

## 770 nm Laser Diode

### Description

The IDP1064DBR 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. Applications for the 1064 nm laser diode include fiber amplifier seeding, second harmonic generation, spectroscopy, difference frequency generation, and low power DPSS replacement.

### Feature

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	-	550**
Pulsed Laser Forward Current, $T=25^{\circ}C$ , PW=300 ns, DC=10%	$I_F$	A	-	3.0
Laser Reverse Voltage	$V_R$	V	-	2.0
Photodiode Forward Current $\underline{1/}$ $\underline{2/}$	$I_P$	mA	-	5.0
Photodiode Reverse Voltage $\underline{1/}$ $\underline{2/}$	$V_R$	V	-	20.0
Photodiode Dark Current, $V_R=10V$ , LD $I_F=0$ , $\underline{1/}$ $\underline{2/}$	$I_D$	nA	-	50
TEC Current $\underline{1/}$ $\underline{2/}$	$I_{TEC}$	A	-2.5	2.5

TEC Voltage <u>1/</u> <u>2/</u>	$V_{TEC}$	V	-6.0	6.0
Thermistor Current <u>1/</u> <u>2/</u>	$I_{THRM}$	mA	-	1.0
Thermistor Voltage <u>1/</u> <u>2/</u>	$V_{THRM}$	V	-	10
ESD (HBM)	-	V	-	500
External Back Reflection	-	dB	-	-14
Lead Soldering Temperature, 10 sec. Max., <u>1/</u> <u>2/</u>	-	°C	-	260
Fiber Pull Force <u>1/</u>	-	N	-	5.0
Fiber Bend Radius <u>1/</u>	-	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	$\lambda_c$	nm	1062	1064	1066
Optical Output Power @ LIV Current	$P_o$	mW	40-180		
Slope Efficiency, <u>1/</u>	$\eta_d$	W/A	0.25	0.36	
Slope Efficiency	$\eta_d$	W/A	0.60	0.72	-
Threshold Current	$I_{th}$	mA	-	30	40
Laser Series Resistance	$R_s$	$\Omega$	-	2.0	2.5
Laser Forward Voltage	$V_F$	V	-	2.0	2.5
Thermistor Resistance @ 25°C, <u>1/</u> <u>2/</u>	$R_T$	K $\Omega$	-	10	-
Photodiode Dark Current, $V_R=10V, LD I_F=0,$ <u>1/</u> <u>2/</u>	$I_D$	nA	-	-	50
Beam Divergence @ FWHM	$\theta \times \theta_{\perp}$	°	-	6 X 32	8 X 34
Laser Line Width	$\Delta\nu$	MHz	-	8	10
Side Mode Suppression Ratio	SMSR	dB	-30	-	-
Polarization Extinction Ratio, <u>1/</u>	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
	