

852nm Laser Diode

Description

The IDP852DBR Series of high-power edge-emitting lasers are based on Idealphotonics's advanced single-frequency laser technology. It provides a diffraction limited, single lateral and longitudinal mode beam.

Facets are passivated for high-power reliability. 852 nm laser diodes are used in atomic spectroscopy for cesium based applications.

Feature

W Available in several package styles

Pulsed operation for spectral stability at short pulse lengths

High power for CW applications

High Slope Efficiency

Technology

DBR Single-Frequency Laser Chip

AlGaAs QW Active Layer

Epi designed for high reliability

Specification

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=T _{op}	I _F	mA	-	200**
Pulsed Laser Forward Current, T=25°C, PW=300 ns, DC=10%	I _F	A	-	0.5
Laser Reverse Voltage	V _R	V	-	0.0
Photodiode Forward Current 1/2/	I _P	mA	-	5.0
Photodiode Reverse Voltage 1/2/	V _R	V	-	20.0
Photodiode Dark Current, V _R =10V, LD I _F =0, 1/2/	I _D	nA	-	50
TEC Current 1/2/	I _{TEC}	A	-2.5	2.5
TEC Voltage 1/2/	V _{TEC}	V	-6.0	6.0
Thermistor Current 1/2/	I _{THRM}	mA	-	1.0

Thermistor Voltage 1/2/	V_{THRM}	V	-	10
ESD (HBM)	-	V	-	500
External Back Reflection	-	dB	-	-14
Lead Soldering Temperature, 10 sec. Max., 1/2/	-	°C	-	260
Fiber Pull Force 1/	-	N	-	5.0
Fiber Bend Radius 1/	-	mm	-	35

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

CW Characteristics at TC = 25°C unless otherwise specified



Parameter	Symbol	Unit	Min	Typ	Max
Center Wavelength	λ_c	nm	850	852	854
Optical Output Power @ LIV current	P_o	mW	40-280		
Slope Efficiency, 1/	η_d	W/A	0.3	0.36	
Slope Efficiency	η_d	W/A	0.6	0.72	-
Threshold Current	I_{th}	mA	-	40	50
Laser Series Resistance	R_s	Ω	-	2.5	3.5
Laser Forward Voltage	V_F	V	-	2.0	2.5
Thermistor Resistance @ 25°C, 1/2/	R_T	K Ω	-	10	-
Photodiode Dark Current, $V_R=10V$, LD $I_F=0$, 1/2/	I_D	nA	-	-	50
Laser Line Width	$\Delta\nu$	MHz	-	0.5	1.0
Beam Divergence @ FWHM	$\theta \times \theta_{\perp}$	°	-	6 X 32	8 X 34
Side Mode Suppression Ratio	SMSR	dB	-30	-	-
Polarization Extinction Ratio, 1/	PER	dB	-16	-19	-
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.

Package

T08	Butterfly
 <p>A cylindrical, gold-colored T08 package with a central lens and four pins extending from the bottom. The background is blue with light rays emanating from the package.</p>	 <p>A yellow butterfly package with a central lens and multiple pins extending from the sides. A fiber optic cable is connected to the top. The background is blue with light rays emanating from the package.</p>