensity vs. Junction Temperature

圖表 3：光通量與節點溫度

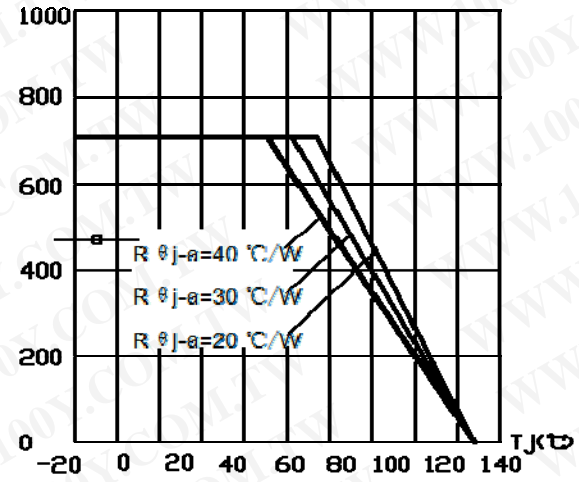


Fig.4 Maximum Forward Current vs. Ambient Temperature

圖表 4：最大順向電流與 環境溫度

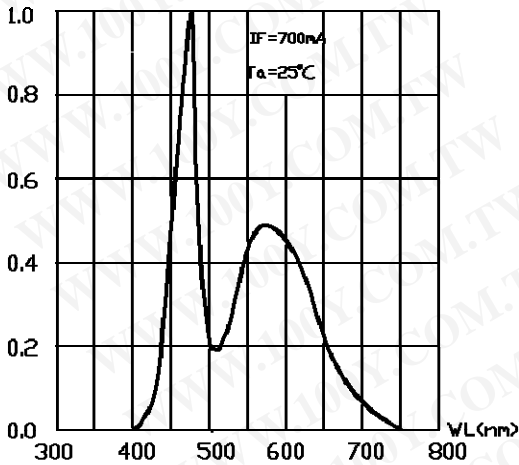


Fig.5 Relative Luminous Flux vs. Wavelength

圖表 5：光通量與波長

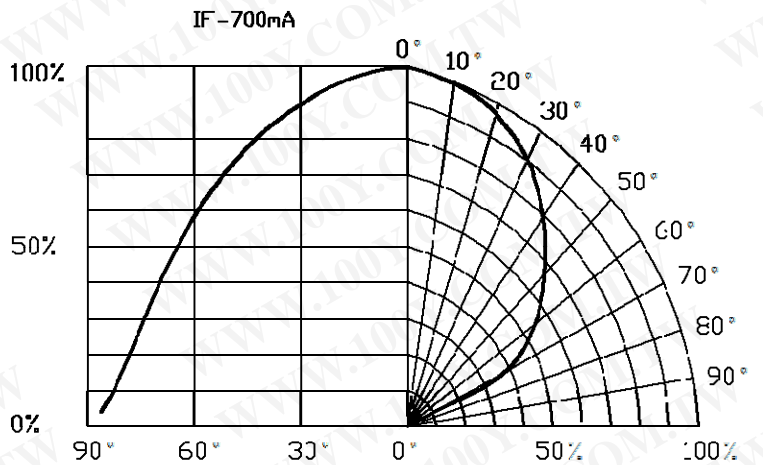


Fig.6 Relative Luminous Intensity vs. Radiation Angle

圖表 6：光通量與視角

CAUTIONS (注意事項):

The LEDs are devices which are materialized by combining Blue LEDs and special phosphors. Consequently the color of the LEDs is changed a little by an operating current. Care should be taken after due consideration when using LED' s.

此款燈珠是藍光晶片加螢光粉的特殊出光裝置，LED 工作電流的變化會影響出光的顏色，所以在使用時應適當考慮。

1. Moisture Proof Package (防潮包裝):

When moisture is absorbed into the SMT package it may vaporize and expand during soldering .There is a possibility that this can cause exfoliation of the contacts and damage to the optical characteristics of the LEDs. For this reason, the moisture proof package is used to keep Moisture to a minimum in the package.

當水分吸收到產品封裝內部時，其水分蒸發會影響產品材質。這可能會導致損壞發光二極體的光學特性。出於這個原因，防潮包裝是用來抑制外部水氣的。

2. Storage Conditions (存儲)

1) Before opening the package (開封前的包裝):

The LEDs should be kept at 30°C or less and 60%RH or less. The LEDs should be used within a year. When storing the LEDs, moisture proof packaging with absorbent material (silica gel) is recommended.

此款燈珠應存儲在 30 攝氏度或以下，相對濕度 60%或更少的狀態，應在一年內使用，請按照使用說明建議的方法使用。

2) After opening the package (開封後的包裝):

The LEDs should be kept at 30°C or less and 50%RH or less. The LEDs should be soldered within 168 hours (7days) after opening the package. If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel).It is also recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again.

燈珠應保存在 30 攝氏度或以下，相對濕度 60%或更少的狀態。燈珠的焊接應在打開防潮包裝後 168H (7 天) 內完成。如果有未使用完的燈珠，應將它們重新封存於防潮包裝中避免受潮。

If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time. Baking treatment should be performed using the following conditions.

Baking treatment : more than 48 hours at 80±5°C / 4h~12h (Humidity in accordance with the different environments)

當開封後的燈珠已超過了建議的存儲時間，應採用下列條件進行烘烤處理：超過 48 小時，在 60±5 攝氏度/4-12H (按照不同的濕度)。

3. Heat Generation (產生的熱量):

Thermal design of the end product is of paramount importance. Please consider the heat generation of the LED when making the system design. The coefficient of temperature increase per input electric power is affected by the thermal resistance of the circuit board and density of LED placement on the

board as well as other components.

The operating current should be decided after considering the ambient maximum temperature of LEDs.

應用產品的最終散熱設計是至關重要的。請設計散熱系統時考慮到燈珠工作時產生的熱量、輸入的電功率、濕度係數增加、傳導電路裝置設置及其它元件。這些都是非常必要的，工作電流、電壓、散熱確定後，這樣 LED 的使用壽命也應當得到保證。

4. Cleaning (清潔):

It is recommended that ethanol alcohol be used as a solvent for cleaning the LED ' s. when using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not. Freon solvents should not be used to clean the LEDs because of worldwide regulations.

建議使用濃度低酒精作為 LED 的清洗溶劑。當使用其它溶劑時，應當事先確認是否會對封裝結構及矽膠產生危害。依照世界各地的法則及規定，氟利昂溶劑是不能用來清潔 LED 的。

(5) Static Electricity (靜電):

Static electricity or surge voltage damages the LEDs. .

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs. All devices, equipments and machineries must be properly grounded. It is recommended that measures be taken against surge voltage to the equipment that mounts the LED' s .When inspecting the final products in which LEDs were assembled. It is recommended to check. Whether the assembled LEDs are damaged by static electricity or not. It is easy to find Static-damaged LED' s by a light -on test or a VF test at a lower current (below 20 mA is recommended). Damaged LEDs will show some unusual characteristics such as the leak current. Remarkably increases, the forward voltage becomes lower , or the LEDs do not light at the low Current.

靜電或浪湧電壓是可以對 LED 產生致命的傷害。建議使用及處理發光二極體時佩戴防靜電手腕帶或防靜電手套。所有設備和機械必須妥善接地。這個措施適用於所有安裝了 LED 的設備，完全考慮到組裝的最終產品在 LED 的組裝過程中，建議檢查是否有對發光二極體器件造成了靜電損傷。在低的電流環境下（電流 < 20 mA）受損了的 LED 將顯示一些不尋常的特點，靜電擊穿後漏電流值的增加，正向電壓變低，造成 LED 死燈。