# 深圳市瑞欣峰光电科技有限公司

Shenzhen ruixin feng photoelectric technology co. LTD

## Φ5 平头塑封封装脉冲 15W 激光二极管

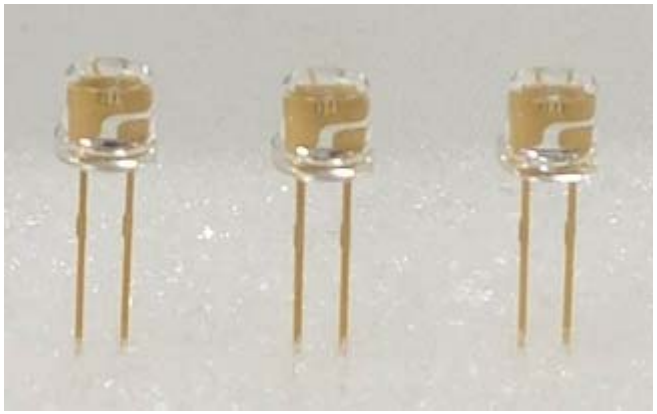
## 一、产品信息

| 产品型号 | 发光区数量 | 峰值功率 | 典型波长 |
|---|---|---|---|
| **RXF-905-15W-SC** | **3** | **15W** | **905nm** |

## 二、产品说明 **Product explanation**

Features:

- Multi-epitaxial luminous layer stack structure.
- The luminous aperture is 38 mu m by 10 mu m.
- Large optical cavity LOC high power material structure.
- Narrow beam divergence.
- High laser power density.
- Low cost plastic encapsulation.



特点:

- 多外延发光层堆叠结构
- 发光孔径 38μm×10μm
- 大光腔 LOC 高功率材料结构
- 窄光速发散度
- 激光功率密度高
- 低成本塑封封装

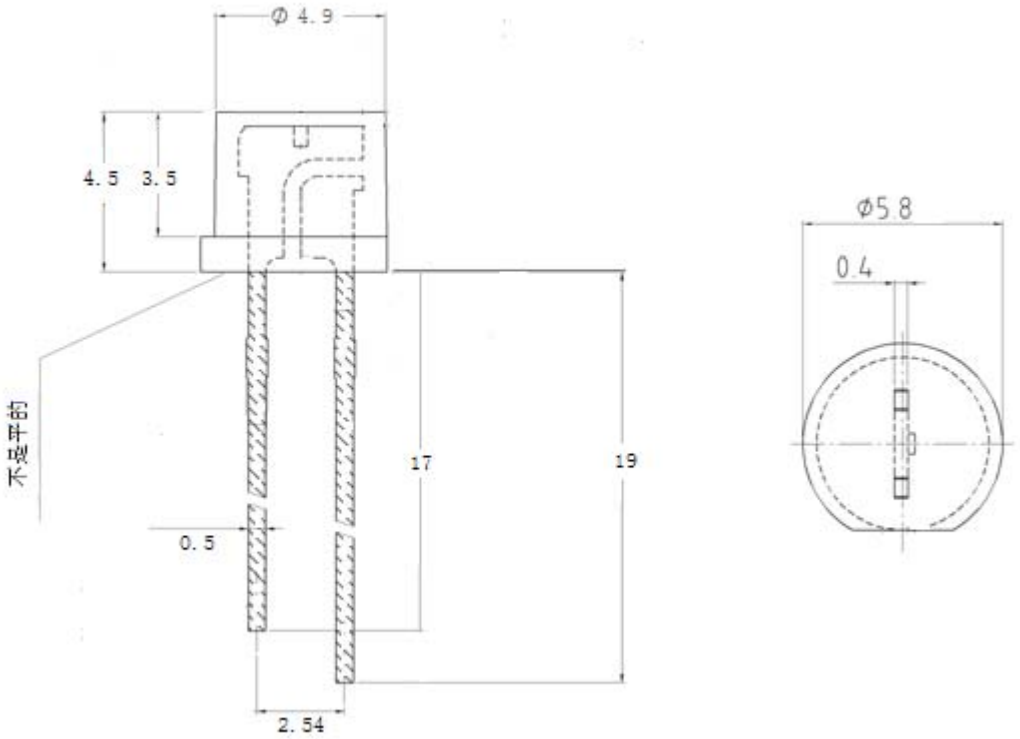
application

- Laser rangefinder.
- traffic surveillance and vigilance.
- infrared illumination.
- Laser radar.

应用

- 激光测距仪
- 交通监视与警戒
- 红外照明
- 激光雷达

## 三、产品外形尺寸 **Product outline dimension drawing**




说明 Explanation:

1. 封装胶体是环氧树脂； Encapsulated colloids are epoxy resin
2. 引线框架是镀金黄铜； The lead frame is gold-plated brass
3. 引脚定义长正短负； Pin definition is short and negative.
4. 所有产品尺寸用毫米； All product sizes are in mm
5. 产品允许误差为±0.25mm； The allowable error of the product is plus or minus 0.25mm
6. 胶体边缘溢胶最高不超过 0.2 mm； colloid edge overflows the rubber to be highest does not surpass 0.2mm
7. 胶体边缘缺胶最高不超过 0.4mm； colloid edge lacks the rubber to be highest does not surpass 0.4mm;
8. 从包装中取出时注意支架脚，以免划伤； Pay attention to the legs of the brackets to avoid scratches when taken out of the packaging;

## 四、产品参数与特性图 Product parameters and feature maps

### 4.1 最大额定数据 (测试温度为 25℃) ： Maximum rated data (test temperature is 25 ℃)

| 项目 Symbol | 说 明 Explanation | 数 值 Value | 单 位 Unit |
|---|---|---|---|
| $P_{peak}$ | 峰值输出功率 Peak output power | 18 | W |
| $V_{op}$ | 工作电压 Operating voltage | 8.2 | V |
| $I_{op}$ | 工作电流 Operating current | 6 | A |
| $t_P$ | 脉冲宽度 Pulse width (FWHM) | 200 | ns |
| dC | 工作周期占空比 Duty cycle | 0.1 | % |
| $T_{OPR}$ | 工作温度范围 Operating Temperature Range | -15℃ to 65℃ | |
| $T_{op}$ | 储存温度范围 Storage Temperature Range | -40℃ to 100℃ | |
| $E_{sd}$ | 防静电电压 ESD Voltage | ≥500V | |
| $T_s$ | 焊接温度 Welding temperature | 260° | |

### 4.2 电性参数(测试温度为 25℃) ： Electrical BDmeter(test temperature for 25℃)

| 项目 Symbol | 说 明 Explanation | 最小值 Min | 典型值 Type | 最大值 Max | 单位 Unit |
|---|---|---|---|---|---|
| $\lambda_{peak}$ | 发射波长 Emission wavelength | 895 | 905 | 915 | nm |
| FWHM | 光谱宽度 Spectral width | - | 5 | - | nm |
| $I_{th}$ | 阈值电流 Threshold current | - | 0. 3 | - | A |
| $\Theta_{\parallel}$ | 平行光速发散 Beam divergence (FWHM) parallel to pn-junction | - | 12 | - | ° |
| $\Theta_{\perp}$ | 垂直光束发散 Beam divergence (FWHM) perpendicular to pn-junction | - | 25 | - | ° |
| $P_{peak}$ | 峰值输出功率 Peak output power | | 18 | | W |
| $\Delta\lambda / \Delta T$ | 波长的温度系数 Wavelength of temperature coefficient | - | 0.28 | - | nm / K |
| Wh | 发光面积 Light emitting area | - | 38x10 | - | μm |

All characteristics refer to pulsed measurements (200 ns pulse width at 5 kHz repetition rate).

所有特征都是指脉冲测量(200 ns 脉冲宽度，5 kHz 重复频率)。

**4.3 产品特性图 Product characteristic chart：**

**Fig.1** 峰值功率 **VS** 正向电压 **VS** 正向电流
$T_A$ = 25 °C

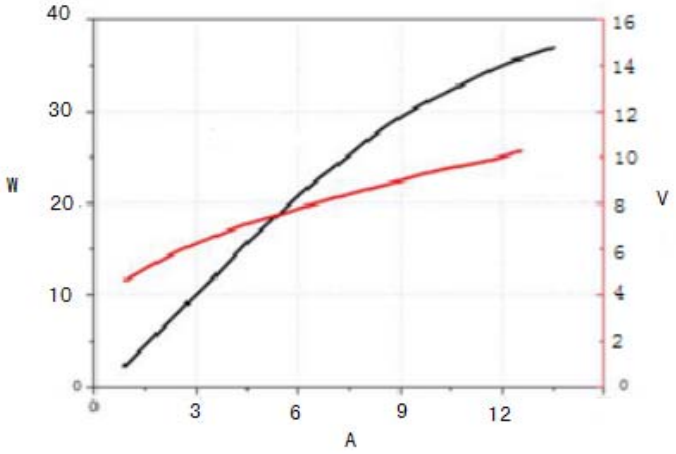



**Fig. 2** 发射峰值波长 $T_A$ = 25 °C,

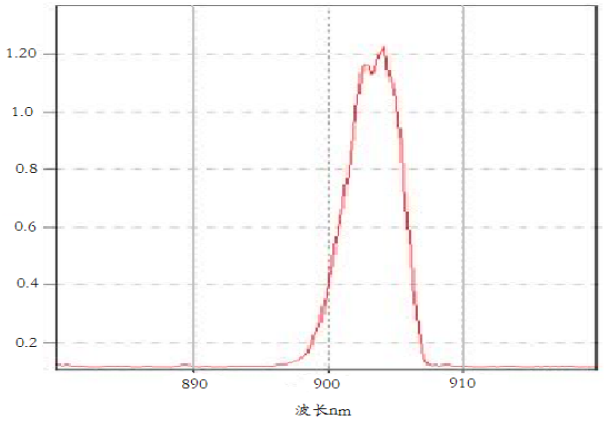



**Fig.3** 垂直发散角度⊥Θ$T_A$ = 25 °C,

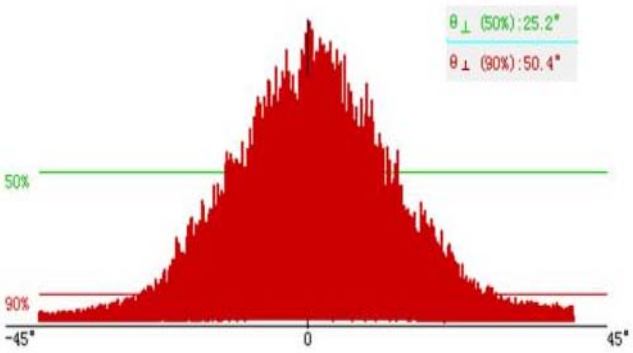



**Fig. 4** 平行发散角度 $\Theta_{II}$ $T_A$ = 25 °C,

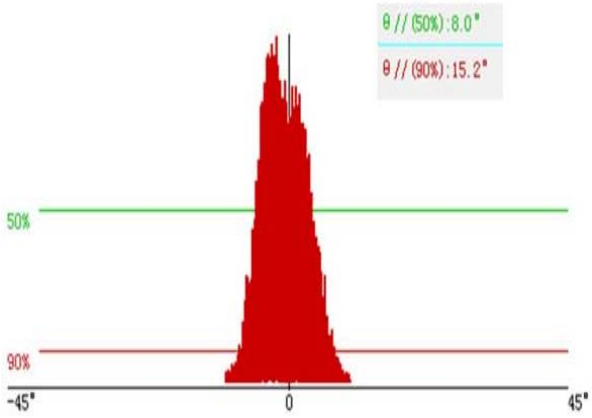



**Fig. 5** 波长温度曲线

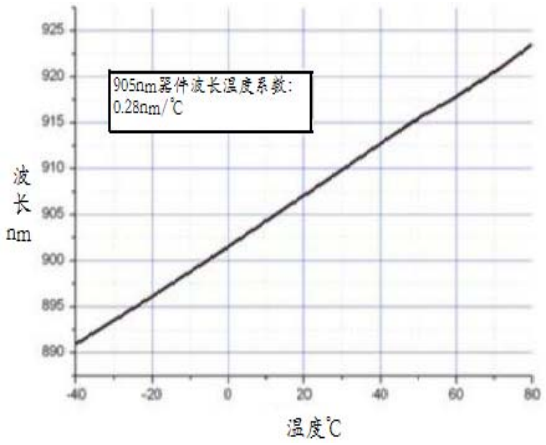
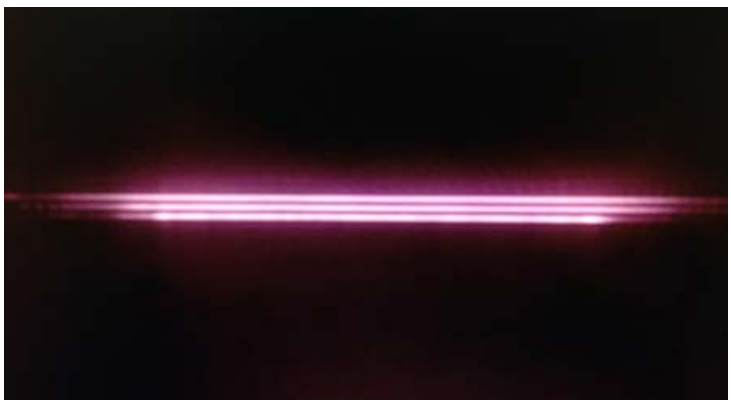



**Fig. 6** 近场光斑图



## 五、使用注意事项 **precautions**

Precaution

- The laser light emitted from this laser diode is invisible and may be harmful to the human eye. Avoid looking directly into the diode laser or into the collimated beam along its optical axis when the device is in operation.
- In its maximum rating diode laser operation could damage its performance or cause potential safety hazard such as equipment failure
- Electrostatic discharge is the main reason for the laser fault of the diode. Take effective precautions against ESD. When dealing with laser diodes, use the wrist strap, grounding work surface and strict antistatic technology.

预防措施

- 这种激光二极管发出的激光是看不见的，可能对人的眼睛有害。当设备处于运行状态时，避免直接观察半导体激光器或在其光轴上的平行光束。
- 在其最大额定值外操作二极管激光器可能会破坏其性能或导致设备故障等安全隐患。
- 静电放电是发生意外二极管激光故障的主要原因。采取有效的预防措施防止 ESD。在处理激光二极管时，使用手腕带，接地的工作表面和严格的抗静电技术。

产品采购与服务

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