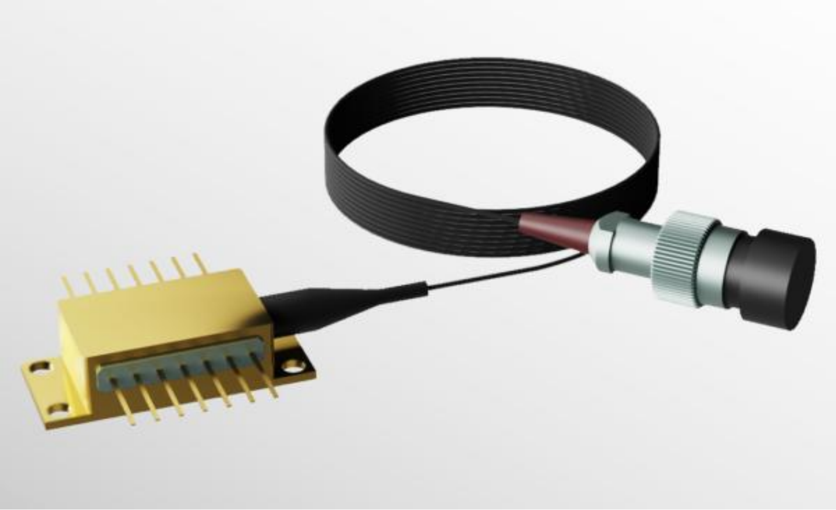
1064nm DBR Laser Diode



Product Description

The 1064 nm DBR series high-performance edge-emitting laser diodes adopt advanced monolithic single-frequency GaAs laser technology. This series emits single spatial mode beam and adopts facet passivation process to guarantee reliability. The 1064 nm DBR devices act as low-noise pump sources and are widely used in frequency doubling applications.

Product features

High-reliability design; monolithically integrated structure

Part Number

MP-DBR-1064-180-14BF-PA

Application area

Raman spectroscopy | Interferometry | Seed sources for fiber amplifiers | LiDAR

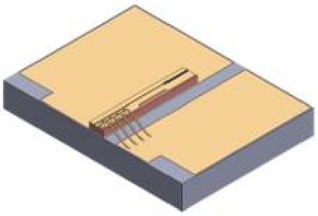
Core parameters

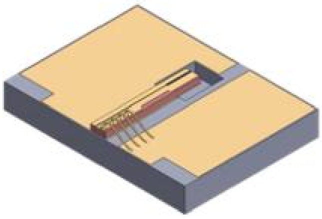
Central Wavelength
1064nm

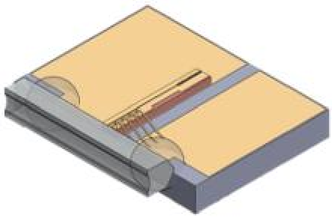
General Parameters

Model Parameters

Detailed parameters


Chip on Submount (CoS)


CoS + Mode-Hop Free (MHF)


CoS + Virtual Point Source (VPS) Lens

1064nm (COS) package characteristics

	Chip architecture	
Parameter [1]	Low power	High power
Nominal wavelength (nm)[2]	1064 ± 0.6	
Power range (mW)	40–180	100–350
Maximum Operating Current (CW & Pulsed) (mA)	250	550
Optical power at maximum operating current (mW)	180	350
Nominal Slope Efficiency (W/A)	0.75	0.8
Nominal threshold current (mA)	30	50

1. Characteristics at TC = 25 °C unless otherwise specified. Operating outside of these parameters voids warranty.

2. Hermetically sealed packages may contain CoS that are ± 1.2 nm from nominal.

Available free-space package add-ons

9MM

TO-8

C-Mount

Transmitter Optical Subassembly (TOSA)

Laser specifications

Parameters	unit	Minimum	Typical values	Maximum
Storage temperature	°C	0	-	70
Shell operating temperature	°C	5	-	70
Laser chip operating temperature [1]	°C	5	-	45
Laser series resistance	Ω	-	2	-
Forward voltage of the laser at LIV current	V	-	2	-
Nominal laser line width at LIV current	kHz	-	500	-
Beam divergence angle at half-height and full width (θ|| × θ⊥)	°	-	6 x 28	8 x 32
Edge-mode rejection ratio (SMSR)	dB	-	-40	-
Polarization extinction ratio	dB	-17	-20	-
Polarized state of the laser	TE			
Pattern structure	Fundamental mode			
Temperature tuning rate	nm/°C	-	0.06	-
Current tuning rate	nm/mA	-	0.002	-
Laser reverse voltage	V	-	-	0

If not sealed, it is not recommended to use below the dew point

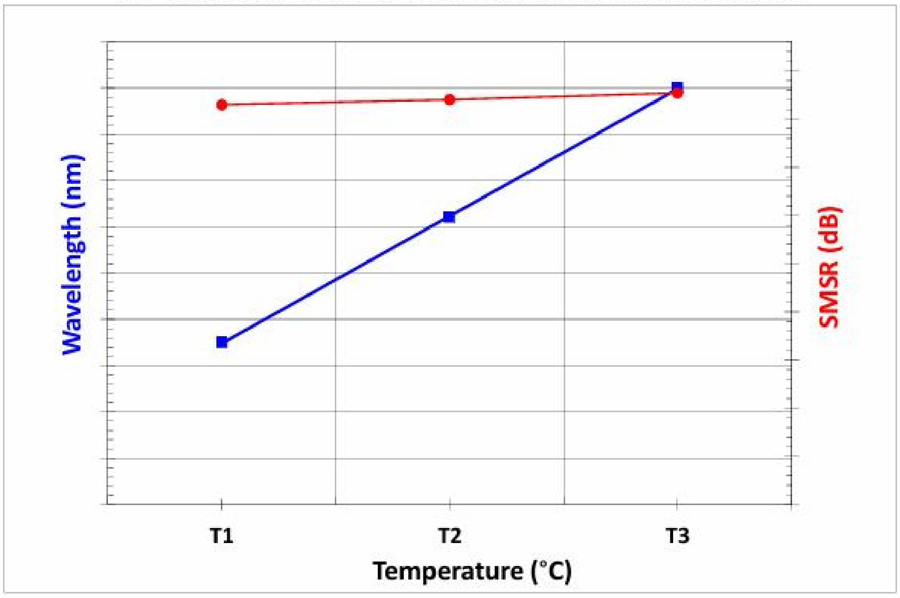
Freespace Encapsulation add-on specifications

Parameters	unit	Minimum	Typical values	Maximum
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
Thermistors	kΩ	-	10	-

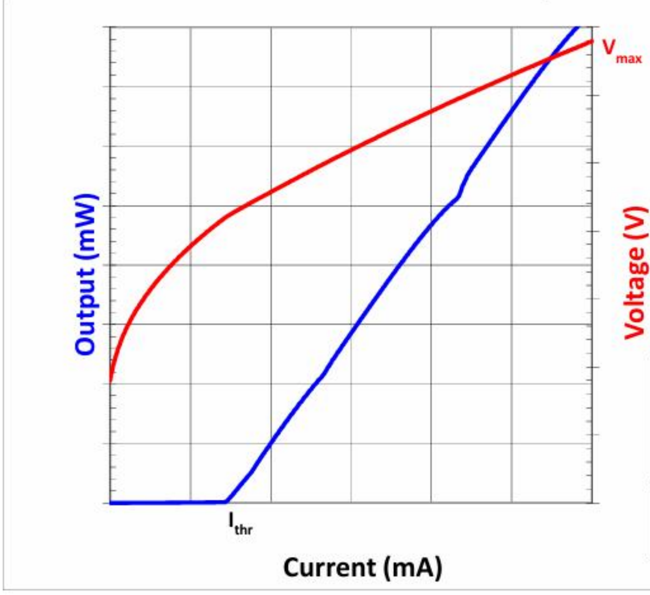
Handling Precautions

These devices are sensitive to ESD. When handling the module, grounded work area and wrist strap must be used. Always store in an antistatic container with all leads shorted together.

Air Wavelength Characteristics at Constant Current by Temperature



LIV Characteristics by Current



Nom. Wavelength (nm)
1064 ± 0.6

Max Operating Current @ Max Power
Low Power - 250 mA @ 180 mW
High Power - 550 mA @ 350 mW

Threshold (mA)
Low Power - 30
High Power - 50

Slope Efficiency (W/A)
Low Power - 0.75
High Power - 0.8

Temperature (°C)
25