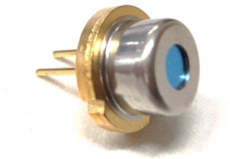
808B-150-3-1-TO9 技术规格书

文件修订履历表

版本	修订日期	修订内容	修订	审核	审批	生效日期
V1.0	2022/9/9	初版发行	谢曳华			

Laser Diode 半导体激光器 TO9 封装
808nm 3W TO9

■ Applications | 应用



·**Laser Illumination**	激光照明
·**Medical & Cosmetics**	医疗美容
·**Laser Sensor**	激光传感

■ Features | 产品特点

·**Peak wavelength: 808nm**	峰值波长: **808nm**
·**Output power: 3W**	输出功率: **3W**

■ Ordering Information | 订购信息

Model 型号	**Output power typ.** 输出功率 典型值	**Description** 描述
808B-150-3-1-TO9	**3W**	**808B 3W TO9**

■ Characteristics (T_{rt}=25 °C) 参数值

以 TO9 封装形式，测试温度为 25℃					
Parameter 参数	**Symbol 符号**	**Min. 最小值**	**Typ. 典型值**	**Max. 最大值**	**Unit 单位**
Wavelength 波长					
Peak Wavelength 峰值波长	λ_p	-	808	-	nm
Spectral Bandwidth 光谱宽度	BW	-	3	-	nm
Wavelenth Temperature Coefficient 温漂系数	$\Delta\lambda/\Delta T$	-	0.25	-	nm/℃
Electro Optical Data 光电参数					
Operation Power 工作功率	P_{op}	-	3	-	W
Operation Current 工作电流	I_{op}	2.3	2.6	2.9	A
Threhold Current 阈值电流	I_{th}	-	0.5	-	A
Operation Voltage 工作电压	V_{op}	-	2.3	-	V
Slope efficiency 斜率效率	$\eta_d=P_o/(I_{op} - I_{th})$	-	1.4	-	W/A
Total conversion efficiency 转换效率	$\eta=P_o/(I_{op} \times V_{op})$	-	50	-	%
Beam Divergence Angle Width (Horizontal) ① 水平发散角宽度	$\theta_{//}$	-	8	12	degrees
Beam Divergence Angle Width (Vertical) ② 垂直发散角宽度	$\theta_{\perp}$	-	30	40	degrees
Geometrical 尺寸					
Emitter width 发光窗口宽度	w	-	150	-	µm
Cavity Length 腔长	L	-	1000	-	µm
Chip Width 宽度	W	-	500	-	µm
Chip Height 厚度	H	-	150	-	µm

Notes 备注：

①、The lifetime is not guaranteed if the laser is operated over the maximum rating 芯片在超过最大值使用时不保证使用寿命；

②、Full width at 95% power content 涵盖 95%能量宽度；

③、FWHM (Full width half maximum)

■ Typical Characteristic 典型参数图

Figure 1：Power-Voltage-Current Characteristics
功率-电压-电流曲线

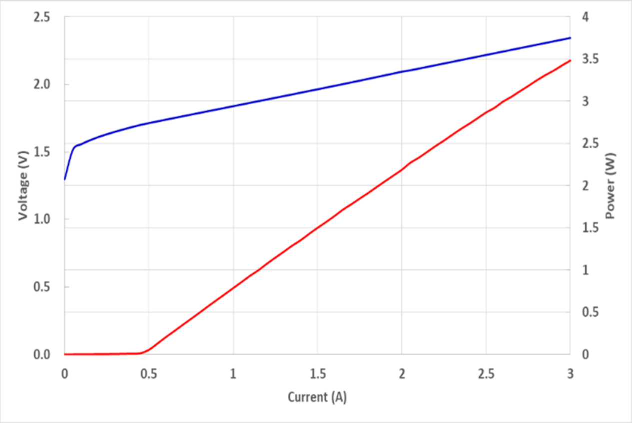


Figure 2：Spectral Characteristics
光谱曲线

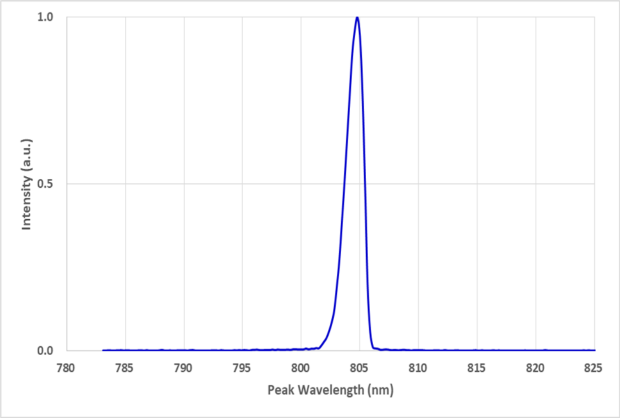
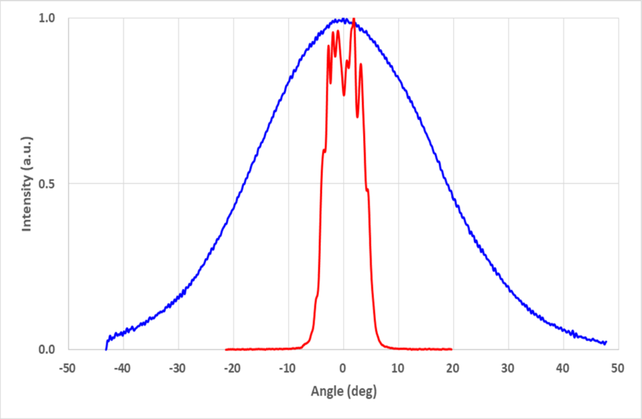
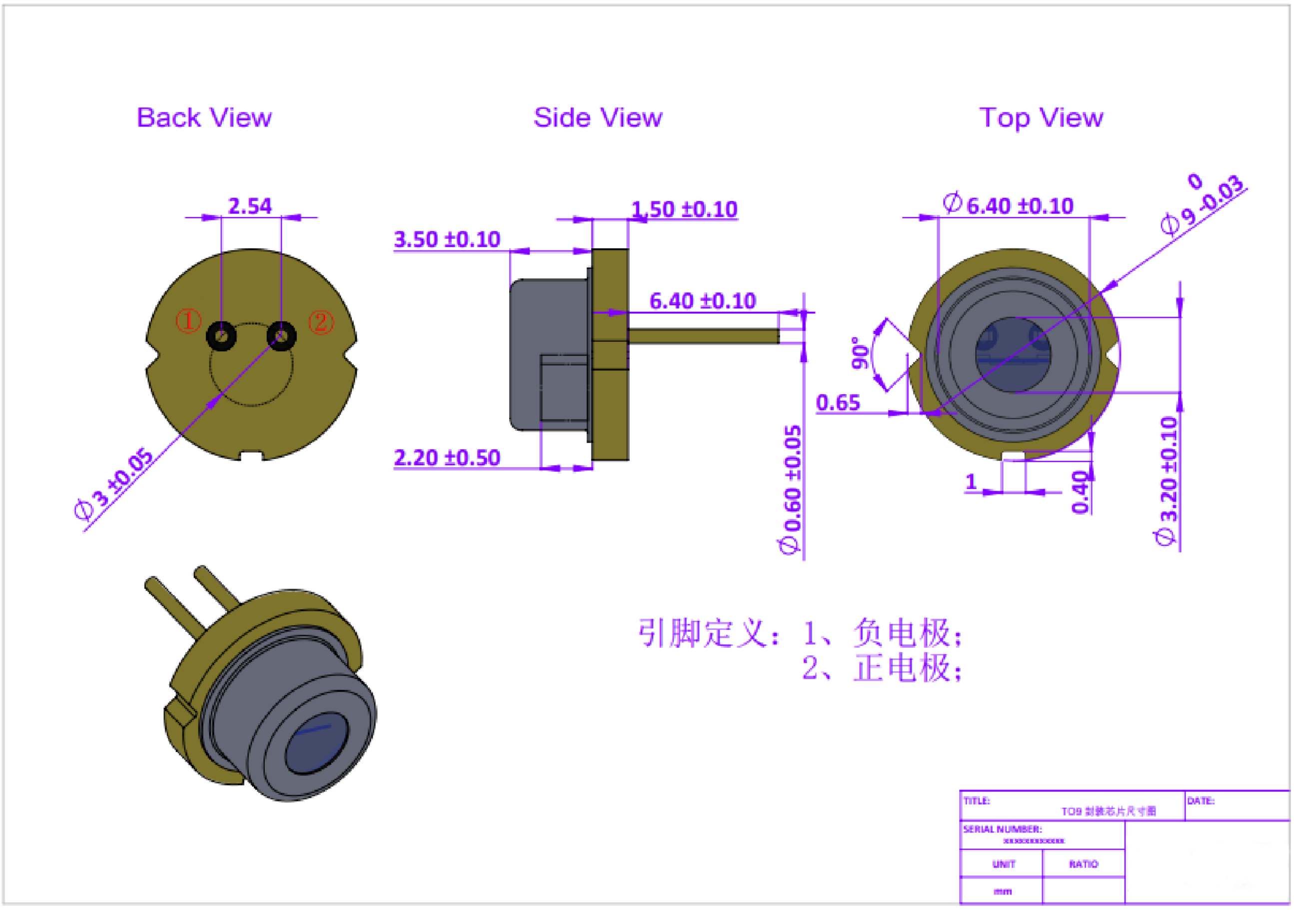


Figure 3：Far Field Pattern Characteristics
远场发散角曲线



■ Dimensional Drawing 外观尺寸图



引脚定义：1、负电极；
2、正电极；

■ Notes 注意事项

Product changes 产品变更

Specifications are subject to change without notice. No liability is asssumed as a result of their use or application without confirming with our company.

此份规格书会在未通知的情况进行更改。未与我司确认，参考此份规格造成的使用问题，我司不承担责任。

Safety considerations 安全考虑

Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye. Products which incorpate these devices have to follow the safety precautions given in IEC 60825-1 "Safety of laser products".

根据工作方式的不同，激光器件会发射非可见、高亮度的红外激光，这种激光会对人眼造成损害。使用这些激光器件的产品，应该遵守遵循 **IEC 60825-1** 中给出的安全预防措施。

Electrostatic protection 静电防护

Electrostatic discharge is the primary cause of unexpected laser diode failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling diode lasers.

静电释放是很多无法预期半导体激光器失效的主要原因。需要使用良好的防护措施来避免静电。当使用半导体激光器时，建议佩戴静电手环，工作平台做好接地措施，或其他可靠的抗静电手段。

Operating conditions 工作条件

warranty applies only to devices operated within the maximum rating, as specified. Exceeding these conditions is likely to cause permanent “burn off” damage to the laser facet and consequently a significant reduction in optical power.

Laser diode may be damaged when switch on and off of the power supply. A stabilizer should be taken into consideration for the power supply to prevent from the failure.

只对在规格书限定使用条件的器件提供质量保证。超规格使用容易造成芯片腔面的光学灾变和明显的功率衰减。

半导体激光器容易在驱动电源开关的时候受到损坏。建议对驱动电源增加稳定措施以避免激光器的失效。

AEC-Q102 qualifcation AEC-Q102 认证

The complete qualifcation test plan in AEC-Q102 is not applicable for bare IR laser diode bare die. Only selected tests from AEC-Q102 which are deemed relevant for bare die-related failure mechanism are performed.

对于红外半导体激光器裸芯片做 **AEC-Q102** 的全部认证测试，并不适用。目前我司仅对 **AEC-Q102** 涉及到裸芯片的相关失效机制做了选择性测试。