安徽省紫芯半导体技术有限公司
Anhui UV-CHIPS semiconductor technology Co., Ltd

HK310S39CL-150

（2020mil高亮芯片）

说明书
Specifications

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1、功能和运用 Features & Applications

•峰值波长：305~315纳米

Lighting Color(Peak Wavelength): 305~315nm

• 外形尺寸：3.9 × 3.9 ×2.9 (长 × 宽 ×高) [单位t: 毫米]

Surface Mount Type LED Package: 3.9 × 3.9 ×2.9 (L × D × H) [Unit: mm]

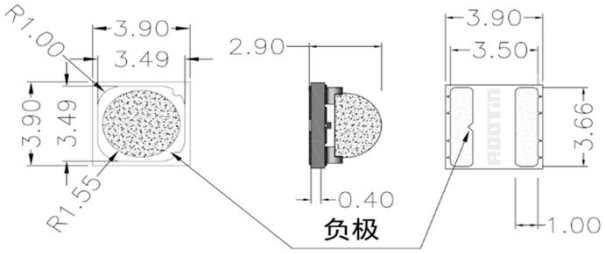
• 发光角度：60度

View angle (2Θ1/2=60deg)

•紫外光疗等

Ultraviolet phototherapy etc.

2、外形尺寸 Outline Dimensions



3、绝对最大额定值 Absolute Maximum Rating

[Ta = 25℃]

参数 Parameter	符号 Symbol	参数值 value			单位 Unit
		最小值 min	均值 type	最大值 max	
正向电流 Forward Current	I_F	-	100	-	毫安（mA）
电功率 Power Dissipation	P_D	0.5	-	0.8	瓦（W）
工作温度 Operating Temperature	T_{OPR}	-30		60	摄氏度（℃）
存储温度 Storage Temperature	T_{STG}	-40		95	摄氏度（℃）

4、光电参数 Electro Optical

[Ta = 25℃, I_F = 100mA]

参数 Parameter	符号 Symbol	单位 Unit	最小值 Min.	均值 Typ.	最大值 Max.
峰值波长 Peak Wavelength[1]	λp	nm	305	-	315
辐射通量 Radiant Flux[2]	Φe	mW	16	17	19
正向电压 Forward Voltage[3]	VF	V	5	-	8
半波宽 Spectrum Half Width	Δλ	nm		10	
发光角度 View Angle	2θ½	°		60	
热阻 Thermal Resistance	RJ-b	℃/W		50	

备注1 (Note1)

[1] 峰值波长公差±3.5纳米（ Peak Wavelength Tolerance ± 3.5nm）

[2] 辐射通量测量公差±10% （ Radiant Flux Measurement tolerance ±10%）

[3] 正向电压公差为±10% （Forward Voltage Tolerance ± 10%）

[4] RJ-b是从芯片焊盘到支架的热电阻 （RJ-b is thermal resistance from junction to case.）

[5] 所有参数均为裕田测定 （All characteristics are measured by ROOTIN）

5、料号 Bin Structure

[Ta =25℃, I_F =100mA]

命名 Designate	参数 Information	代码 Code	最小值 Min.	均值 Typ.	最大值 Max.
X	峰值波长 Peak Wavelength	255	250	-	260
		265	260	-	270
		275	270	-	280
		295	290	-	300
		310	***305***	***-***	***315***
Z	辐射通量 Radiant Flux (Φ e)	-100	11	-	16
		-150	***16***	***-***	***19***
		-200	19	-	22
				典型值 Main Ranks	

备注2 （Note2）

分BIN方法(Bin Code method)

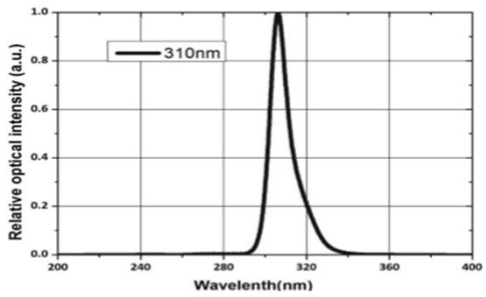
BIN码：HK-X-S39CL-Z

-峰值波长(Peak Wavelength)=X0

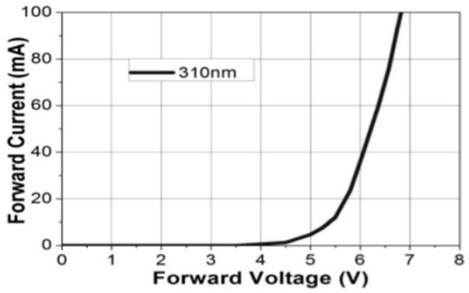
-辐射通量(Radiant Flux)=Z0

6、光电特性图 Characteristics Diagrams

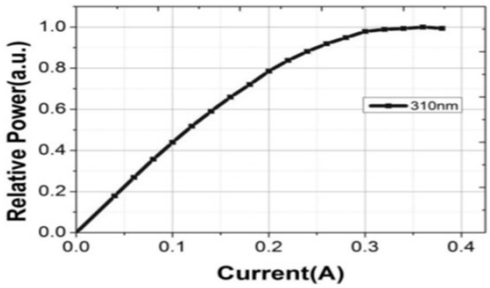
（1）相对光谱分布Relative spectral distribution



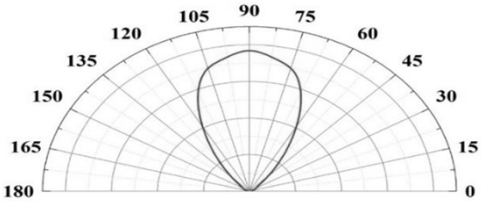
（2）I-V特性 I-V Characteristic



（3）辐射强度VS电流 Radiated power VS current



（4）典型配光曲线 Typical light distribution curve



7、可靠性试验项目及条件 Reliability Test Items and Conditions

（1）损伤判断标准 Criteria for Judging the Damage

参数 Parameter	符号 Symbol	条件 Condition	判定标准 Criteria for Judgement	
			Min.	Max.
正向电压 Forward Voltage	VF	I_F=100mA		H.S.R..(1) *1.1
辐射功率 Radiometric Power	IV	I_F=100mA	H.S.L(1) *0.5	

备注3 Note3:

[1] H.S.R：规格上限 Upper Specification Level

[2] H.S.L：规格下限 Lower Specification Level

(2) 可靠性试验 Reliability Tests

试验项目 Test Item	试验条件 Test Conditions	试验时间 Test Time	样品数量 Sample Q’ty
室温及工作寿命 Room Temperature Operating Life1	Ta=25℃， If=60mA	1800hrs	8 Pcs
室温及工作寿命 Room Temperature Operating Life2	Ta=25℃， If=100mA	1800hrs	8 Pcs
高温及工作寿命 HighTemperature Operating Life	Ta=60℃， If=60mA	1800hrs	8 Pcs
低温及工作寿命 Low Temperature Operating Life	Ta=40℃， If=100mA	1800hrs	8 Pcs
高温及存储寿命 HighTemperature Operating Life	Ta=95℃	1800hrs	8 Pcs
低温及存储寿命 Low Temperature Operating Life	Ta=-40℃	1800hrs	8 Pcs
热冲击 Thermal Shock	Ta max=120℃, Ta min=-40℃ 30min dwell/transfer time: 10sec. 1 cycle = 1 hour	200 cycle	8 Pcs

8、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℃-55℃， humidity of 30%-65%.In order to keep a good quality, pls use it within 1 year after the prodcution date; and use it out within 28days 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 orde to avoid the pin oxidation. When openning 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 workerswear 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；

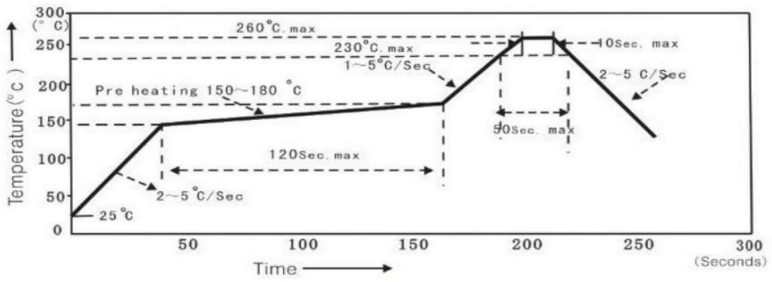
Check if the working table is paved with electrostatic rubber cloth, and the rubber cloth is connected to each other.

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绣。

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

(4) 建议使用低温锡膏进行迴流焊，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.



① 预热区

升温速率为2.0-5.0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 2.0-5.0℃/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150-180摄氏度，时间120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 150-180℃,120s 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℃ / s.

③ 回焊区

尖峰温度应设在230-260摄氏度。熔融时间建议把138摄氏度以上时间调整为50秒。

Reflow Area

The peak temperature should be set at 230-260℃. The melting time suggests to adjust to 50 seconds when above 230℃

④ 冷却区

冷卻速率<2~5攝氏度/秒

Cooling Area

Temperature cooling spead is better <2~5℃ / s.

(5) LED随著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℃ to 55℃, 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**ROOTIN™**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 **ROOTIN™**. There are differences between the different levels of products, please use it in a stuitable 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.

9、主要的安全提示 Major security tips

☆☆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。