# 895 nm, 0.2 mW, VCSEL Diode

**L895VH1**

## Description

This 895 nm, 0.2 mW AlGaAs VCSEL diode is a compact light source suited for a variety of applications. It comes in a TO-46 package with an H pin configuration. This VCSEL diode outputs a circular Gaussian beam, which is linearly polarized. Its spectral profile is single mode and it is suitable for single frequency applications.

This laser diode emits infrared light, which can be hazardous to the human eye. Products which incorporate these devices must follow the safety precautions found in IEC 60825-1 "Safety of laser products."

## Specifications

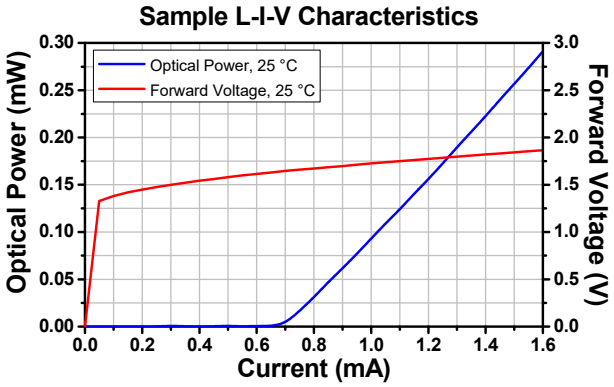
| Absolute Maximum Ratings[a] | | |
|---|---|---|
| | **Symbol** | **Maximum** |
| **Operating Current** | $I_F$ | 3 mA |
| **Optical Power** | $P_o$ | 0.3 mW |
| **LD Reverse Voltage** | $V_R$ | 5 V |
| **Operating Case Temperature** | $T_{op}$ | -20 to 110 °C |
| **Storage Temperature** | $T_{stor}$ | -40 to 125 °C |

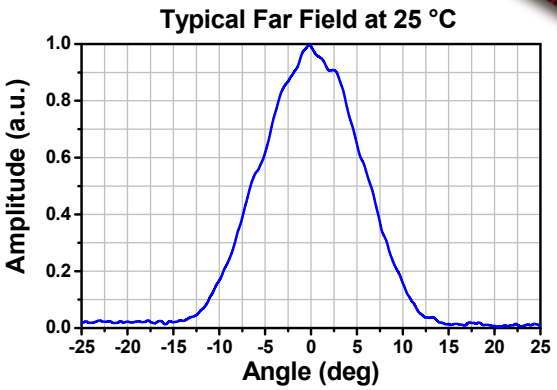
a. Absolute maximum rating specifications should never be exceeded. Operating at or beyond these conditions can permanently damage the laser.

| L895VH1 Specifications[b] | | | | |
|---|---|---|---|---|
| **Specification** | **Symbol** | **Min** | **Typical** | **Max** |
| **Center Wavelength @ $P_{op}$** | $\lambda_o$ | 890 nm | 895 nm | 900 nm |
| **Output Power, CW** | $P_{op}$ | - | 0.2 mW | - |
| **Threshold Current** | $I_{TH}$ | - | 0.5 mA | - |
| **Operating Current CW @ $P_{op}$** | $I_{op}$ | - | 1.4 mA | 2.0 mA[c] |
| **Operating Voltage @ $P_{op}$** | $V_{op}$ | - | 1.6 V | 2.0 V |
| **Slope Efficiency** | η | - | 0.3 mW/mA | - |
| **Polarization Extinction Ratio** | Per | 13 dB | - | - |
| **Side Mode Suppression Ratio** | SMSR | 20 dB | - | - |
| **Temperature Tuning Coefficient** | dλ/dT | - | 0.06 nm/°C | |
| **Beam Divergence (Full Width 1/$e^2$) @ $P_{op}$** | $\Theta_1$ | 16° | 20° | 26° |
| **Beam Divergence (FWHM) @ $P_{op}$** | $\Theta_2$ | 9° | 13° | 16° |

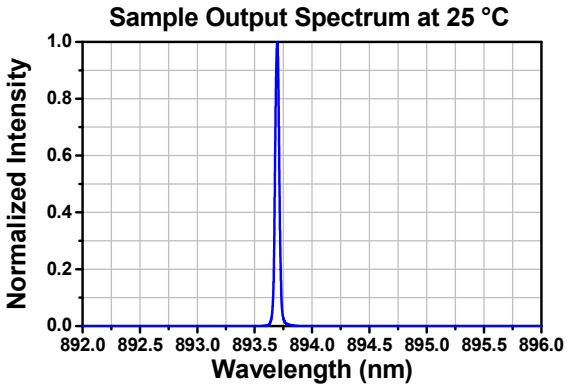
b. $T_{CASE}$ = 25 °C, CW Current Operation
c. To Remain Single Mode & Polarization Stable

## Performance Plots




Because this diode outputs a circular Gaussian beam, the far field shown is taken from an arbitrary azimuth direction.




The apparent linewidth is limited by the measurement resolution, which is 7.5 GHz (0.25 $cm^{-1}$)

## Drawing