972-235-7584

Photodigm

GET A QUOTE

785 nm Laser Diode | PH785DBR Series

PH785DBR Series High-Power Single-Frequency Laser Diode

785 nm Laser Diode

Technology

- DBR Single-Frequency Laser Chip
- AlGaAs QW Active Layer
- Epi designed for high reliability

Features

- Available in several package styles
- Pulsed operation for spectral stability at short pulse lengths
- High power for CW applications
- High Slope Efficiency

Description

The PH785DBR 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. Facets are passivated for high-power reliability. Applications for the **785 nm laser diode** include Raman spectroscopy and optical storage.

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°C	I_F	mA	-	150**
Pulsed Laser Forward Current, T=25°C, PW=300 ns, DC=10%	I_F	A	-	0.3
Laser Reverse Voltage	V_R	V	-	0.0
Photodiode Forward Current 1/	I_P	mA	-	5.0
Photodiode Reverse Voltage 1/	V_R	V	-	20.0

Photodiode Dark Current, V_R=10V, LD I_F=0, 1/	I_D	nA	-	50
TEC Current 1/	I_{TEC}	A	-2.0	2.0
TEC Voltage 1/	V_{TEC}	V	-6.0	6.0
Thermistor Current 1/	I_{THRM}	mA	-	1.0
Thermistor Voltage 1/	V_{THRM}	V	-	10
External Back Reflection	-	dB	-	-14
Lead Soldering Temperature, 10 sec. Max.	-	°C	-	260

1/ Butterfly package 2/ TO8 package**Do not exceed drive current or operating power of supplied LIV

CW Characteristics at T_C = 25°C unless otherwise specified

Parameter	Symbol	Unit	Min	Typ	Max
Center Wavelength @ 150mA	λ_c	nm	783	785	787
Optical Output Power @ 150mA	P_o	mW	See Power Options Call-out		

Slope Efficiency, 1/	η_d	W/A	0.3	0.36	
Slope Efficiency	η_d	W/A	0.6	0.75	-
Threshold Current	I_{th}	mA	-	50	70
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, 2/	R_T	KΩ	-	10	-
Photodiode Dark Current, V_R=10V, LD I_F=0, 2/	I_D	nA	-	-	50
Laser Line Width @ 150mA	Δv	MHz	-	3	10
Polarization Extinction Ratio, 1/	PER	dB	-16	-19	-
Beam Divergence @ FWHM	θ_{II} X $\theta_{\perp}$	°	-	6 X 32	8 X 34
Side Mode Suppression Ratio	SMSR	dB	-30	-	-
Laser Polarization				TE	
Mode Structure			Fundamental Mode		

1/ Butterfly package 2/ TO-8 package

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: PH785DBR080CM. Assign optical power from those available shown below.
Use a three-digit format for all power entries. Call factory for special performance selection and certification to certain atomic absorption lines.
Butterfly package is offered only at 50% of output powers shown, and is not recommended for spectroscopy applications. See Photodigm's application note titled Optical Feedback

Package Type

(CS) Chip on Submount

(CM) 'C' Mount

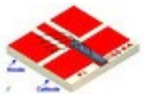
(T8) TO-8

(BF) Butterfly

Minimum Power (mW)

040 120

080 180



Chip on Submount (CS)

C-Mount

TO-8

BF

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