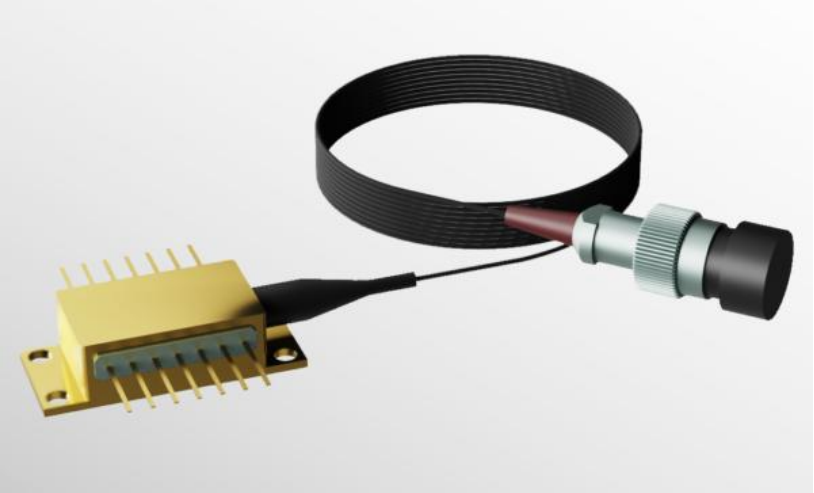
828 nm DBR Laser Diode



Product Description

The 828 nm Distributed Bragg Reflector (DBR) high-performance edge-emitting laser diode is based on advanced monolithic integrated single-frequency Gallium Arsenide (GaAs) laser technology.This series of laser diodes outputs single spatial mode laser beams, with passivated facet design to ensure device reliability. The 828 nm DBR device is applicable to LiDAR (Light Detection and Ranging) and water vapor detection fields.

Product features

Excellent spectral performance ; High output power and outstanding operational reliability; Intelligent control and user-friendly usability

Part Number

MP-DBR-828-130-14BF-PA

Application area

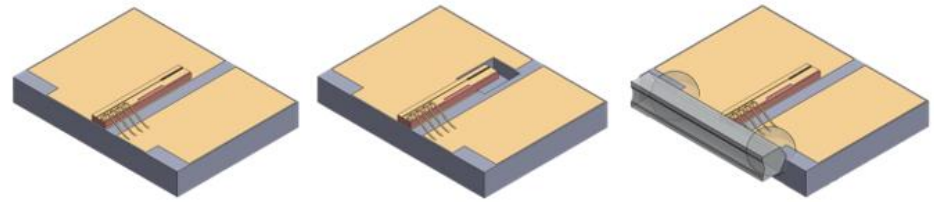
High-end Pumping Applications | Precision Sensing & Measurement Applications

Core parameters

Central Wavelength
828nm

General Parameters

Detailed parameters



Chip on Submount (CoS) | CoS + Mode-Hop Free (MHF) | CoS + Virtual Point Source (VPS) Lens

828nm (COS) package characteristics

	Chip architecture
Parameter [1]	High power
Nominal wavelength (nm)[2]	828 ± 0.6

Power range (mW).	80–180
Maximum operating current (CW & Pulsed) (mA).	250
Optical power (mW) at maximum operating current	180
Nominal Slope Efficiency (W/A).	0.85
Nominal threshold current (mA).	50

1. Unless otherwise noted, all parameters are measured at a junction temperature of 25°C. If used outside of these parameters, the warranty will be void

2. The sealed package may contain a chip-on-substrate (CoS) with a deviation of ±1.2 nm from the nominal value.

Available free-space package add-ons

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-to-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

1.Operating beleow dew point not recommended without hermetically sealed packaged

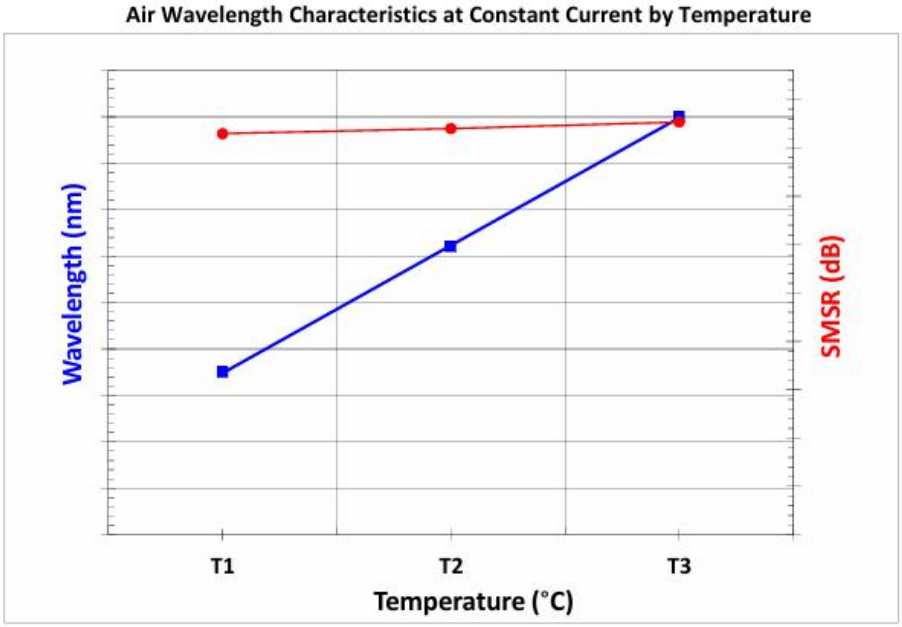
Free-space package Add-Ons

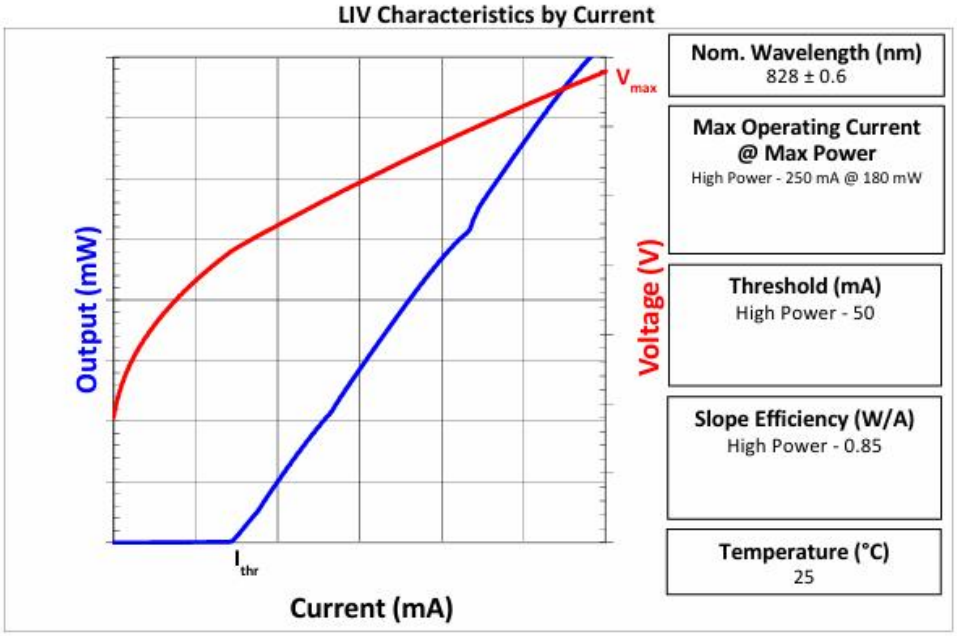
Parameters	unit	Minimum	Typical values	Maximum
Photodiode forward current	mA	-	-	10
Photodiode reverse voltage	V	-	-	50
TEC current (TOSA).	A	-1.1	-	1.1
TEC Voltage (TOSA)	V	-3.0	-	3.0

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.




LIV Characteristics by Current
Output (mW)
Voltage (V)
V_{max}
I_{thr}
Current (mA)
Nom. Wavelength (nm)
828 ± 0.6
Max Operating Current @ Max Power
High Power - 250 mA @ 180 mW
Threshold (mA)
High Power - 50
Slope Efficiency (W/A)
High Power - 0.85
Temperature (°C)
25