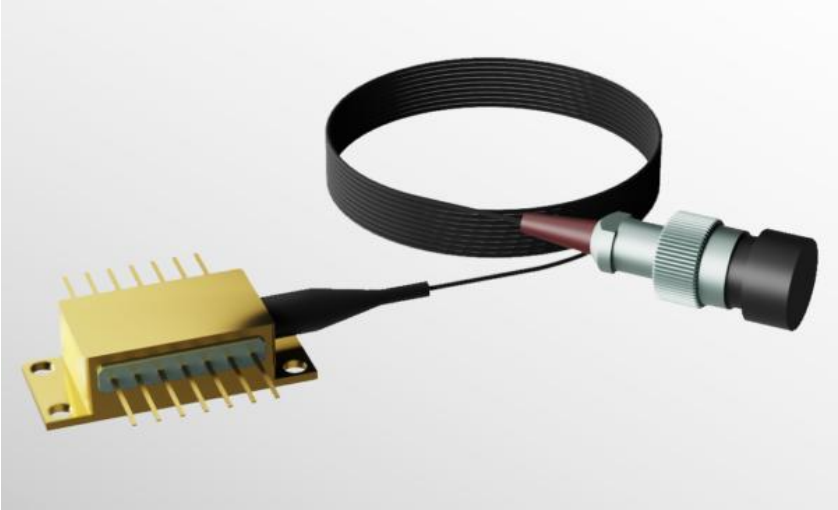
739 nm DBR Laser Diode



Product Description

The 739 nm DBR series high-performance edge-emitting laser diodes are based on advanced monolithic single-frequency GaAs laser technology.This laser series delivers a single spatial mode beam and features end-face passivation processing to ensure high reliability.Devices in the 739 nm DBR series are widely used for frequency doubling, ytterbium atomic spectroscopy, and Raman applications.

Product features

Single longitudinal mode output; ultra-narrow linewidth; high side-mode suppression ratio

Part Number

MP-DBR-739-40-14BF-PA

Application area

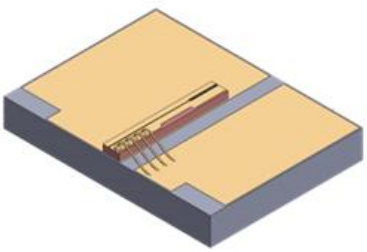
Atomic / Molecular Physics | High-Resolution Spectroscopy | Biomedical Imaging | Quantum Technology

Core parameters

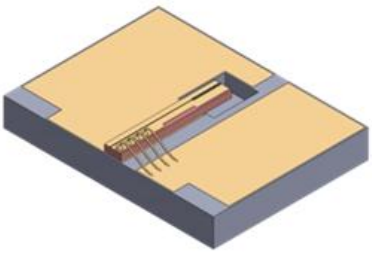
Central Wavelength
739 ± 0.6nm

General Parameters

Specifications



Chip on Submount (CoS)



CoS + Mode-Hop Free (MHF)

739nm DBR Chip-on-Submount (CoS) Characteristics

Chip Configuration

Parameter	Value
Nominal Wavelength	739 ± 0.6 nm
Power Range	40–80 mW
Max Operating Current (CW & Pulsed)	200 mA
Optical Power at Max Current	80 mW
Nominal Slope Efficiency	0.8 W/A
Nominal Threshold Current	80 mA

Notes

All characteristics are measured at case temperature T C=25 ° C unless otherwise noted. Operation beyond these parameters will void the warranty.

Hermetically packaged devices may contain Chip- on- Submount (CoS) with wavelength deviation of ±1.2 nm from the nominal value.

Available Free-Space Packaging Add-Ons

TO-8

C-Mount

Transmitter Optical Subassembly (TOSA)

Laser Diode Parameters

Parameter	Unit	Min.	Typ.	Max.
Storage Temperature	℃	0	–	70
Case Operating Temperature	℃	5	–	70
Laser Chip Operating Temperature[1]	℃	5	–	45
Laser Series Resistance	Ω	–	2	–
Laser Forward Voltage @ LIV Current	V	–	2	–
Laser Linewidth (Typ. @ LIV Current)	kHz	–	500	–
Beam Divergence @ FWHM (θ× θ⊥)	°		6×28	8×32
Side Mode Suppression Ratio (SMSR)	dB	–	-40	–
Polarization Extinction Ratio	dB	-17	-20	–

Laser Polarization	–	–	TE	–
Mode Structure	–	–	Fundamental Mode	–
Temperature Tuning Rate	nm/°C	–	0.06	–
Current Tuning Rate	nm/mA	–	0.002	–
Laser Reverse Voltage	V	–	–	0

Operation below dew point is not recommended unless hermetically packaged.

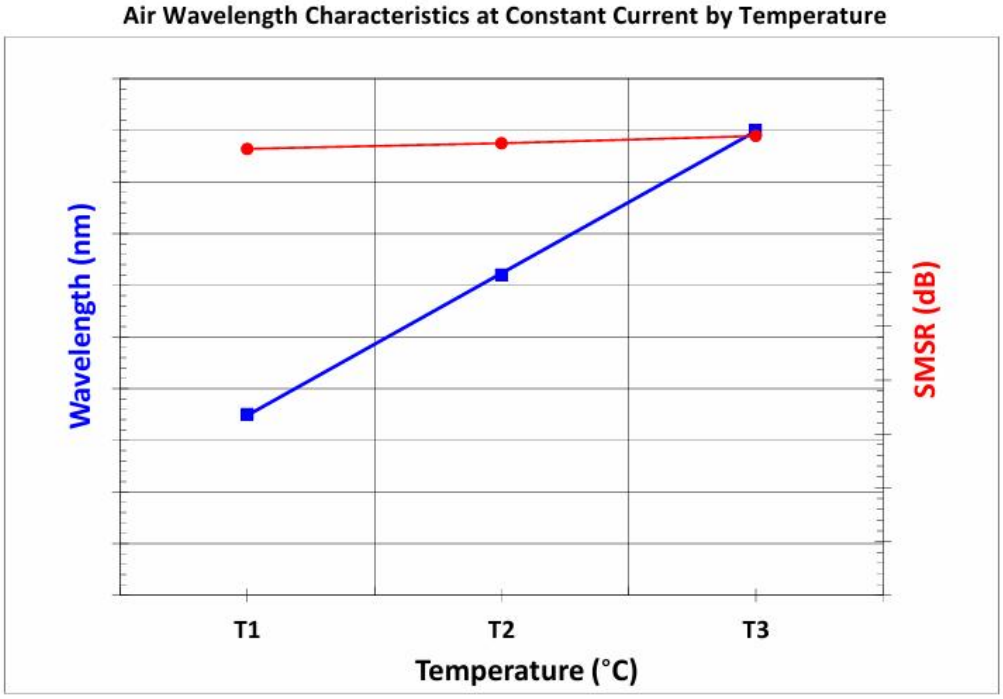
Free-Space Package Additional Components

Parameter	Unit	Min.	Typ.	Max.
Photodiode Forward Current	mA	–	–	10
Photodiode Reverse Voltage	V	–	–	50
TEC Current (TOSA)	A	–1.1	–	1.1
TEC Voltage (TOSA)	V	–3.0	–	3.0
TEC Current (TO-8)	A	–1.8	–	1.8
TEC Voltage (TO-8)	V	–2.2	–	2.2
Thermistor Resistance	kΩ	–	10	–

These devices are sensitive to electrostatic discharge (ESD).

When handling the modules, use a grounded work area and an anti-static wrist strap.

For storage, always keep them in an anti-static container with all leads short-circuited.



LIV Characteristics by Current