

## 3W 大功率 LED/白光

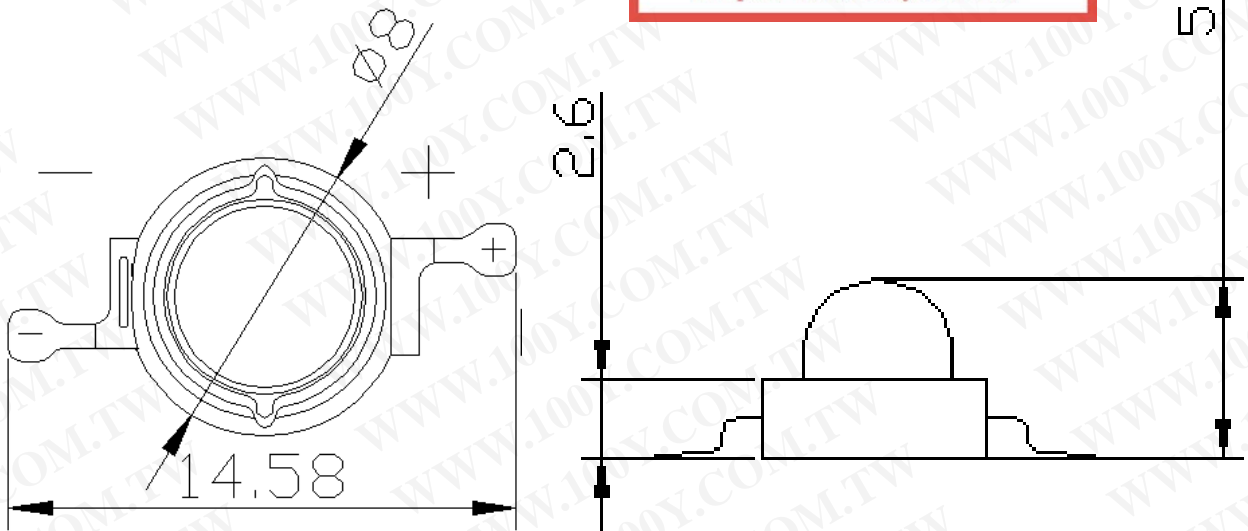
### ◆ Applications (应用)

### ● Feature (特点)

- 3W HIGH POWER LED
- Package : TOP Package (TOP 封装)
- Viewing Angle ( $2\theta_{1/2}$ ): 140° (发光角度)
- Colloid Color: Water Clear (无色透明) (胶体颜色) Mist (雾)

- ◆ Commercial Lighting (商业照明)
- ◆ Advertisement (广告)
- ◆ Architectural Lighting (建筑照明)
- ◆ Street Lamps (路灯)

### ■ 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 (备注):

1. All dimensions are in millimeters. (所有尺寸以毫米为单位)
2. Tolerance is  $\pm 0.25$  unless otherwise noted. (公差为 $\pm 0.25$ , 除非另有说明)

MODEL No (型号)	Dice Material (材料)	Emitting Color (发光颜色)	Package Type (封装类型)
YY-JR45WW3-6500K	InGaN	White	Emitter

## ■ Electrical/Optical Characteristics (光学特征) (At TA=25°C)

Parameter (参数)	Symbol (符号)	Conditions (条件)	Min. (最小值)	Avg. (平均)	Max. (最大值)	Units (单位)
Luminous Intensity (流明)	$\Phi$	$I_F=700\text{mA}$	180		220	lm
Color Temperature (色温)	CCT	$I_F=700\text{mA}$	6000		6500	K
Forward Voltage (正向电压)	$V_F$	$I_F=700\text{mA}$	3.6		3.8	V
Color Rendering index (显色指数)	Ra	$I_F=700\text{mA}$	70			--
Thermal Resistance Junction To Board (热阻)	$R\theta_{J-B}$	$I_F=700\text{mA}$		10		°C/W
50% Power Angle (50%的功率角)	$2\theta_{\frac{1}{2}}$	$I_F=700\text{mA}$		140		deg
Reverse Current (反向电流)	$I_R$	$V_R=5\text{V}$			5	$\mu\text{A}$

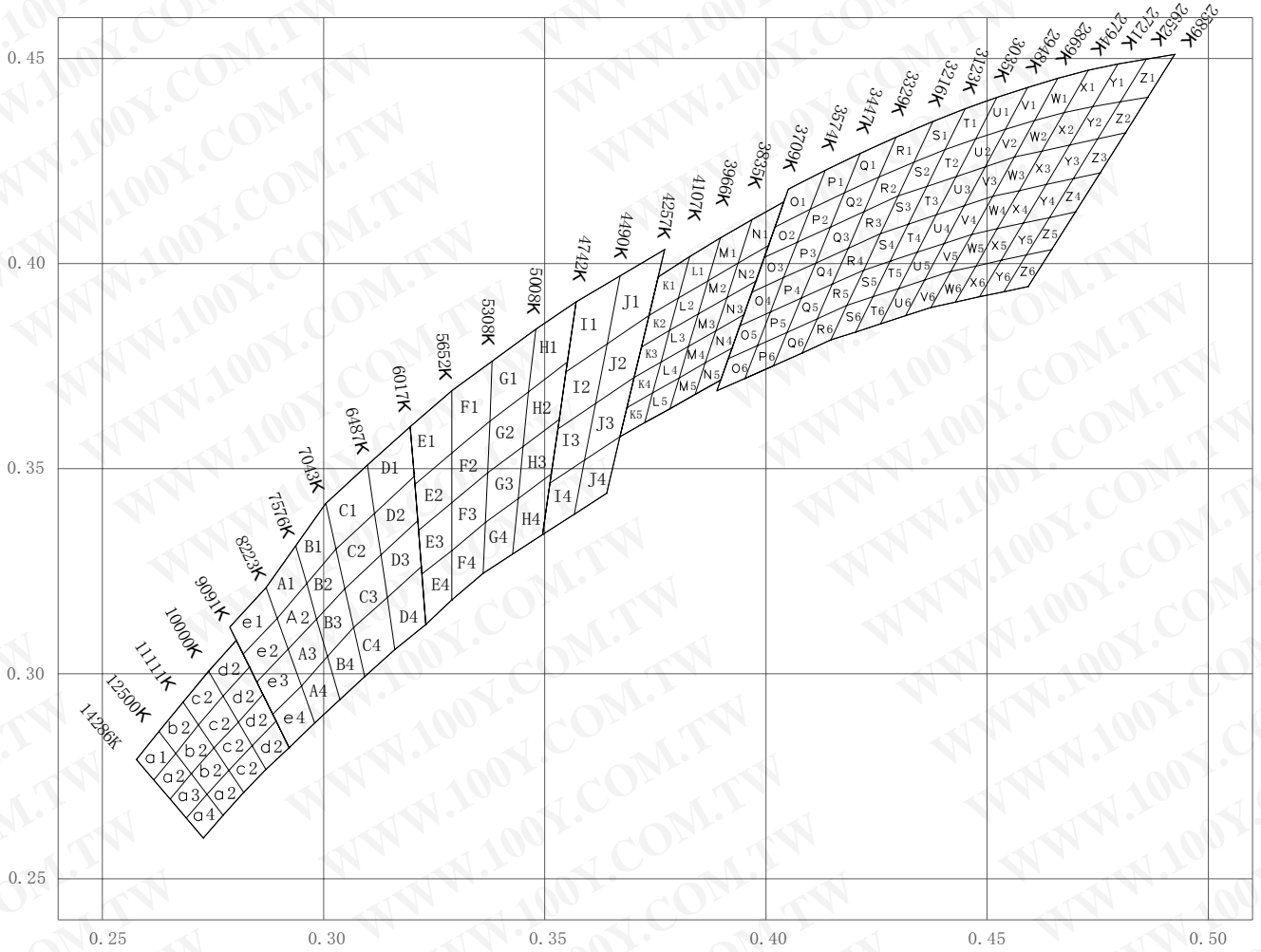
## ■ Absolute Maximum Rating (室内使用时的特性参数) (At TA=25°C)

Parameter (名称)	Symbol (符号)	Ratings (参数)	Units (单位)
Power Dissipation (功率)	$P_D$	2.6	W
Continuous Forward Current (连续正向电流)	$I_F$	700	mA
Peak Forward Current <sup>[2]</sup> (峰值正向电流)	$I_F(\text{Peak})$	1000	mA
LED Junction Temperature (LED 结点温度)	$T_J$	125	°C
Reverse Voltage (反向电压)	$V_R$	5	V
Operating Temperature Range (工作温度范围)	$T_{OPR}$	-30°C To +60°C	
Storage Temperature Range (存储温度范围)	$T_{STG}$	-30°C To +60°C	
Manual Soldering Temperature (手工焊接温度)	$T_{SOL}$	350°C± 20°C For 3 Seconds	
Soldering on a heat plate (焊接台温度)	$T_{SOL}$	190°C± 10°C For 20Seconds	
ESD Sensitivity (防静电敏感度)	ESD	4000V HBM	

### Important Notes (重要说明) :

- 1) Tolerance of measurement of luminous flux is  $\pm 10\%$ . (光通量的测量公差为 $\pm 10\%$ )
- 2) Tolerance of measurement of  $V_f$  is  $\pm 0.1\text{ V}$ . (正向电压测试公差为 $\pm 0.1\text{ V}$ )
- 3) The product will be packaged in Anti-Static vacuum. (该产品将使用防静电真空包装)
- 4) Please refer to High Power LED RELIABILITY TEST STANDARD for reliability test conditions.  
(请参阅大功率 LED 可靠性试验条件下的可靠性试验标准)
- 5) Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED if necessary.  
(如果有必要, 使用的清洁溶剂如异丙醇 alcohol 清洁的 LED)

## ■ CIE Specifications (CIE 规格)



## ■ Color Ranks (颜色等级) (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:  $\pm 0.015$  (颜色坐标测量的不确定度:  $\pm 0.015$ )

## ■ Reliability 可靠性

### (1) Test Items And Condition

NO.	Items (项目)	Test Condition (测试条件)	Test Hours/Cycles (测试周期)	Sample Size (样本大小)	Ac/Re
1	<b>DC Operating Life</b> (直流工作寿命)	Ta=25°C IF=700mA	1000H	50	0/1
2	<b>Thermal Shock</b> (冷热冲击)	-40°C/1H +100°C/1H	50 Cycles	50	0/1
3	<b>High Temperature Operation</b> (高温操作)	Ta=80°C±5°C IF=700mA	1000H	50	0/1
4	<b>High Temperature/High Humidity</b> (高温/高湿度)	80°C/80%RH	168H	50	0/1
5	<b>Low Temperature Operation</b> (低温操作)	Ta=-40°C±5°C IF=700mA	168H	50	0/1
6	<b>ESD(HBM)</b> (防静电)	2000V HBM	1 Time	50	0/1

### (2) Criteria For Judging the Damage (对于损害的判断的准则)

Items (项目)	Symbol (符号)	Test Condition (测试条件)	Limit (范围)	
			Min.	Max.
<b>Luminous Intensity</b> (光通量)	IV	IF=700mA	L.S.L*0.8	----
<b>Forward Voltage</b> (正向电压)	VF	IF=700mA	----	U.S.L*1.1
<b>Reverse Current</b> (反向漏电电流)	IR	VR=5V	----	U.S.L*2.0

**Note(说明):**

L.S.L : Lower Standard Level (较低的标准水平)

U.S.L : Upper Standard Level (较高的标准水平)

## ■ Characteristics Curve (特性曲线):

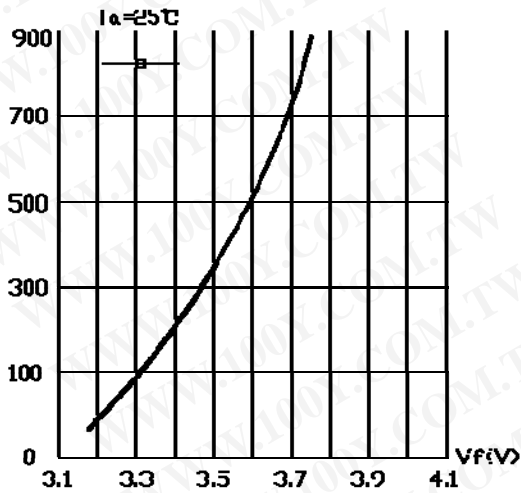


Fig.1 Forward Current vs. Forward Voltage

图表 1: 顺向电流与正向电压

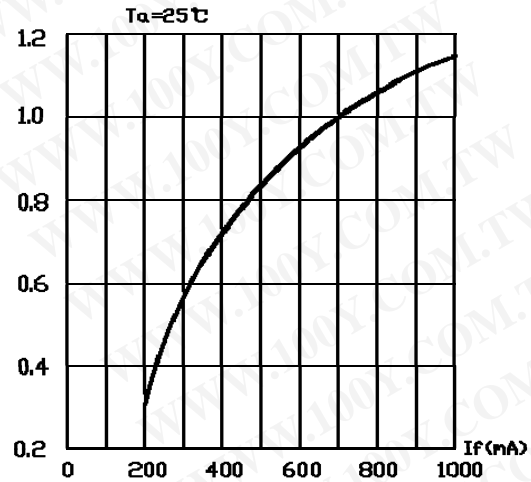


Fig.2 Relative Luminous Intensity vs. Forward Current

图表 2: 光通量与顺向电流

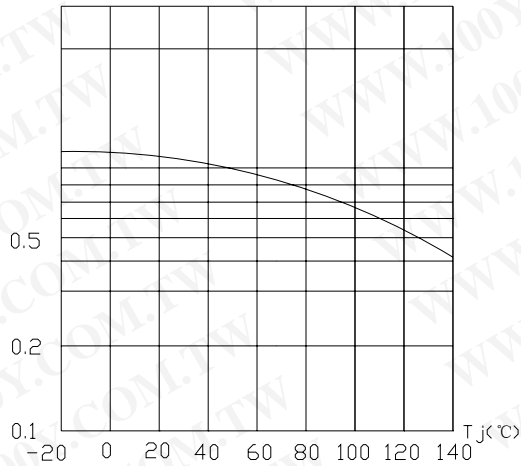


Fig.3 Relative Luminous Intensity vs. Junction Temperature

图表 3: 光通量与节点温度

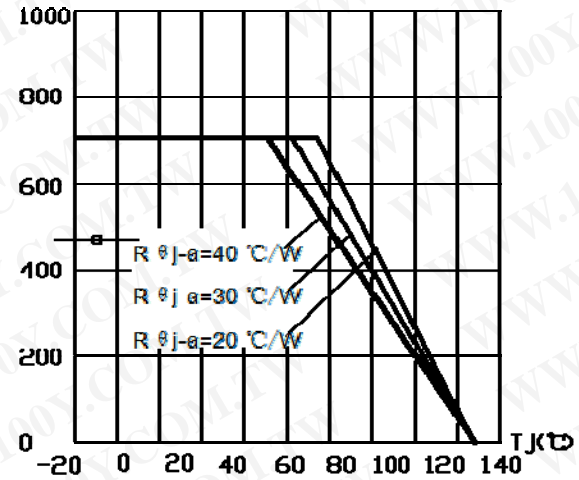


Fig.4 Maximum Forward Current vs. Ambient Temperature

图表 4: 最大顺向电流与 环境温度

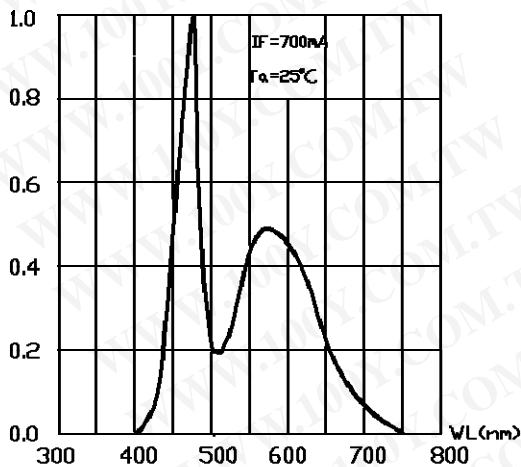


Fig.5 Relative Luminous Flux vs. Wavelength

图表 5: 光通量与波长

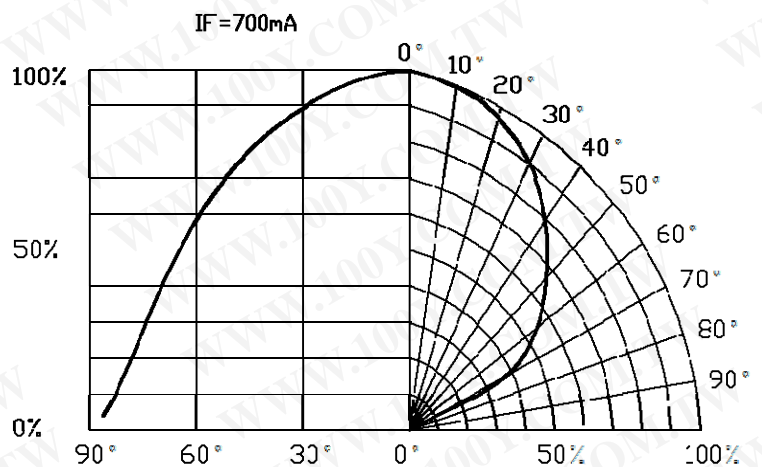


Fig.6 Relative Luminous Intensity vs. Radiation Angle

图表 6: 光通量与视角

## CAUTIONS (注意事项):

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.

此款灯珠是蓝光晶片加荧光粉的特殊出光装置，LED 工作电流的变化会影响出光的颜色，所以在使用时应适当考虑。

### 1. Moisture Proof Package (防潮包装):

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.

当水分吸收到产品封装内部时，其水分蒸发会影响产品材质。这可能会导致损坏发光二极管的光学特性。出于这个原因，防潮包装是用来抑制外部水气的。

### 2. Storage Conditions (存储)

#### 1) Before opening the package (开封前的包装):

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.

此款灯珠应存储在 30 摄氏度或以下，相对湿度 60%或更少的状态，应在一年内使用，请按照使用说明建议的方法使用。

#### 2) After opening the package (开封后的包装):

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.

灯珠应保存在 30 摄氏度或以下，相对湿度 60%或更少的状态。灯珠的焊接应在打开防潮包装后 168H ( 7 天 ) 内完成。如果有未使用完的灯珠，应将它们重新封存于防潮包装中避免受潮。

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)

当开封后的灯珠已超过了建议的存储时间，应采用下列条件进行烘烤处理 超过 48 小时，在 60±5 摄氏度/4-12H ( 按照不同的湿度 )。

### 3. Heat Generation (产生的热量):

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.

应用产品的最终散热设计是至关重要的。请设计散热系统时考虑到灯珠工作时产生的热量、输入的电功率、湿度系数增加、传导电路装置设置及其它组件。这些都是非常必要的，工作电流、电压、散热确定后，这样 LED 的使用寿命也应当得到保证。

#### **4. Cleaning ( 清洁 ):**

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.

建议使用浓度低酒精作为 LED 的清洗溶剂。当使用其它溶剂时，应当事先确认是否会对封装结构及硅胶产生危害。依照世界各地的法则及规定，氟利昂溶剂是不能用来清洁 LED 的。

#### **(5) Static Electricity ( 静电 ):**

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.

静电或浪涌电压是可以对 LED 产生致命的伤害。建议使用及处理发光二极体时佩戴防静电手腕带或防静电手套。所有设备和机械必须妥善接地。这个措施适用于所有安装了 LED 的设备，完全考虑到组装的最终产品在 LED 的组装过程中，建议检查是否有对发光二极体器件造成了静电损伤。在低的电流环境下（电流 < 20 mA）受损了的 LED 将显示一些不寻常的特点，静电击穿后漏电流值的增加，正向电压变低，造成 LED 死灯。