SPECIFICATION

客　　户　　Customer：

产品型号 Model.　　NO：1W　HIGH POWER LED

文件编号 Document.　NO：

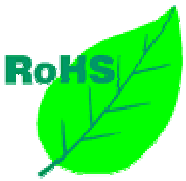
版　　次 REV　　NO：A1.0

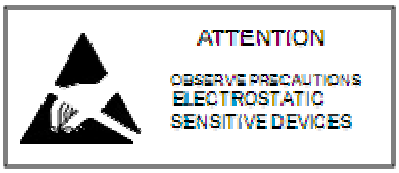
描述 Description:

■ 型号（P/N）:1W HIGH POWER LED

■ 尺寸 Package ： mm

■ 发光颜色 Emission Color：正白/Pure White

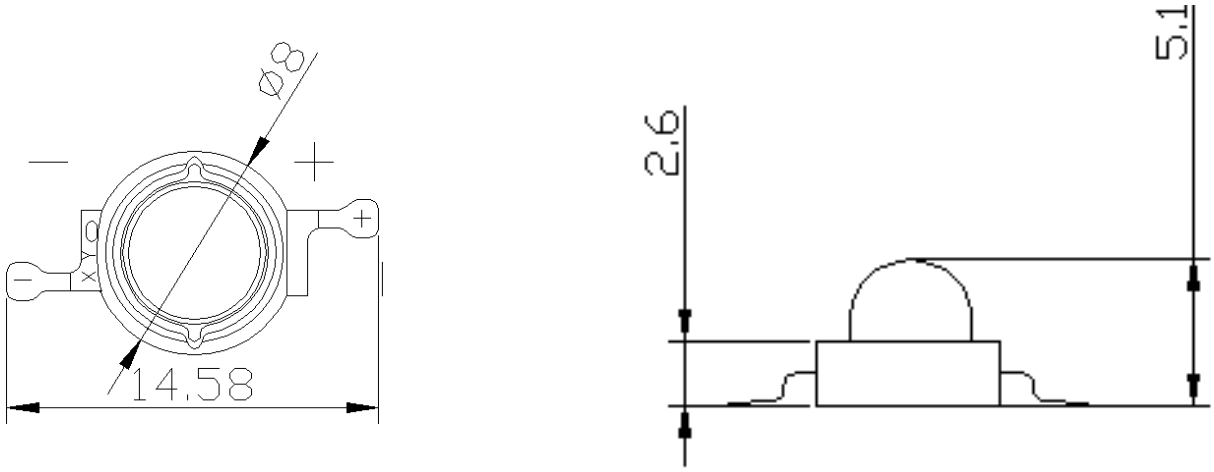




客户确认	批准	QA 审核	拟制

●Feature （特点）	◆ Applications（应用）
●1W High Power LED	◆Commercial Lighting （商业照明）
● Package :mitter （单颗封装）	◆ Advertisement （广告）
●Viewing Angle ($2\Theta_{1/2}$):140° （发光角度）	◆Architectural Lighting （建筑照明）
●Colloid Color: Yellow （胶体颜色）	◆ Street Lamps （路灯）

■ Package Dimensions（封装尺寸）



Notes（备注）:

1.All dimensions are in millimeters. （所有尺寸以毫米为单位）

2.Tolerance is ±0.25 unless otherwise noted. （公差为±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）
	InGaN	Pure White	Emitter

Electrical/Optical Characteristics (At T_A=25°C) （光学特征）

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）	Φ	I_F=350mA	120		130	lm
Color Temperature （色温）	CCT	I_F=350mA	6000		6500	K
Forward Voltage （正向电压）	V_F	I_F=350mA	3.2		3.4	V
Color Rendering index （显色指数）	Ra	I_F=350mA	75			– –
Thermal Resistance Junction To Board （热阻）	$R\Theta_{J-B}$	I_F=350mA		10		°C/W
50% Power Angle （50%的功率角）	2θ½	I_F=350mA		140		deg
Reverse Current （反向电流）	I_R	V_R=5V			5	μA

■ 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	1.1	W
Continuous Forward Current （连续顺向电流）	I_F	350	mA
Peak Forward Current [2] （峰值正向电流）	I_F(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 ±10%.（光通量的测量公差为±10%）

2) Tolerance of measurement of Vf is ±0.1 V.（正向电压测试公差为±0。1V）

3) The product will be packaged in Anti-Static vacuum. （该产品将使用防静电真空包装）

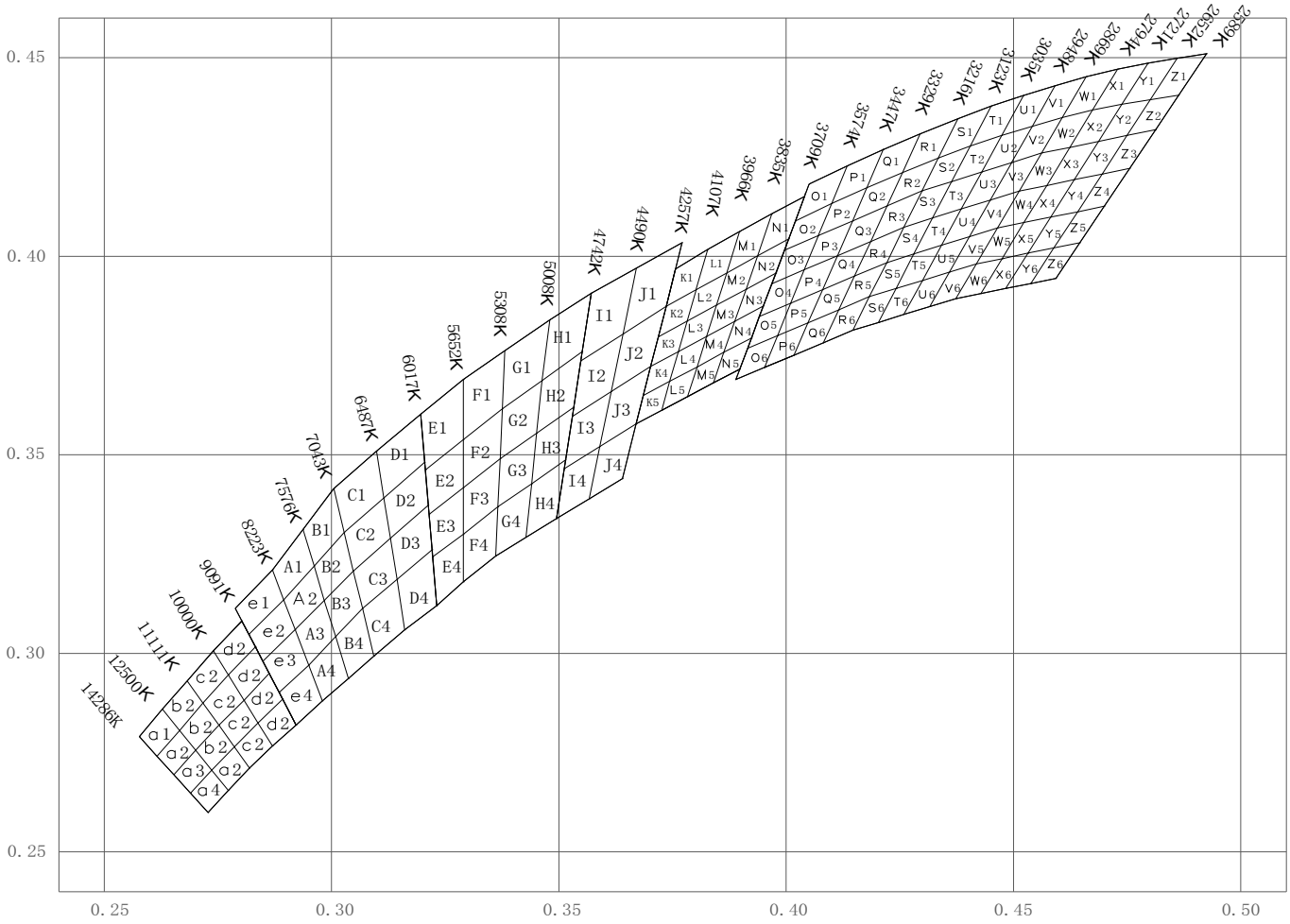
4) Please refer to High Power LED RELIABILITY TEST STANDARD for reliability test conditions.

（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 alcohl-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 alcohl 清洁的 LED）

CIE Specifications(CIE 规格）



Color Ranks（颜色等级）(IF=350mA,Ta=25℃)

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
	0.2791	0.3081	0.282	0.2599		0.3114	0.3414	0.2993	0.282
C-D Ranks	1	2	3	4	E-F Ranks	1	2	3	4
	0.3004	0.3196	0.3231	0.3093		0.3196	0.3381	0.3361	0.3231
	0.3414	0.3602	0.312	0.2993		0.3602	0.3762	0.3245	0.312
G-H Ranks	1	2	3	4	I-J Ranks	1	2	3	4
	0.3381	0.3571	0.3495	0.3361		0.3571	0.3771	0.364	0.3495
	0.3762	0.3907	0.3339	0.3245		0.3907	0.4034	0.344	0.3339
K-N Ranks	1	2	3	4	O-R Ranks	1	2	3	4
	0.3756	0.4041	0.3898	0.367		0.4051	0.4378	0.4147	0.3889
	0.3967	0.415	0.3716	0.3578		0.4181	0.4346	0.3814	0.369
S-V Ranks	1	2	3	4	W-Z Ranks	1	2	3	4
	0.4378	0.466	0.4373	0.4203		0.466	0.4924	0.4593	0.4373
	0.4346	0.4452	0.3893	0.3833		0.4452	0.451	0.3944	0.3893

Measurement uncertainty of the color coordinates:±0.015（颜色坐标测量的公差为：±0.015）

Reliability 可靠性

（1） Test Items And Condition（测试项目和条件）

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	**DC Operating Life** **（直流工作寿命）**	Ta=25℃ IF=350mA	1000H	50	0/1
2	**Thermal Shock** （冷热冲击）	-40℃/1H +100℃/1H	50 Cycles	50	0/1
3	**High Temperature Operation** （高温操作）	Ta=80℃±5℃ IF=350mA	1000H	50	0/1
4	**High Temperature/ High Humidity** （高温/高湿度）	80℃/80%RH	168H	50	0/1
5	**Low Temperature Operation** （低温操作）	Ta=-40℃±5℃ IF=350mA	168H	50	0/1
6	**ESD(HBM)** （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.
Luminous Intensity **（光通量）**	IV	IF=350mA	L.S.L*0.8	-----
Forward Voltage （正向电压）	VF	IF=350mA	-----	U.S.L*1.1
Reverse Current （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）：

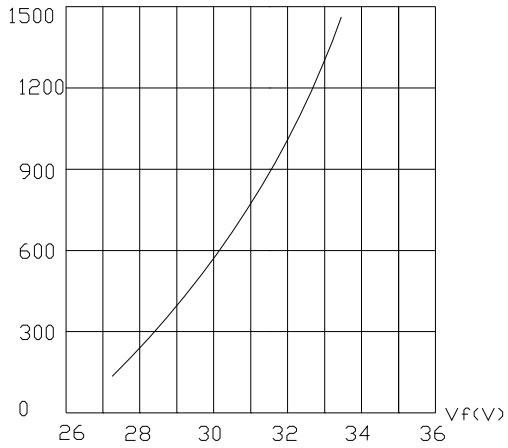


Fig.1 Forward Current vs. Forward Voltage

图表一：顺向电流与正向电压

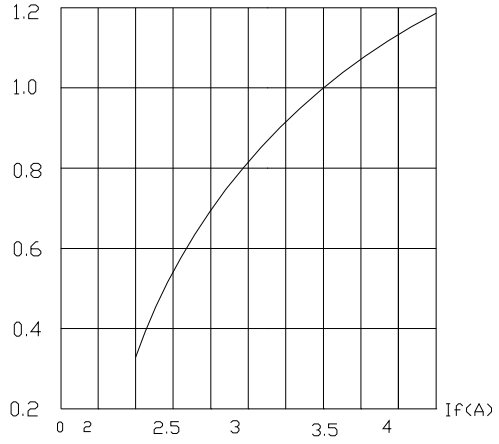


Fig.2 Relative Luminous Intensity vs. Forward Current

图表二：光通量与顺向电流

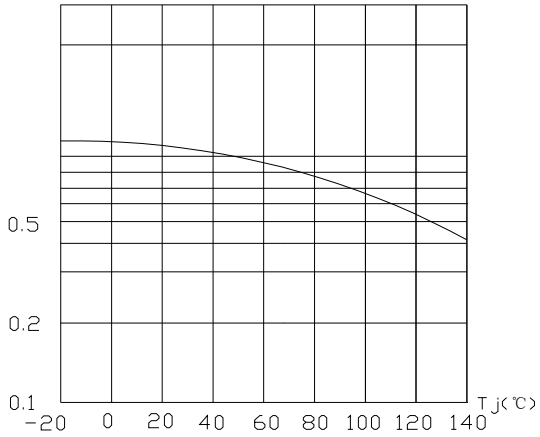


Fig.3 Relative Luminous Intensity vs. Junction Temperature

图表三：光通量与节温点

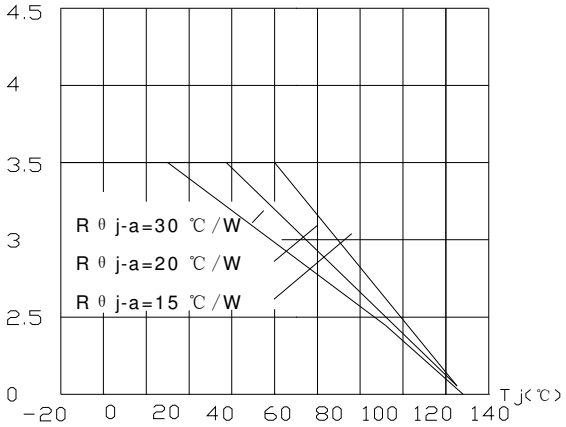


Fig.4 Maximum Forward Current vs. Ambient Temperature

图表四：最大电流与环境温度

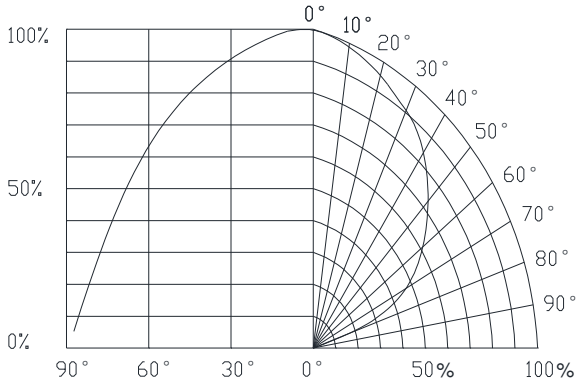


Fig.6 Relative Luminous Intensity vs.Radiation Angle

图表五：光通量与视角

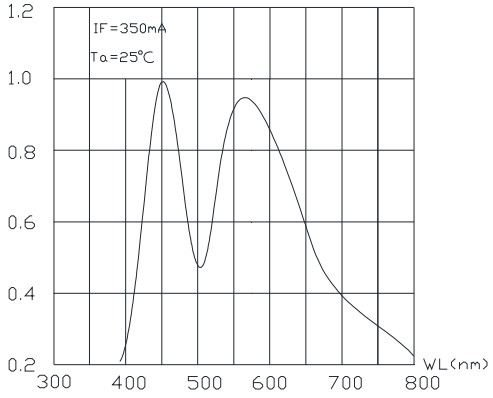


Fig.5 Relative Luminous Flux vs. Wavelength

图表六：光通量与波长

CAUTIONS：

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.

(1) Moisture Proof Package:

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.

(2) Storage Conditions

Before opening the package:

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

After opening the package:

The LEDs should be kept at 30℃ 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.

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℃/ 4h~12h (Humidity in accordance with the different environments)

(3) Heat Generation

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.

（4）Cleaning

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.

(5) Static Electricity

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.

注意事项

发光二极体是特殊出光的装置，LED 工作电流的改变可干扰出光的颜色，所以在使用时应适当考虑。

1．防潮包装

当水分吸被收到产品封装内部时，其水分蒸发会影响产品材质。这可能会导致损坏到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．存储

开封前的包装：

发光二极管就保持在 30 摄氏度或以下，相对湿度 60%或更少的状态。发光二极体应在一年内使用。并且按照使用说明的建议去做。

开封后的包装：

发光二极管应保存在 30 摄氏度或以下，相对湿度 60%或更少的状态。发光二极体的焊接应在打开防潮包装后 168H（7 天）内完成。如果有未使用完的发光二极管，应重新将它们存放在防潮包装中。建议未使用完的发光二极管，重新封装入防潮袋封口储存。当储存的发光二极管（LED）已超 过了合理的存储时间，应采用下列条件进行烘干处理。

烘烤处理：超过 48 小时，在 60±5 摄氏度/2-10H（按照不同的湿度）。

3．产生的热量

最终散热设计是应用产品至关重要的。请设计散热系统时考虑到 LED 工作时产生的热量，输入的电功率，湿度系数增加，热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、散热决定后，这样 LED 的使用寿命也应当得到保证。

4．清洁

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．静电

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，人们能够很容易找到静电对器件造成了破坏。（建议：在低的电流环境下<20Ma）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。）