980nm 50mW 70°C Laser Diode
LD980A50C17

Data Sheet

Features

- 980nm Infrared Multimode laser diode
- Optical output power: 50mW CW
- Operating temperature: +70°C
- Built-in photodiode for monitoring laser diode
- Package: TO-18 (dia. 5.6mm)

Applications

- Medical laser treatment
- Laser indicator
- 3D sensing
- Night vision
- Anti-counterfeiting

Absolute Maximum Ratings

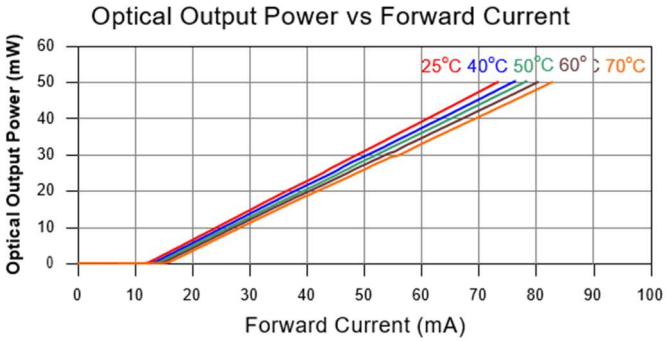
Parameter	Symbol	Rating	Unit
Optical output power	P_O	100	mW
Reverse voltage (LD)	V_{RL}	2	V
Reverse voltage (PD)	V_{RD}	30	V
Operating temperature	T_{opr}	-10 to +70	°C
Storage temperature	T_{stg}	-40 to +85	°C

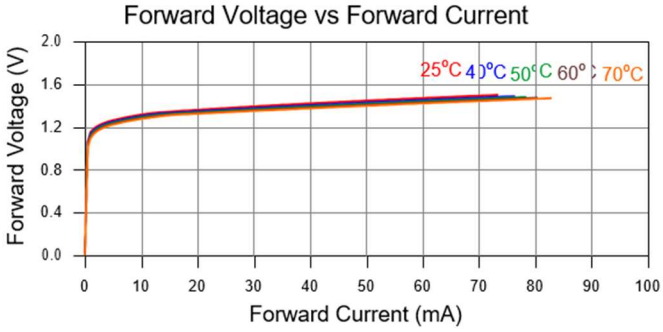
Electrical and Optical Characteristics (T_C = 25 °C)

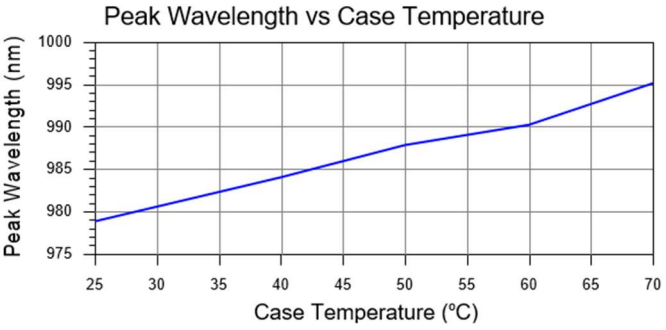
Parameter	Symbol	Min	Typ.	Max	Unit	Conditions
Lasing wavelength	λ	965	980	990	nm	P_O = 50mW
Threshold current	I_{th}	-	12	20	mA	P_O = 1-5mW
Operating current	I_{op}	-	75	90	mA	P_O = 50mW
Operating voltage	V_{op}	-	1.55	2.0	V	P_O = 50mW
Slope efficiency	η	0.64	0.8	-	mW/mA	P_O =12.5-37.5mW
Monitor current	I_m	0.08	0.3	0.5	mA	P_O = 50mW
Parallel divergence angle	$\Theta_{//}$	-	10	-	deg	P_O = 50mW
Perpendicular divergence angle	$\Theta_{\perp}$	-	35	-	deg	P_O = 50mW

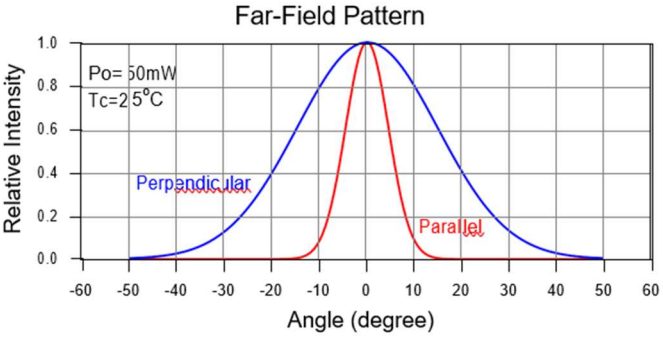
Note: $\Theta_{//}$ and $\Theta_{\perp}$ are defined as the angle within which the intensity is 50% of the peak value.

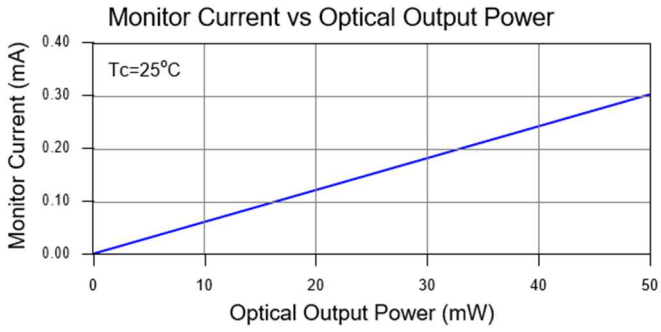
Typical Characteristic Curves

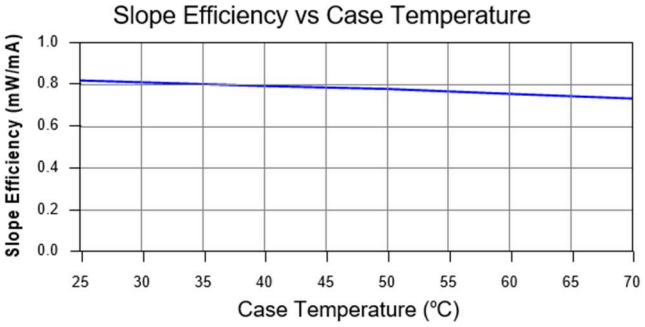


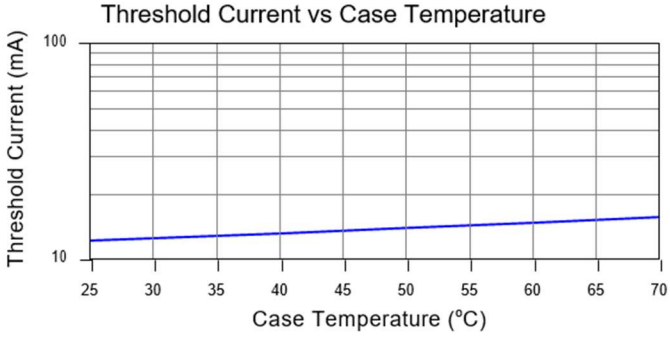




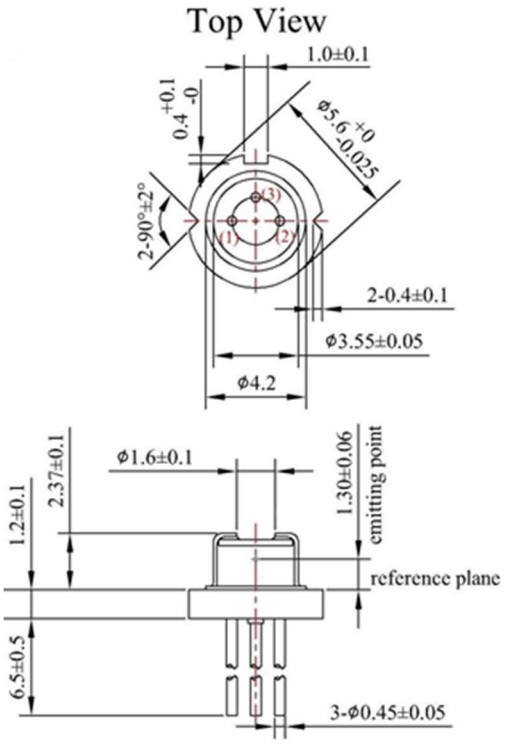


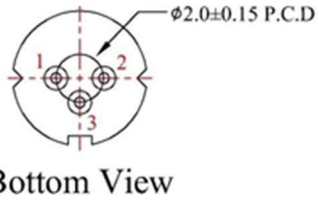




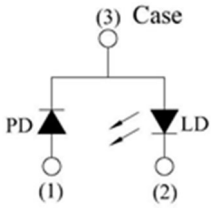


Mechanical Outline (unit: mm)





Pin Configuration



Additional Notes

- Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- Observing visible or invisible laser beams with human eye directly, or indirectly, can cause permanent damage. Use a camera to observe the laser.
- No laser device should be used in any application or situation where life or property is at risk in the event of device failure.
- Specifications are subject to change without notice. Ensure that you have the latest specifications by contacting us prior to purchase or use of the product.