795 nm, 0.25 mW, VCSEL Diode

L795VH1

Description

This 795 nm, 0.25 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	2 mA
Optical Power	P_o	0.4 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

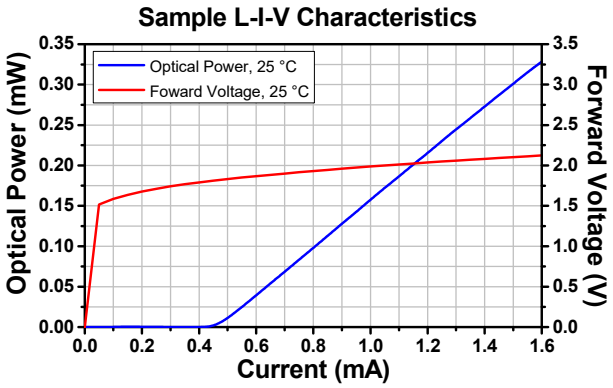
a. Absolute maximum rating specifications should never be exceeded. Operating at or beyond these conditions can permanently damage the laser.

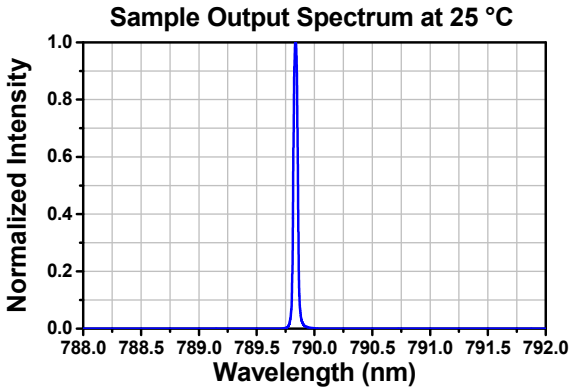
L795VH1 Specifications[b]				
Specification	**Symbol**	**Min**	**Typical**	**Max**
Center Wavelength @ P_{op}	λ_o	788 nm	795 nm	800 nm
Output Power, CW	P_{op}	-	0.25 mW	-
Threshold Current	I_{TH}	-	0.5 mA	-
Operating Current CW @ P_{op}	I_{op}	-	1.2 mA	1.5 mA[c]
Operating Voltage @ P_{op}	V_{op}	-	1.8 V	2.3 V
Slope Efficiency	η	-	0.3 mW/mA	-
Polarization Extinction Ratio	Per	16 dB	20 dB	-
Side Mode Suppression Ratio	SMSR	20 dB	-	-
Temperature Tuning Coefficient	dλ/dT	-	0.055 nm/°C	
Beam Divergence (Full Width 1/e^2) @ P_{op}	Θ_1	18°	20°	23°
Beam Divergence (FWHM) @ P_{op}	Θ_2	10°	12°	14°

b. T_{CASE} = 25 °C, CW Current Operation

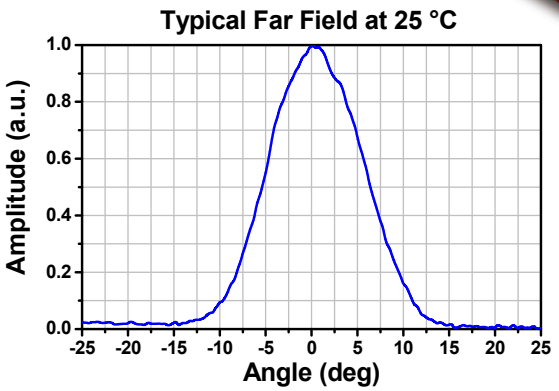
c. To Remain Single Mode & Polarization Stable

Performance Plots





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



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

Drawing