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976 nm Laser Diode Mercury™ Series

PH976DBR Mercury™ Series High-Power Single- Frequency Laser Diode

976 nm Laser Diode in Mercury™ TOSA Package Technology

- DBR Single-Frequency Laser Chip
- AlGaAs QW Active Layer

Features

- Robust, monolithic die design
- Pulsed operation for spectral stability at short pulse lengths
- Package contains TEC cooling with precise thermistor control

- High Slope Efficiency
- Hermetic package for high reliability

Description

The 976nm Mercury™ series of high-power edge-emitting lasers are based on Photodigm's advanced single-frequency laser technology. It provides a diffraction limited, single lateral and longitudinal mode beam in a compact hermetic package. Facets are passivated for high-power reliability. Applications include mobile spectroscopy instrumentation where durability and reliability are essential.

Absolute Maximum Rating

Parameter	Symbol	Unit	Min	Max
Storage Temperature	T_{STG}	°C	0	80
Operating Temperature	T_{OP}	°C	5.0	70
CW Laser Forward Current, $T=25^{\circ}C$	I_F	mA	-	**
Laser Reverse Voltage	V_R	V	-	0.0
TEC Current	I_{TEC}	A	-1.1	1.1

TEC Voltage	V_{TEC}	V	-3.0	3.0
Thermistor Current	I_{THRM}	mA	-	1.0
Thermistor Voltage	V_{THRM}	V	-	10

**Do not exceed drive current or operating power of supplied LIV

CW Characteristics at $T_C = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Unit	Min	Typ	Max
Center Wavelength @ 150mA	λ_c	nm	974	976	978
Optical Output Power	P_o	mW	See Power Options Call-out		
Slope Efficiency	η_d	W/A	0.6	0.75	-
Threshold Current	I_{th}	mA	-	50	80
Laser Series Resistance	R_S	Ω	-	2.0	2.5

Laser Forward Voltage @ 150mA	V_F	V	-	2.0	2.5
Thermistor Resistance @ 25°C	R_T	K Ω	-	10	-
Laser Line Width	$\Delta\nu$	MHz	-	1	10
Beam Divergence @ FWHM	$\theta_{ } \times \theta_{\perp}$	°	-	6 X 28	8 X 32
Side Mode Suppression Ratio	SMSR	dB	-30	-	-
Laser Polarization				TE	
Mode Structure			Fundamental Mode		

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.

How To Order

Part number example: PH852DBR080TS. Assign optical power from those available. Use a three-digit format for all power entries.

PH976DBR_...TS These devices are sensitive to ESD.

The Mercury™

Package

Minimum Power (mW)

040 180

080 240

120 280



Mercury™ with mount



Mercury™



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