Specification
产品规格书

公司名称：中山市创智光电有限公司

Zhongshan Chuangzhi Optoelectronics Co.,Ltd

部　　门：工程部（R&D）

产品规格：2W-EMC3030/21V/XXXXK/R90-S

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产品简介 Descriptions

- 封装尺寸
  Size 3.0*3.0*0.6mm
- 适用于所有的 SMT 组装和焊接工艺
  Suitable for all SMT assembly and solder process
- 防潮等级
  Level 3 Moisture sensitivity level: Level 3
- 包装每卷 5000PCS
  Package:2000pcs/reel.

产品应用 Application

- 智能家居照明磁吸，格栅线条灯 筒灯，投射灯
  Smart home lighting magnetic suction, grille line lamp tube lamp, projection lamp
- 室内/户外照明
  Indoor/Outdoor Lighting
- 广告背光
  Advertising backlight
- 一般应用
  General applications

1.产品编码原则 Product coding principles

a） 物料编码说明 Material Code Description

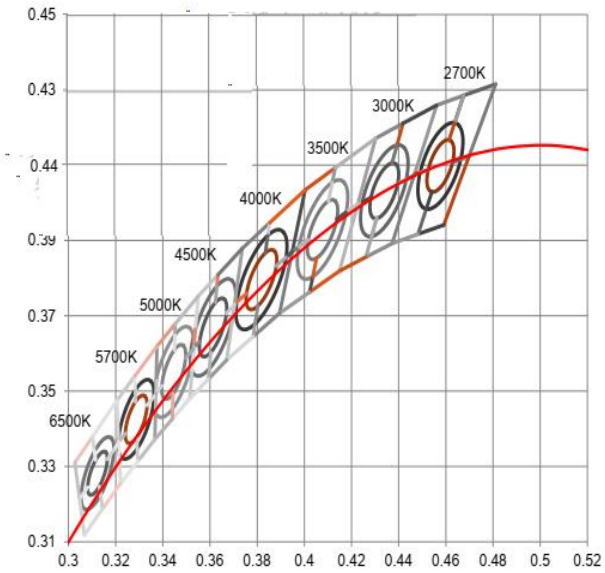
HY-2W-EMC3030/21V/XXXXK/R90--S

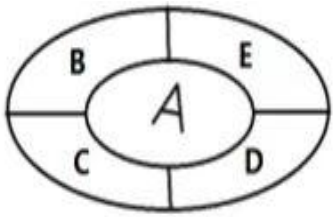
HY：表示鸿阳光电	HY:Representing Hongyang Optoelectronics
2W:表示极限功率	2W:Indicate the limit power
3030：EMC 支架 3030 封装	3030:EMC bracket 3030 package
21V：典型电压 21V	21V ：Typical voltage21V
XXXXXK:表示色温	XXXXK:Indicates color temperature
R90：典型显色指数	R90: Typical color rendering index
S：支架是方杯	S：The bracket is a square cup

b)BIN 级说明 BIN-level description

CIE1931 X,Y- 色区分级分色是按色容差进行，内圈是3set，外圈是5set。

CIE1931 X,Y-color differentiation and classification is based on color difference, with the inner circle consisting of 3 sets and the outer circle consisting of 5 sets.





CCT	Center Cx	Center Cy	3step a	3step b	5step a	5step b	Ø
2200 K	0.5020	0.4156	0.0072	0.0040	0.0120	0.0067	39.9
2700 K	0.4577	0.4098	0.0080	0.0041	0.0133	0.0068	54.1
3000 K	0.4339	0.4032	0.0086	0.0042	0.0142	0.0069	53.7
3500 K	0.4077	0.3929	0.0093	0.0042	0.0155	0.0069	53.9
4000 K	0.3818	0.3796	0.0094	0.0041	0.0157	0.0068	53.4
5000 K	0.3446	0.3551	0.0081	0.0035	0.0135	0.0059	59.8
5700 K	0.3287	0.3425	0.0072	0.0032	0.0119	0.0052	58.8
6500 K	0.3123	0.3282	0.0066	0.0027	0.0110	0.0045	58.1

备注

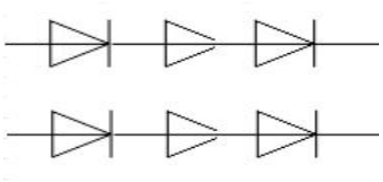
1. 为了让终端客户在使用灯具时光源是符合标准色温，故灯珠在分色是制定的色容差中心点有做调整。
2. 色坐标允许公差为±0. 005
3. 温度：25 ˚C，湿度：60%

notes

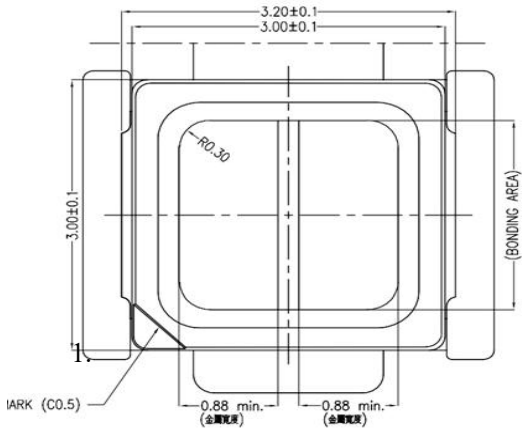
1.In order to ensure that the light source meets the standard color temperature when using the lighting fixtures, adjustments have been made to the color tolerance center point

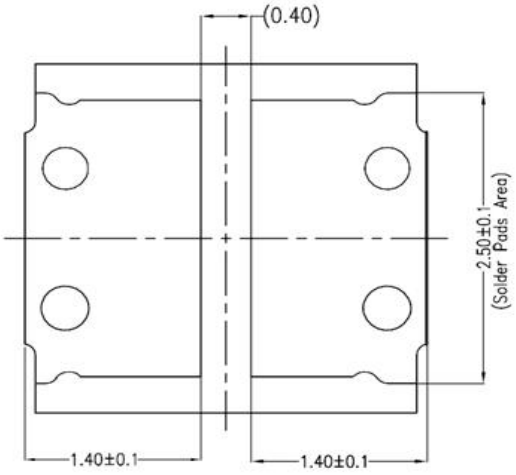
of the lamp beads during color separation.
2. The allowable tolerance for color coordinates is ± 0.005
3. Temperature: 25 ℃, humidity: 60%

2.灯珠内部芯片串并电路原理图 Schematic diagram of the internal chip serial parallel circuit of the lamp bead



3.外观和尺寸图 Appearance and dimensional drawings





备注
1. 所有尺寸标注单位为毫米
2. 除特别标注外，所有尺寸允许公差±0.05mm。

notes
1.All dimensions are marked in millimeters
2.Unless otherwise specified, all dimensions are allowed to have a tolerance of ± 0.05mm.

4.最大限定参数(Ta=25℃)

Maximum limiting parameter (Ta=25 ℃)

参数 Parameter	缩写 abbreviation	标称值 nominalvalue	单位 unit
单色顺向电流 Single color forward current	I_F	100	mA
单色顺向峰值电*1 Monochrome forward peak current*1	I_{Fp}	150	mA
芯片结温 Chip junction temperature	Tj	125	℃
焊接温度 Welding temperature	Tsol	260 (for 8seconds)	℃
使用温度 Operating temperature	Topr	-40℃~105℃	-
储存温度 Storage temperature	Tstg	-40℃~105℃	-
静电放电 Electrostatic discharge	ESD	2000	V

主要光电参数(Ta=25℃)

Main optoelectronic parameters (Ta=25℃)

参数Parameter	缩写 abbreviation	最小值 min	典型值 tye	最大值 max	单位 unit	条件IF
单色正向电压 forward voltage	Vf	--	21.0	23	V	IF=100mA @4000K
亮度 luminous flux	Lm	--	220	----	lm	
相对色温 Color Temperature	CCT	--	4000	-	K	
发光角度 viewing angle	2θ1/2	----	120	----	deg	
显色指数 Rendering Index	Ra	--	90	--		

备注

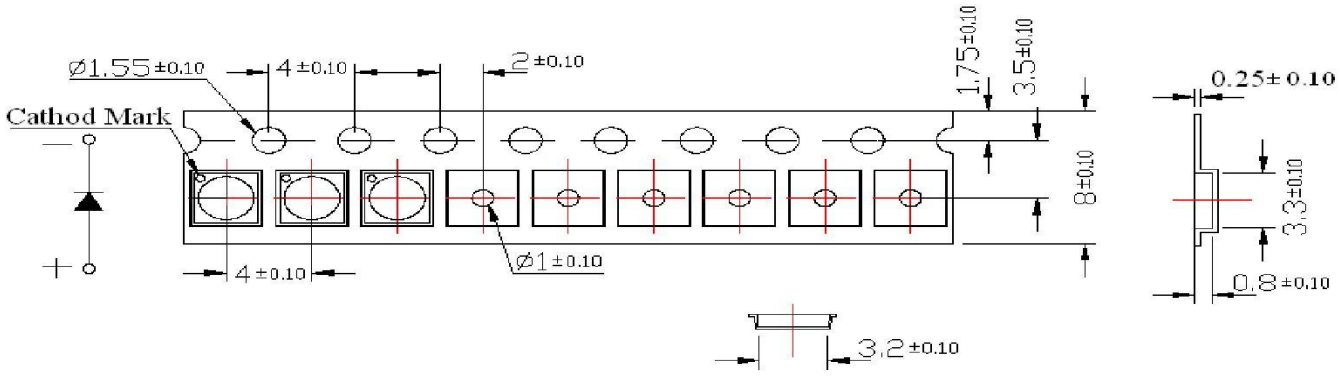
1. 光通量的测试允许公差为±5%
2. 正向电压的测试允许公差为±0.1V
3. 色坐标允许公差为±0.005

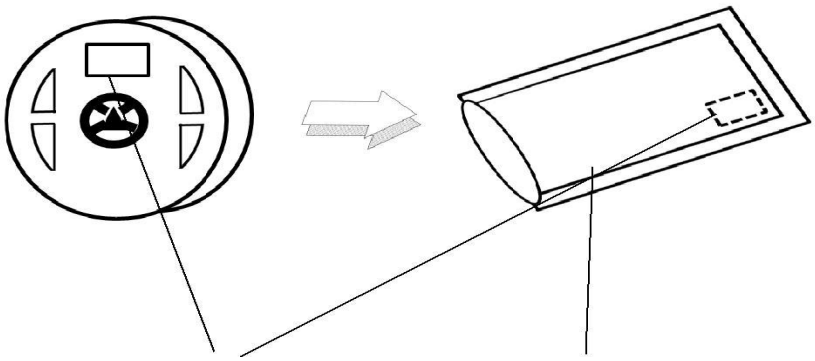
4. 显色指数的允许公差为±2
5. 以上数据为鸿阳实验设备测试结果
6. 测试用 MPCB 尺寸为厚度 2mm，直径 30mm

Notes
1.The allowable tolerance for testing luminous flux is ± 5%
2.The allowable tolerance for testing forward voltage is ± 0.1V
3.The allowable tolerance for color coordinates is ± 0.005
4.The allowable tolerance for color rendering index is ± 2
5.The above data is the test results of Hongyang experimental equipment
6.The MPCB size for testing is 2mm thickness and 30mm diameter

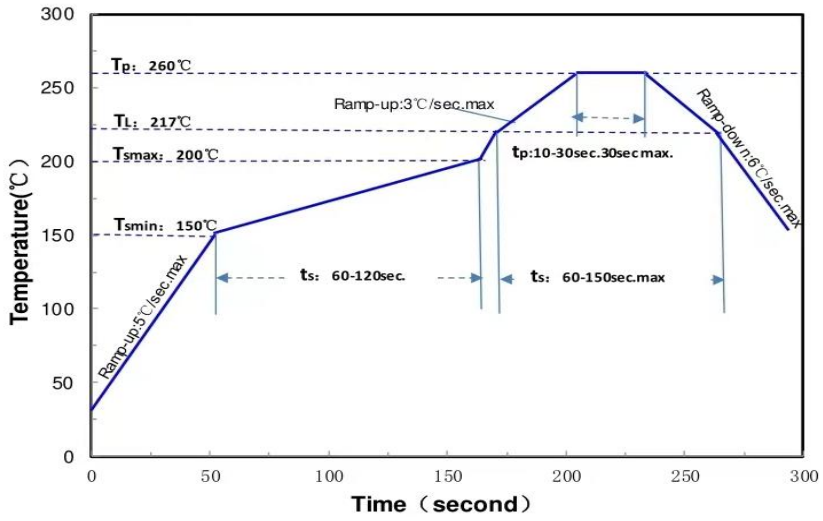
6.包装规格 Packaging specifications

包装数量：5000 pcs/卷
Packaging quantity: 5000 pcs/roll





回流焊参考数据 Reflow soldering reference data



Profile Feature	Lead Free Assembly
Temperature min（T_{smin}）	150℃
Temperature max(T_{smax})	200℃
Maximum time (t_s)from Tsmin to T_{smax}	120 seconds
Ramp-up(T_L to T_P)	3℃/sec
Liquids Temperature(T_L)	217℃
Maximum Time(t_L) Maintained T_L	150 seconds
Maximum Peak Package Body Temperature(T_p)	260℃
Time Within 5℃ of the Specified Temperature	10-30seconds
Maximum Ramp-Down Rate(T_p to T_L)	6℃/seconds
Maximum Time 25℃ to Peak Temperature	8minutes

修补 Repairing

回流焊后不应该修复，当必须修复时，必须使用双头烙铁，而且事先应确认此种方式会不会损坏 LED 本身的特性。

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed in advance whether the characteristics of LEDs will or will not be damaged by repairing. LED

存储 Storage

在未准备使用 LED 之前不要打开防潮袋

Don’t open the moisture proof bag before ready to use the LEDs

未密封袋之前 LED 建议的存储环境为温度小于 30℃、湿度＜65% RH，且最长的存储期为 1 年。

The LEDs should be kept at 30℃ or less and 65%RH or less before opening the package. The max. period before opening the package is 1 year.

打开密封袋后,环境温湿度保持在 30℃/60% RH 或更低，需在 3 天内使用。如果温湿度超过 30℃/60% RH，则必须 12 小时内使用。

After opening the package, the LEDs should be kept at 30℃/60%RH or less, and it should be used within 3 days. If the LEDs should be kept at 30-60%RH or more, and it should be used within 12hours.

如果湿度指示卡显示湿度为 30%，在使用之前需要烘烤除潮。烘烤条件如下:卷装 70±5℃为 12 小时,散装 105±5℃1 小时。

If the LEDs be kept over the conditions of 30%, baking is required before mounting.

Baking condition as below: 70±5℃ for 12 hours for roll goods, 105±5℃ for 1 hours for bulk goods

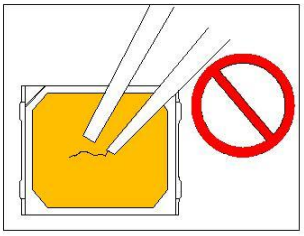
存储环境需隔绝酸、碱、腐蚀性气体,强烈震动和高磁场。

The environment have no acid、alkali、corrosive gas、intensively shake and high magnetic field

注意事项 Cautions

LED 封装胶为硅胶，表面较软，用力按压胶体表面会影响 LED 可靠性，因此应有预防措施避免在按压器件，当使用吸嘴时，胶体表面的压力应是恰当的。

The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the silicone resin should be prope



处理防备措施 Handling Precautions

工作环境及与 LED 适配的材料中硫元素及化合物成份不可超过 100PPM.这只是一个建议，不作任何品质担保。

LED operating environment and sulfur element composition cannot be over 100PPM in the LEDmating usage material. This is provided for informational purposes only and is not a warranty or endorsement. LED .

为了防止外界物质进入 LED 内部以造成 LED 的损伤，所处环境及所用套件等等，单一的溴元素含量要求小于 900PPM，单一氯元素含量要求小于 900PPM，溴元素与氯元素总含量必须小于 1500PPM. 这只是一个建议，不作任何品质担保。

In order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total content of Bromine element and Chlorine element in the external materials of the application products is required to be less than 1500PPM. This is provided for informational purposes only and is not a warranty or endorsementto be used.

反对使用任何对 LED 器件的性能或者可靠性有害的物质或材料，不管这些材料是已经证实了的还是仅仅怀疑有害。针对特定的用途和使用环境，建议对所有的物质和材料进行相容性的测试。

Advises against the use of any chemicals or materials that have been found or are suspected to have an adverse affect on device performance or reliability. To verify compatibility, JF recommends that all chemicals and materials be tested in the specific application and environment for which they are intended

通过使用适当的工具从材料侧面夹取，不可直接用手或尖锐金属压胶体表面，它可能会损坏内部电路。

Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or Handle the silicone lens surface, it may damage the internal circuitry.

设计电路时，通过 LED 的电流不能超过规定的最大值，同时，还需使用保护电阻，否则，微小的电压变化将会引起较大电流变化，可能导致产品损毁。

In designing a circuit, the current through each LED must be exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen.

容易因为自身的发热和环境的温度改变而改变，温度升高会降低 LED 发光效率，影响发光颜色，所以在设计时应充分考虑散热问题

Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color change and so on. Please consider the heat generation of the LEDs when making the system design. LED