

太湖县裕田光电显示有限公司

Taihu Rootin photoelectric Display Co.,Ltd



电话Tel: 400-860-1710

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地址Add: 太湖县刘畈乡刘畈村枫树街

Fengshu Street, Liu Fang Village, Liu Fang Township, Taihu County

样品承认书

Specification for Approval

| | |
|-------------------|-----------------------|
| 客户名称 Customer: | |
| 产品名称 Description: | 深紫外LED |
| 产品型号 Model: | HK275S39CDC-60(@60mA) |
| 样品编号 Sample No: | HK-SN20190716003 |
| 日期 Date: | 2019/7/16 |

| | | |
|---|---|----------|
| 附产品照片Attached Product Photos |  | |
| 由工程部提供 The specitication is afforded by Engineering dapartment 此规格经生产、品质确认 Approved by Production Quality department | | |
| 核准 approval: | 审核 To examine: | 制作 Make: |

客户确认签名 Approved Signatures

| | | | |
|------------------------------|-----------------------|-------------------------------|-----------------------------|
| 采购部 Purchasing Department | 研发部 R&D Department | 工程部 Engineering Department | 经理签字 Manager's signature |
| | | | |

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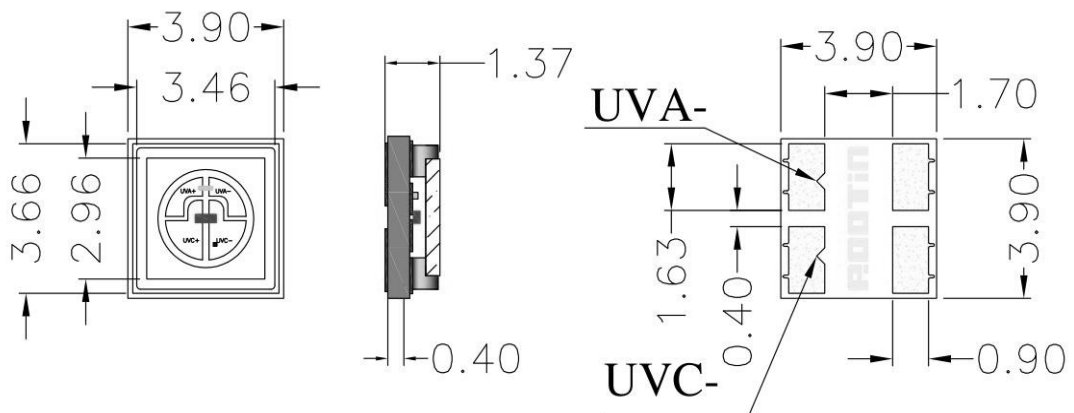
1、产品命名规则 (Product naming rules)

| 产品命名规则Product naming rules | | | | | | |
|----------------------------|------------------|------------------------|--------------|---|-----------------------|---------------------------------|
| HK | X | S | Y | Z | — | T |
| 品牌缩写 Brand Abbreviation | 波长 wavelength | 封装类型 Packaging type | 封装尺寸 Size | 支架类型 Type of stent | 分割线 Partition line | 功率 Power |
| Hea-Keys | 255nm | SMD贴片 TO插件 | 35 | C代表陶瓷一体式支架 C represents ceramic integral bracket | — | 单位毫瓦值 radiation intensity |
| | 265nm | | 37 | CL代表带透镜，发光角度60° CL stands for a lens with a luminous angle of 60 degrees. | | |
| | 275nm | | 39 | CG代表金属支架 CG stands for metal bracket | | |
| | 310nm | | 68 | CDC代表双芯片 CDC Represents double Chips | | |

说明Explain:

- 1、X表示波长X stands wavelength
- 2、Y表示尺寸Y stands for size
- 3、Z表示支架类型Z stands for stent type
- 4、T表示功率值T stands for power value

2、产品尺寸Size:



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注意: 为了获得更好的稳定输出功率, UV LED需要良好的散热环境或者散热系统, 建议灯珠在工作状态中, 支架温度不要超过50摄氏度。

Note: In order to have a stable output, UV LED need a very good heat release enviroment or a good heat release system. We suggest the temperature of holder could not be over 50°C when LED is working.

3、极限使用条件 Limitation use conditions:

| 项目Project | 单位Unit | 范围Range |
|-----------------------------------|--------|-------------|
| 工作温度 Working temperature | °C | Minus 30~60 |
| 存储温度 Storage temperature | °C | Minus 30~60 |
| 建议焊接温度 Max welding temperature | °C | 170~180 |

注意: 将LED置于以上极限范围值以外的条件时, 可能会影响器件的可靠性并造成永久损坏。不建议在以上范围之外的条件下进行操作。

Note: It will affect the quality of the equipment,even broken if out of the limitation of the LED use confition. It is not recommended to operate over the above limits

4、光电参数Optoelectronic parameter value:

| 参数Parameter | 单位Unit | 条件Condition | 最小Min | 均值Ave | 最大Max | UVA参数 |
|----------------------------------|--------|--|---------|--------|--------|---------|
| 正向电压(Vf) Forward voltage | V | UVC I _f =60mA UVA I _f =20mA | 5.00 | 6.50 | 8.00 | 3.00 |
| 输出功率(mW) Output power | mW | | 5.00 | 6.40 | 7.00 | 4.50 |
| 峰值波長 (λp) Peak wavelength | nm | | 275.00 | 276.00 | 280.00 | 395~405 |
| 半波寬(Δλ) Half wave width | nm | | 9.00 | 11.00 | 14.00 | 10.00 |
| 發光角度 2θ1/2 Luminescence angle | ° | | 120.00 | | | |
| ESD(H.B.M) | V | | 4000.00 | | | |

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注意:

- ①: 输出光功率的测量公差为百分之十。

Output power measurement tolerance is 10%

- ②: 电压的测量公差为0.1伏

Voltage measurement tolerance is 0.1V

- ③: 主波长的测量公差为1纳米

Wavelength measurement tolerance is 1nm

- ④: 均可脉冲工作（低频一千赫兹；占空比：百分之五）最大工作电流为120毫安

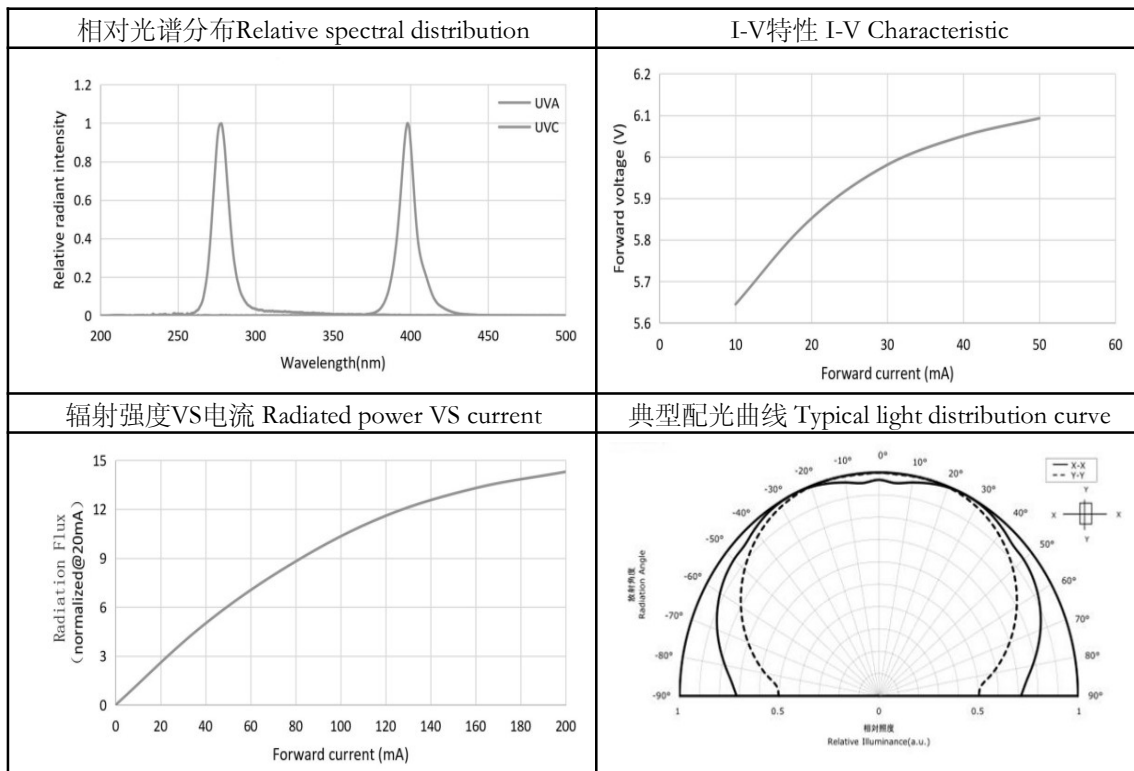
Average Pulse: (Frequency1KHZ, Bias:5%);The biggest working electric current:120mA;Average Pulse

5、输出功率等级Output power levels

| 电流Electric current | 40mA | 60mA | 80mA | 100mA |
|--------------------|-----------|-----------|-----------|-----------|
| 功率Power | 3.0~5.0mW | 5.0~7.0mW | 7.0~8.0mW | 8.0~9.0mW |
| L50寿命Service life | 10000h | 4000h | 2000h | 800h |

6、光电特性Photoelectric characteristics

(TA=25°C)



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7、使用说明Instructions:

(1) LED储存: 建议存储温度10摄氏度-55摄氏度, 湿度: 30%-65%, 包装袋密封保存。为了保证产品质量, 外包装袋打开前, 出厂后一年内使用, 外包装袋打开后, 建议28天内使用。

LED storage: suggest to sealed stock in under the temperature of 10°C-55°C, humidity of 30%-65%. In order to keep a good quality, pls use it within 1 year after the production date; and use it out within 28 days after open the package.

(2) 拿取方法: 接触LED检查时需戴手套或者手指套, 工作台面也要接地, 包装袋开口后要及时封口, 防止引脚氧化。打开包装后, 操作人员应该使用镊子夹持LED两侧, 避免手接触LED正面。

When taking or touch the LED, pls make sure to wear the gloves. Seal the package in time in order to avoid the pin oxidation. When opening the package, need to use the weezers clamped on both sides of LED in order not to touch the face of the LED.

(3) 安装: 这一过程主要是静电的防护:

Installation: This process is mainly to protect the static electricity:

① 生产前检查机台设备接地线是否正常;

Check if the grounding wire of the machine equipment is normal before production;

② 检查人员静电环是否正常, 检查静电的金属与人的皮肤接触紧密;

Check if the static ring is normal, check static metal and human skin contact closely;

③ 在安装时最好要求作业人员戴好防静电手套或者防静电手指套;

Check if the workers wear anti-static gloves;

④ 作业台面铺好静电胶布, 胶布之间应相互连接接地;

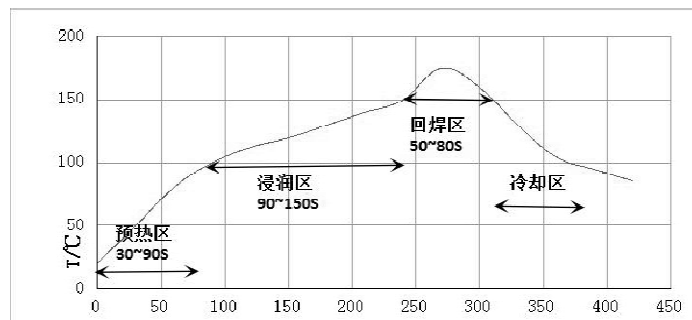
Check if the working table is paved with electrostatic rubber cloth, and the rubber cloth is connected to each other.

⑤ 开封后最好在二十四小时内用完, 否则可能会引起灯脚氧化生锈。

After opening the seal, it is better to use it out in 24 hours, otherwise it may cause the oxidation of the foot.

(4) 建议使用低温锡膏进行回流焊, 温度曲线如下图所示:

It is recommended to use low temperature solder paste for reflow, and the temperature curve is shown in the following diagram.



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① 预热区

升温速率为1.0-3.0摄氏度/秒，在预热区的升温速度过快，容易是锡膏的流移性及成分恶化，易产生爆锡和锡珠现象。

Preheating area

The temperature speed is 1.0-3.0°C /S. If the temperature rises too fast, it is easy to cause paste mobility and component deterioration, then cause the tin explosive and phenomenon.

② 浸润区

温度110-130摄氏度，时间90-100秒最为适宜，如果温度过低，则在回焊后会有焊锡未熔的情况发生（建议温升速度<2摄氏度/秒）。

Infiltrating area

The temperature is 110-130°C, 90-100s is the most suitable. If the temperature is too low, then the solder will not melt if it is rewelded. It is recommended that the temperature rise speed is <2°C / s.

③ 回焊区

尖峰温度应设在170-180摄氏度。熔融时间建议把138摄氏度以上时间调整为50-80秒。

Reflow Area

The peak temperature should be set at 170-180°C. The melting time suggests to adjust to 50-80 seconds when above 138°C

④ 冷却区

冷却速率<4摄氏度/秒

Cooling Area

Temperature cooling speed is better <4°C / s.

(5) LED随着电流的增加和温度的升高，他的使用寿命会呈某种曲线下降，导致LED衰减加快。

With the increase of current and temperature, the life of LED will decrease, which leads to the acceleration of the attenuation of LED.

(6) 建议在设计PCB时要有接地电路。特别注意LED的使用环境：温度在零下30摄氏度-55摄氏度之间，湿度在65%之间，否则将会有静电击穿和大电流击穿导致死灯。

It is suggested that a grounding circuit should be used in the design of PCB. Pay special attention to the usage environment of LED: the temperature is between -30°C to 55°C, and the humidity is between 65%. Otherwise, the LED will be broken by electrostatic and high current breakdown.

(7) 产品光电性能级别由**Hea-Keys™**公司自行决定，各不同级别的产品光电性能有所差异，请客户根据自己使用条件自行决定使用方法。

The photoelectric properties levels are decided by **Hea-Keys™**. There are differences between the different levels of products, please use it in a suitable way according to the using conditions of the clients.

(8) 我们一直在不断努力，以改善LED产品的性能，规格如有变更，恕不另行通知。

We have been making constant efforts to improve the performance of LED products. Pls contact us for the latest specifications.



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****主要的安全提示****

Major security tips

本产品为深紫外LED，在正确操作通电后会产生紫外线，这种紫外线对人体的皮肤和眼睛都有危害。应避免未加防护措施直接暴露在深紫外线中。

This product is a deep ultraviolet LED, which will produce ultraviolet light after the correct operation of electricity. Thus it is harmful to the skin and eyes of the human body. No protective measures should be avoided directly in deep ultraviolet light.

建议在操作时身穿防护衣，配套防护手套和防护眼镜。

It is recommended to wear protective clothing, gloves and glasses during operation.

| | |
|---|---|
|  |  警示 |
| | 紫外 LED 产品－强紫外光 对眼睛和皮肤有伤害－忌裸视 |
|  |  Notice |
| | Deep UV-light strong ultraviolet light It hurts the eyes and the skin |