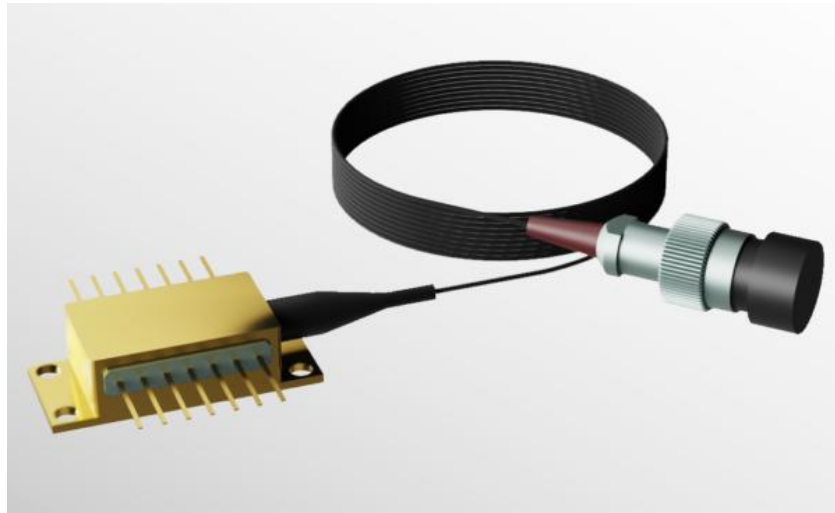


770.108nm DBR Laser Diode



● Product Description

The 770.108 nm DBR series high-performance edge-emitting laser diodes are developed with advanced monolithic single-frequency gallium arsenide (GaAs) laser technology. This laser series provides single spatial mode beam output and adopts facet passivation technology to ensure long-term reliability. 770.108 nm DBR devices are widely applied in potassium-based atomic spectroscopy. Spectroscopic certification guarantees precise coverage of the potassium D1 transition line within a temperature range of ± 10 °C relative to room temperature.

● Product features

Precise wavelength locking; ultra-narrow linewidth; high side-mode suppression ratio; mode-hop-free tuning

● Part Number

MP-DBR-770.108-100-14BF-PA

● Application area

Quantum Technology | Precision Spectroscopy | Aerospace

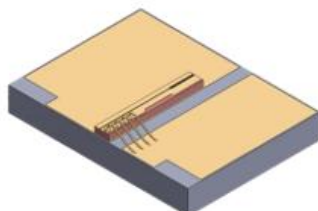
● Core parameters

Central Wavelength
770.108nm

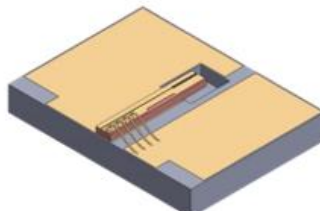
● General Parameters

Model Parameters

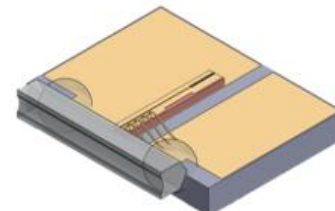
Detailed parameters



Chip on Submount (CoS)



CoS + Mode-Hop Free (MHF)



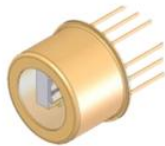
CoS + Virtual Point Source (VPS) Lens

770.108nm (COS) package characteristics

	Chip architecture
Parameter ¹	High power
Nominal wavelength (nm) ²	770.108 ± 0.6
Power range (mW)	40–100
Maximum Operating Current (CW & Pulsed) (mA)	200
Optical power at maximum operating current (mW)	100
Nominal Slope Efficiency (W/A)	0.6
Nominal threshold current (mA)	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.

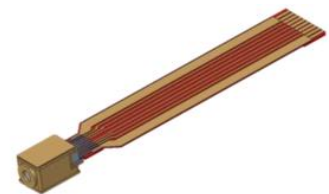
Available free-space package add-ons



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 ($\theta_{ } \times \theta_{\perp}$)	°	-	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	Basic mode			
Temperature tuning rate	nm/°C	-	0.06	-
Current tuning rate	nm/mA	-	0.002	-
Laser reverse voltage	V	-	-	0

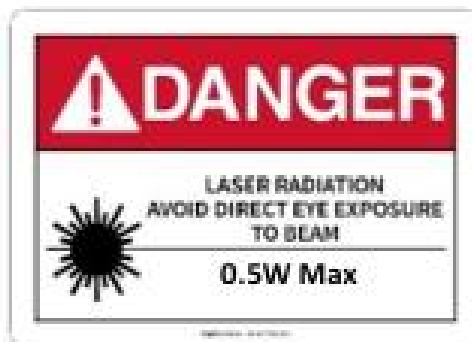
If not sealed, it is not recommended to use below the dew point

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	k Ω	-	10	-

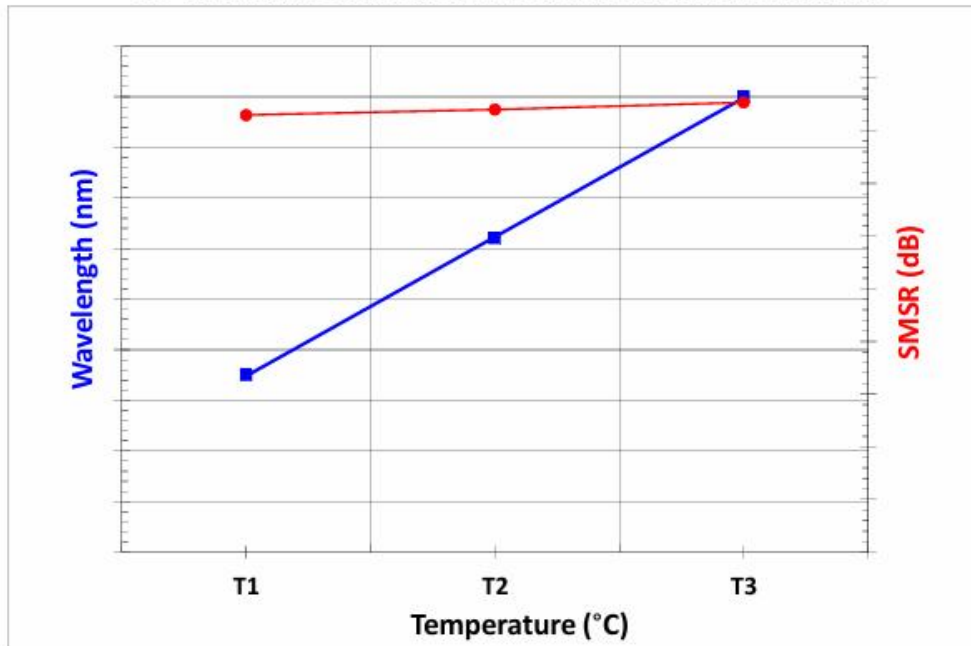
Handling Precautions

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

