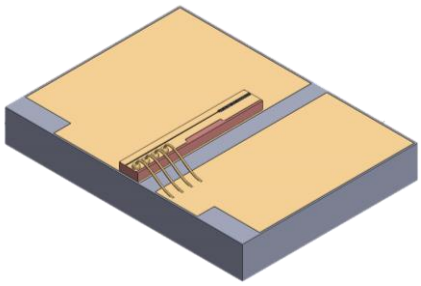
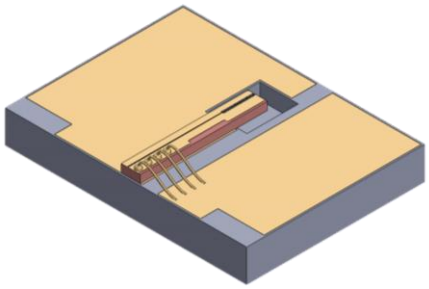
Specification Sheet | **800 nm Series**

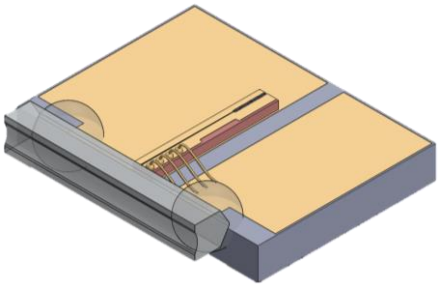
Distributed Bragg Reflector (DBR) Laser Diode



Chip on Submount (CoS)



CoS + Mode-Hop Free (MHF)



CoS + Virtual Point Source (VPS) Lens

Description

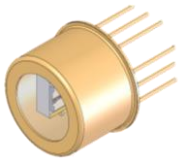
The 800 nm DBR Series of high-performance edge-emitting laser diodes are based on Photodigm's advanced monolithic single-frequency Gallium Arsenide (GaAs) based laser technology. It provides a single spatial mode beam and has passivated facets for reliability. The 800 nm Series DBR devices are used as low-noise pump sources for biomedical diagnostics and imaging applications.

800 nm DBR Chip on Submount (CoS) Characteristics

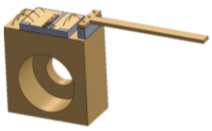
	Chip Architecture
Parameters[1]	**High Power**
Wavelength, Nominal (nm)[2]	800 ± 0.6
Power Range (mW)	80–180
Operating Current, Max (CW & Pulsed) (mA)	250
Optical Power at Max Operating Current (mW)	180
Slope Efficiency, Nominal (W/A)	0.9
Threshold Current, Nominal (mA)	60

1. Characteristics at T_C = 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.

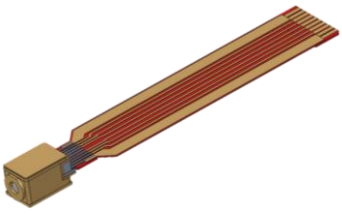
Available Free-Space Package Add-ons



TO-8



C-Mount



Transmitter Optical Subassembly (TOSA)

Photodigm, Inc.
www.photodigm.com
3.13.2024
972-235-7584
1155 E Collins Blvd, #200, Richardson, TX 75081

Photodigm

Specification Sheet | **800 nm Series**

Distributed Bragg Reflector (DBR) Laser Diode

Specifications

Laser

Parameter	Unit	Min	Typical	Max
Storage Temperature	°C	0	-	70
Operating Temperature at case	°C	5	-	70
Operating Temperature at laser chip[1]	°C	5	-	45
Laser Series Resistance	Ω	-	2	-
Laser Forward Voltage @ LIV Current	V	-	2	-
Nominal Laser Linewidth @ LIV Current	kHz	-	500	-
Beam Divergence @ FWHM ($\theta_{\parallel}$ x $\theta_{\perp}$)	º	-	6 x 28	8 x 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

1. Operation below dew point not recommended without hermetically sealed packaged

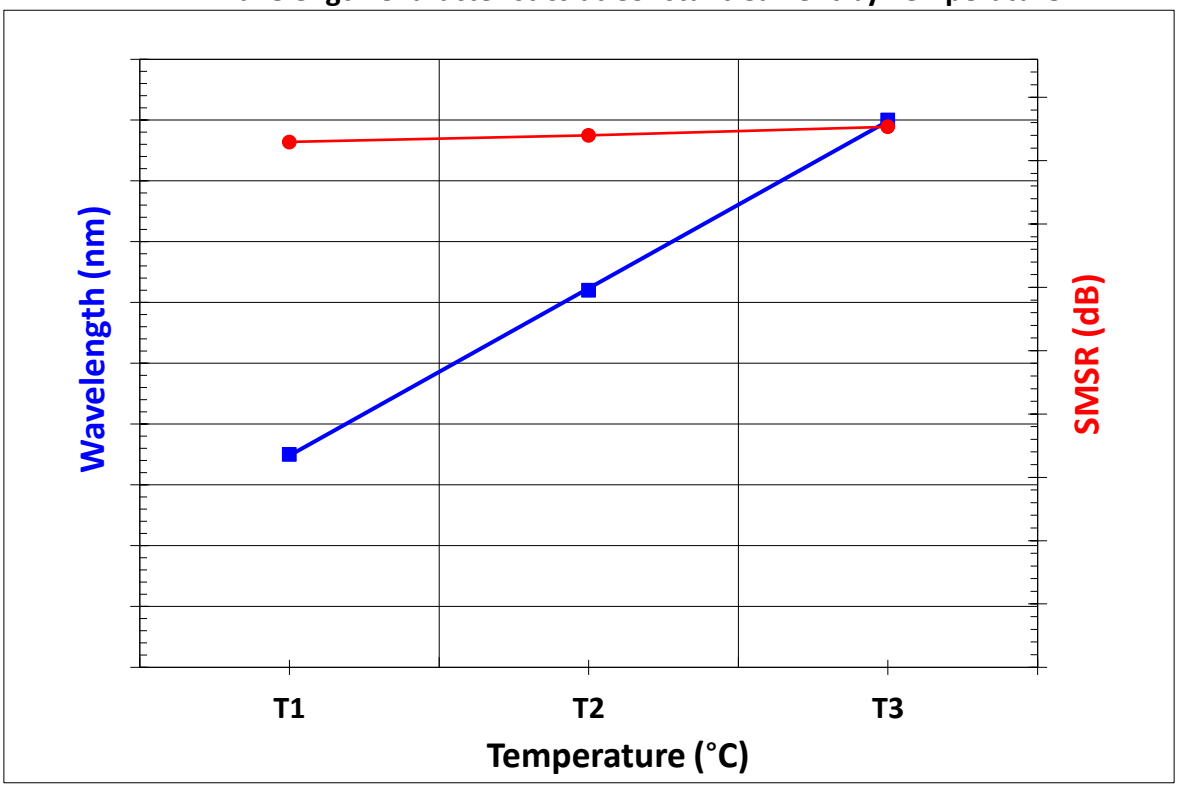
Free-Space Package Add-Ons

Parameter	Unit	Min	Typical	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	-

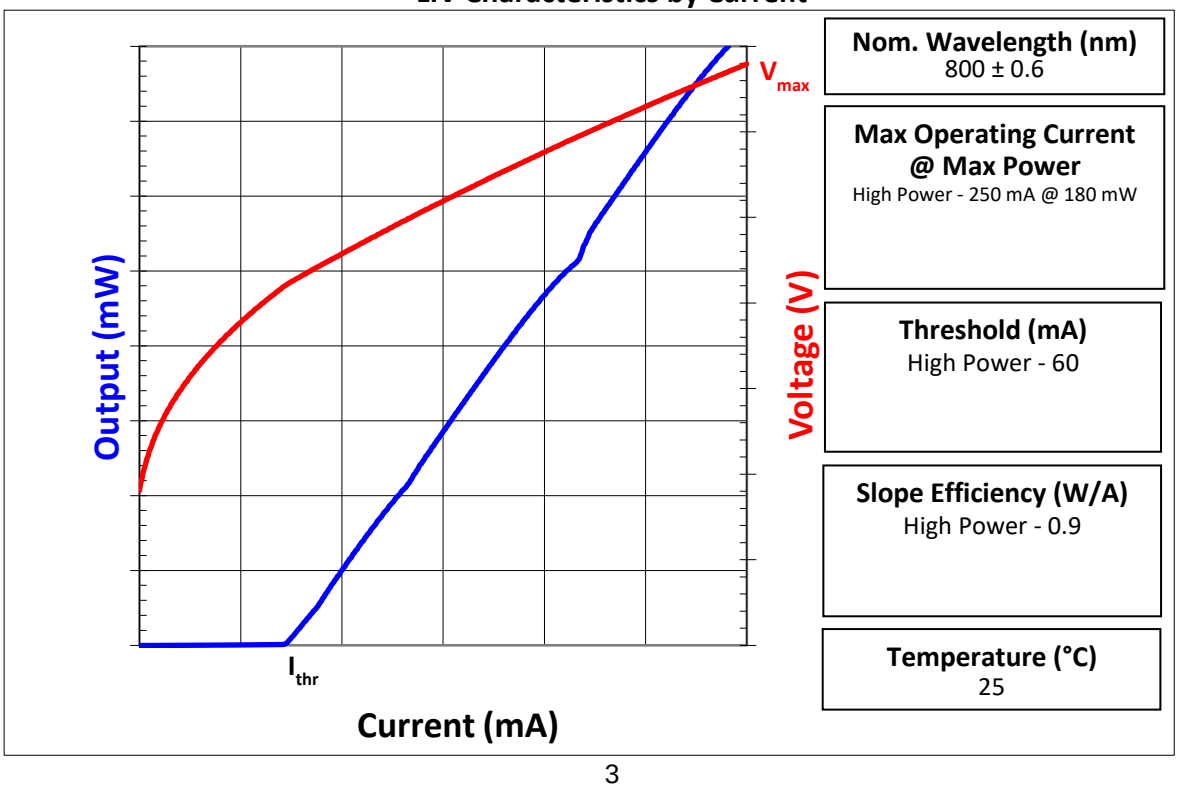
Handling Precautions

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)
800 ± 0.6

Max Operating Current @ Max Power
High Power - 250 mA @ 180 mW

Threshold (mA)
High Power - 60

Slope Efficiency (W/A)
High Power - 0.9

Temperature (°C)
25

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