

EH-4232A940-E20

Features/特点

- 颜色/ Color: 红外光 / Infrared light
- 灵敏度高 Radiant angle: 20°
- 无铅回流焊应用 Pb-free reflow soldering application
- 符合欧盟 REACH 规定 Compliance with EU REACH



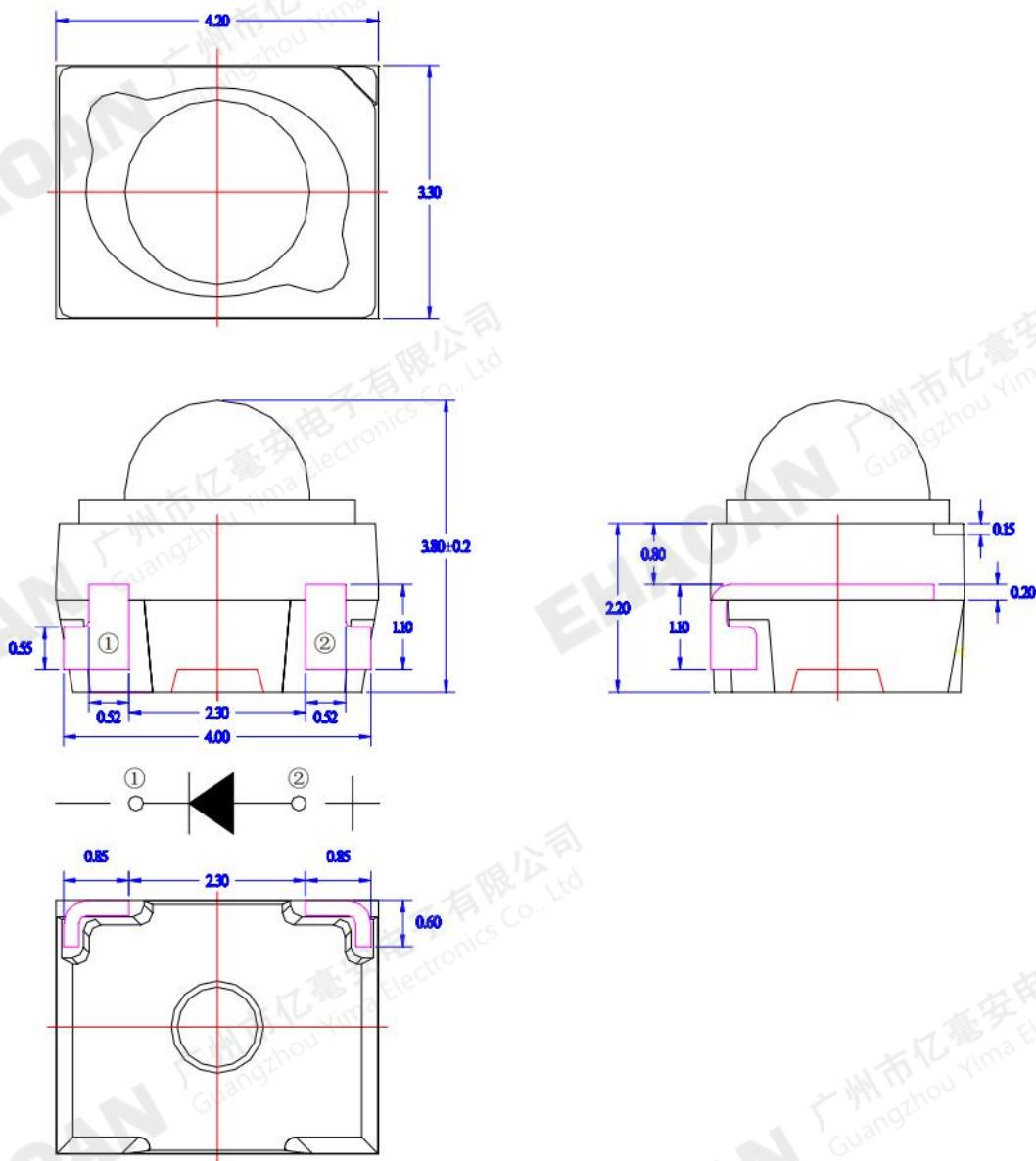
Applications/应用

- 微型开关 Miniature switch
- 计数分拣 Counters and sorter
- 位置传感 Position sensor
- 红外应用系统 Infrared applied system

Device Selection Guide/选择指南

Device No.	Size	Lens Color	Manufacturer
EH-4232A940-E20	4.2*3.3*3.3mm	Water Clear	EHAOAN

Package Dimensions/尺寸参数



Note: Tolerances unless mentioned $\pm 0.1\text{mm}$. Unit = mm

注：除非另有说明，否则公差为 $\pm 0.1\text{ mm}$ 单位=mm

Absolute Maximum Ratings /最大限度参数值(Ta=25°C)

参数名称 Parameter	符号 Symbol	最大额定值 Rating	单位 Unit
正向电流 Forward Current	I _F	100	mA
峰值电流 Peak Forward Current	I _{FP}	1	A
反向电压 Reverse Voltage	V _R	5	V
消耗功率 Power Dissipation	P _d	150	mW
工作温度 Operating Temperature	T _{opr}	-30~+85	°C
存储温度 Storage Temperature	T _{stg}	-40~+100	°C
回流焊温度 Soldering Temperature	T _{sol}	260° C for 5sec	°C

Opto-Electronical Specification/主要光电参数(Ta=25°C)

参数名称 Parameter	符号 Symbol	最小值 Min	标准值 Type	最大值 Max	单位 Unit	测试条件 Condition
正向电压 Forward Voltage	V _F	--	1.35	1.6	V	I _F =50mA
视角 Half-value angle	2θ _{1/2}	--	20	--	deg	I _F =50mA
辐射强度 Radiant Intensity	I _e	77	110	--	mW	I _F =50mA
峰值波长 Peak Wavelength	λ _p	--	940	--	nm	I _F =50mA
半波宽 Spectral Bandwidth	Δλ	--	50	--	nm	I _F =50mA
反向电流 Reverse Current	I _R	--	--	10	uA	V _R =5V

Typical photo-electricity characteristic curve chart/典型光电特性曲线图表

Fig.1 Spectral Distribution

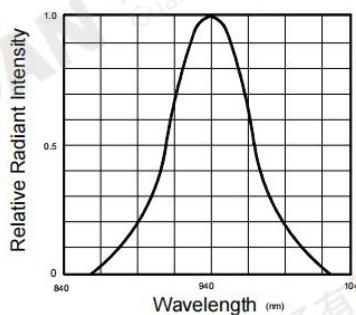


Fig.2 Forward Current Vs
Ambient Temperature

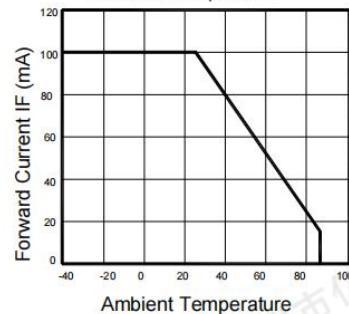


Fig.3 Forward Current Vs
Forward Voltage

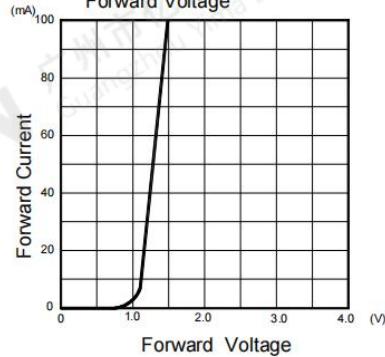


Fig.4 Relative Radiant Intensity
Vs Ambient Temperature

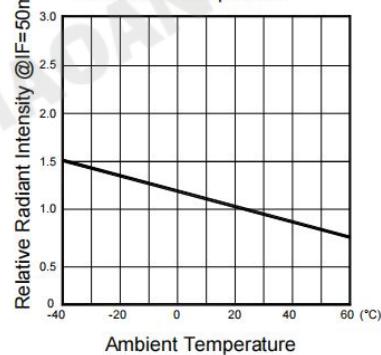


Fig.5 Relative Radiant Intensity
Vs Forward Current

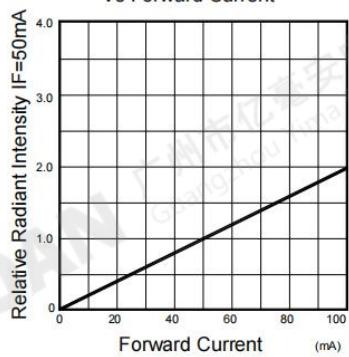
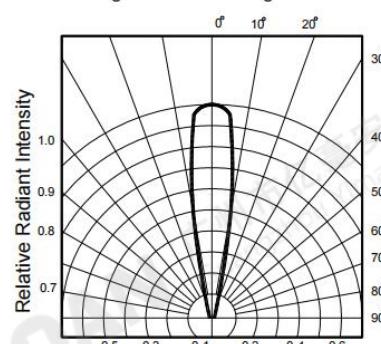


Fig.6 Radiation Diagram



Reliability Test/可靠性试验

测试项目 Test item	源科参照标准 YK. Standard	测试条件 Test Conditions	备注 Note	数量 Quantity	不良数量 Number of Damaged
高低温循环 Temperature Cycle	JIS C 7021 (1977)A-4	-25°C 30min ↑↓5min 80°C 30min	100 cycle	22	0
热冲击 Thermal Shock	MIL-SLD-107D	-40°C 15min ↑↓5min 105°C 15min	50cycle	22	0
高温度热循环 High Humidity Heat Cycle	JIS C 7021 (1977)A-5	30°C (=) 65°C 90%RH 24hrs/1cycle	10 cycle	22	0
高温存储 High Temperature Storage	JIS C 7021 (1977)B-10	Ta=80°C	1000hrs	22	0
高温高湿存储 Humidity Heat Storage	JIS C 7021 (1977)B-11	Ta=60°C RH=90%	1000hrs	22	0
低温存储 Low Temperature Storage	JIS C 7021 (1977)B-12	Ta= - 30°C	1000hrs	22	0
常温寿命测试 Life Test	JIS C 7035 (1985)	Ta=25°C IF=1000mA	1000hrs	22	0
高温高湿寿命测试 High Humidity Heat Life Test	*	60°C RH=90% IF=1000mA	500hrs	22	0
低温寿命测试 Low Temperature Life Test	*	Ta=-25°C IF=1000mA	1000hrs	22	0

Failure criterion/失效判定标准

项目 Item	符号 Symbol	测试条件 Test condition	判定标准 Criterion	
			最小 Min	最大 Max
正向电压 Forward voltage	VF	IF=50mA	--	U.S.L*) × 1.2
Reverse Current 漏电流	IR	VR = 10V	--	U.S.L*) × 2.0
辐射强度 Radiant Intensity	mW/Sr	IF=20mA	L.S.L*) × 0.7	--

备注 Note:

1、USL: 标准值上限值, LSL: 标准值下限值

USL: Upper Standard Level, LSL: Lower Standard Level

2、以上技术数据仅为产品的典型值, 只作为参考, 不作为任何应用条件及应用方式的保证。

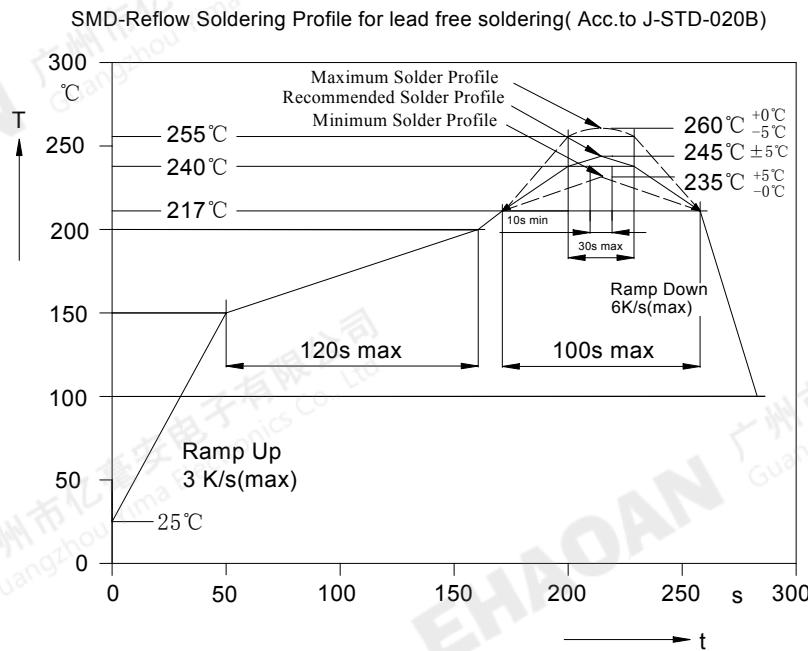
The technical information shown in the data sheets are limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license.

Guideline for Soldering/焊接指导

回流焊接 Reflow Soldering

推荐以下无铅回流焊接温度图进行。

Use the conditions shown in the under Figure of Pb-Free Reflow Soldering.



Remark: If not lead free soldering, the recommended solder profile is 230°C and max solder profile is 245°C.

使用烙铁人手焊接 Hand Soldering

推荐使用低功率于 20W 的烙铁，焊接时烙铁的温度必须保持在 360°C 以下，且每个电极只能进行一次焊接，每次焊接的持续时间不得超过 3 秒。

A soldering iron of less than 20W is recommended to be used in Hand Soldering. Please keep the temperature of the soldering iron under 360°C while soldering. Each terminal of the LED is to go for less than 3 second and for onetime only.
人手焊接过程中的不慎操作易引起 LED 产品的损坏，应当小心谨慎。

Be careful because the damage of the product is often started at the time of the hand soldering.

清洗 Cleaning

在焊接后推荐使用酒精进行清洗，在温度不高于 30°C 的条件下持续 3 分钟，不高于 50°C 的条件下持续 30 秒，使用其他类似溶剂清洗前，请先确认使用的溶剂不会对 LED 的封装和环氧树脂造成损伤。

It is recommended that alcohol be used as a solvent for cleaning after soldering. Cleaning is to go under 30°C for 3 minutes or 50°C for 30 seconds. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not.

超声波清洗也是有效的方法，一般最大功率不应超过 300W，否则可能对 LED 造成损伤，请根据具体的情况预先测试清洗条件是否会对 LED 造成损伤。

Ultrasonic cleaning is also an effective way for cleaning. But the influence of Ultrasonic cleaning on LED depends on factors such as ultrasonic power. Generally, the ultrasonic power should not be higher than 300W. Before cleaning, a pre-test should be done to confirm whether any damage to LEDs will occur.

Notes/注意事项

存储 Storage

种类 Conditions		温度 Temperature	湿度 Humidity	时间 Time
储存 Storage	拆包前 Before Opening Aluminum Bag	≤30°C	≤75%	1 年 Year
	拆包后 After Opening Aluminum Bag	≤30°C	≤60%	48 小时 Hours
	烘烤 Baking	75°C	/	12 小时 Hours

打开包装袋前 (Before Opening Aluminum Bag)

在温度不超过 30°C 及湿度不超过 75%RH 条件下，LED 可以保存一年，建议采用带干燥剂的防潮铝箔袋的包装方式，存放在恒温恒湿箱中。达不到要求的环境下，尽量保证在 6 个月内使用完毕。

The LEDs can be preserved for 1 year in condition of temperature no more than 30°C and humidity no more than 60%RH. Recommended for moisture-proof foil bag with desiccant packaging methods and stored in the constant temperature and humidity box. Can not reach the requirements under the environment of the guarantee as far as possible in six months after use.

打开包装后 (Before Opening Aluminum Bag)

本产品使用密封防潮抗静电袋包装，并附有干燥剂，密封防静电袋内的湿度卡应在打开袋子后立即查看袋内的湿度指示卡来确定，湿度显示小于或等于 10% 时，使用前须进行烘烤。

Moisture proof and anti-electrostatic package with moisture absorbent material is used. Seal anti-electrostatic bag humidity card should immediately check bag humidity indicator card in the open the bag after, Humidity is less than or equal to 10%, Must be baked before use.

开封后，产品必须 48 小时内使用完(建议工作环境温度不高于 30°C, 湿度不高于 60%)，如未使用完，余料须存放在温度不高于 30°C, 湿度不高于 10% 的环境中。

After opening the package, the product should be soldered within 48 hours. If not, please store at 30°C or less and humidity less than 10%RH. It is recommended that the product be operated at the workshop condition of 30°C or less and humidity less than 60%RH.

对于尚未焊接的 LED，如果吸湿剂或包装失效，或者产品没有符合以上有效存储条件，烘烤可以起到一定的性能恢复效果。烘烤条件：75±5°C，持续时间 12H。

If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition : 75±5°C for 12 hours.

静电防护 Electrostatic protection

以下操作可降低静电破坏的可能性

The following procedures may decrease the possibility of ESD damage.

将产品和外界之间的摩擦减到最低以避免静电产生。

Minimize friction between the product and surroundings to avoid static buildup.

所有的产品设备和测试仪器必须接地。

All production machinery and test instruments must be electrically grounded.

操作人员必须配戴静电环。

Operators must wear anti-static bracelets.

进入带电设备工作区域时需穿防静电服。

Wear anti-static suit when entering work areas with conductive machinery.

其他事项 Others

通过使用适当的工具从材料侧面夹取材料，不可直接用手或者尖锐金属压胶体表面。

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，产品工作的反向电压不能超过规定的最大值，同时还需要使用保护电阻，否则微小的电压变化会引起较大电流变化，可能导致产品损毁。

In designing a circuit,The reverse voltage of the product shall not exceed the specified maximum value。At the same time, the protection resistor shall be used. Otherwise, small voltage change will cause large current change and may cause product damage.

产品容易因为自身的发热和环境温度改变而改变，所以在设计时应充分考虑散热问题。

The product is easy to change due to its own heating and the change of ambient temperature, so the heat dissipation shall be fully considered in the design.