638 nm Laser Diode, 40 mW

L638P040

Description

Thorlabs' 638 nm, 40 mW laser diode is suited for a variety of applications. Packaged in a ∅5.6 mm TO-18 can with a Style A pin configuration, this single spatial mode laser diode is fully compatible with our line of laser diode and TEC controllers, as well as our selection of laser diode mounts and collimation solutions.

Specifications

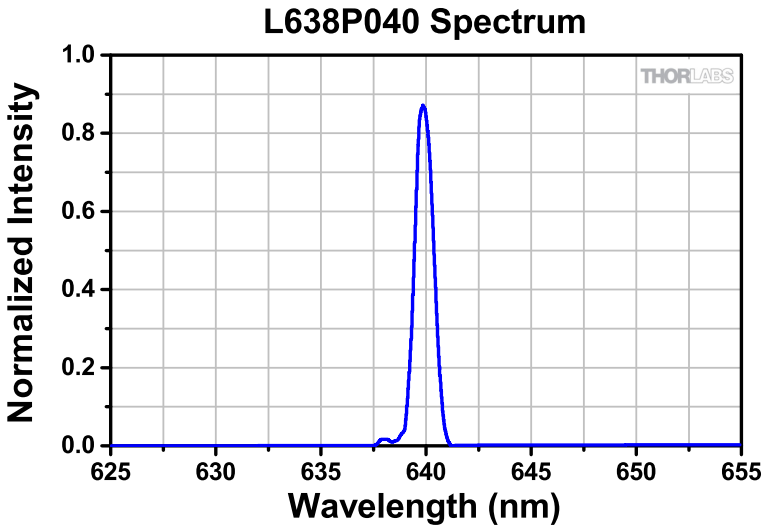
Absolute Maximum Ratings[a]		
Specification	**Symbol**	**Maximum**
LD Reverse Voltage	$V_{R(LD)}$	2 V
PD Reverse Voltage	$V_{R(PD)}$	30 V
Operating Case Temperature	T_{op}	-10 to +50 °C
Storage Temperature	T_{STG}	-40 to +85 °C

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

L638P040 Specifications					
		Symbol	**Min**	**Typical**	**Max**
Center Wavelength @ P_{op}		λ_o	628 nm	638 nm	648 nm
Output Power (CW)		P_{op}	-	40 mW	45 mW
Threshold Current		I_{TH}	-	45 mA	65 mA
Operating Current (CW) @ P_{op}		I_{op}	-	92 mA	115 mA
Operating Voltage @ P_{op}		V_{op}	-	2.4 V	2.6 V
Slope Efficiency		η	0.4 mW/mA	0.5 mW/mA	0.7 mW/mA
Monitor PD Current @ P_{op}		I_{mon}	-	0.3 mA	0.6 mA
Beam Divergence (FWHM) @ P_{op}	**Parallel**	$\theta_{\parallel}$	8°	10°	14°
	Perpendicular	$\theta_{\perp}$	16°	21°	25°
Beam Angle Deviation @ P_{op}	**Parallel**	$\Delta\theta_{\parallel}$	-3°	-	3°
	Perpendicular	$\Delta\theta_{\perp}$	-3°	-	3°
Emission Point Accuracy		ΔX, ΔY, ΔZ	-80 µm	-	+80 µm

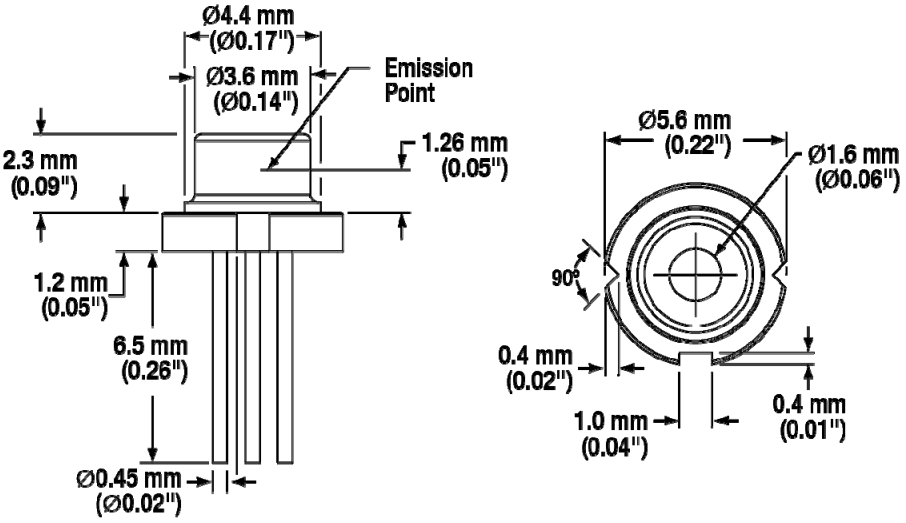
T_{CASE} = 25°C, CW

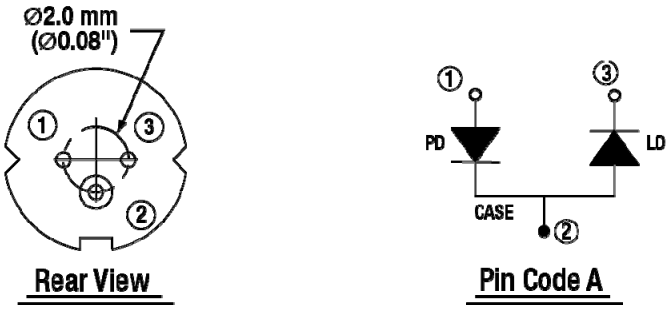
Performance Plot



The data presented were measured for one particular laser diode. Slight variations in performance will occur from device to device.

Drawings





Pin	Description
1	Anode
2	Case
3	Cathode