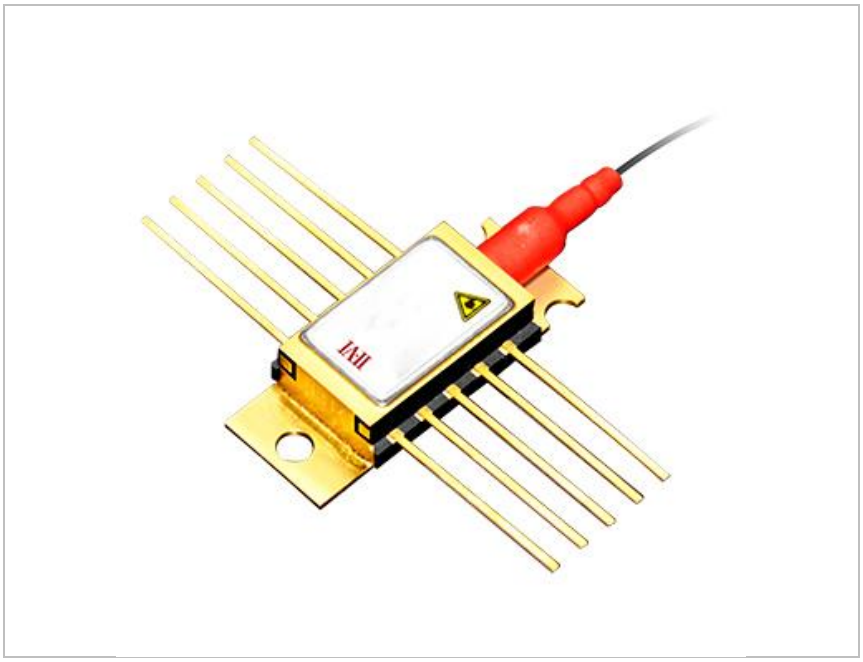
Data Sheet

Wavelength Stabilized 1064nm / 1030nm DFB Laser Diode Mini-Butterfly Module

CMDFB1064A
CMDFB1030A



II-VI Laser Enterprise CMDFB10xxA wavelength stabilized high power single mode laser module has been designed as a light source for pulsed narrow bandwidth fiber laser and direct frequency conversion applications.

A distributed feedback grating(DFB) located in the laser cavity results in the wavelength stabilization within couple of round trips. The laser chip and package are optimized for subnanosecond pulse operation. Processes and techniques of coupling the fiber to the laser allow high peak output powers that are very stable with both time and temperature.

Features:

- Wavelengths : 1064 or 1030 ± 2 nm
- High output CW and pulse power: 200 and 800 mW, respectively
- Short pulse <500 ps modulation
- Lateral and longitudinal single mode
- Polarization maintaining single mode optical fiber
- Internal thermoelectric heat pump and monitor diode
- Hermetically sealed 10-pin mini-butterfly package
- High reliability

Applications

- Fiber laser systems
- Frequency conversion
- Spectroscopy

Optical Characteristics

Case temperature -20 to +75°C Submount temperature 25°C

Parameter	Min	Typ	Max	Unit	Conditions
Threshold current	15	40	70	mA	
Peak wavelength • CMDFB1064A • CMDFB1030A	 1062 1028	 1064 1030	 1066 1032	 nm nm	
Operating CW current			400	mA	Also for current pulses >200 ns
SMSR	30			dB	
CW Output Power	150	200		mW	
Forward voltage		2	2.5	V	
Nanosecond pulse modulation:					
Optical pulse width	1		200	ns	
Operating pulsed peak current			1.6 0.8	A	For pulses <20 ns For pulses <200 ns
Pulsed peak power	600 300	800 400		mW	For pulses <20 ns For pulses <200 ns
Repetition rate			10	MHz	Maximum repetition rate is determined by the pulse width and duty cycle
Duty Cycle			5 1	%	For current pulses <0.8 A For current pulses <1.6 A
Subnanosecond pulses modulation:					
Optical pulse width	~0.1		1	ns	~100 ps is achievable in gain switching regime with dedicated pulse driver
Operating pulsed peak current			1.6	A	
Pulsed peak power	600	800		mW	
Repetition rate			50	MHz	Maximum repetition rate is determined by the pulse width and duty cycle
Duty Cycle			5 1	%	For current pulses <0.8 A For current pulses between 0.8-1.6 A
Chip series resistance		2		Ohm	Small signal equivalent circuit parameters for laser chip
Chip capacitance		50		pF	

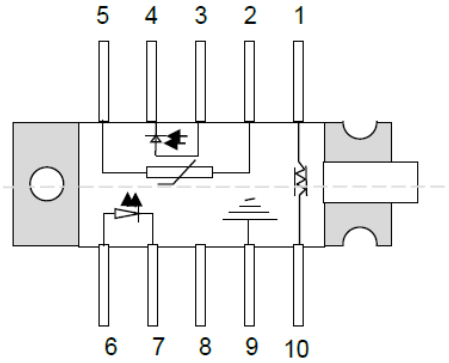
Absolute Maximum Ratings

Parameter	Min	Max	Unit
Storage temperature	-40	85	°C
CW laser forward current (10s max)		0.5	A
Laser reverse voltage		2	V
Heat pump current	-2.2	2.2	A
Heat pump voltage	-3.5	3.5	V
Lead soldering temperature (10s max)		350	°C
Fiber bend radius	20		mm

Fiber Characteristics

Parameter	Min	Typ	Max	Unit
Fiber type: Polarization maintaining Nufern PM980-HP or equivalent (e.g. Fujikura SM98)				
Mode field diameter	5.6	6.6	7.6	um
Buffer diameter	230	250	270	um
Fiber length (module case to fiber end)	1			m
Pristine fiber proof test level	200			psi
Fiber pull to housing	150			psi

Connections



Pin	Description	Pin	Description
1	TEC (+)	6	Laser anode (+)
2	Thermistor	7	Laser cathode (-)
3	Monitor anode (-)	8	NC
4	Monitor cathode (+)	9	Package ground
5	Thermistor	10	TEC (-)

RoHS Compliance

II-VI Laser Enterprise is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

Ordering Information

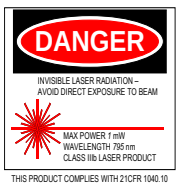
CMDFB1064A	1064nm 10-pin miniBTF Module with DFB Chip
CMDFB1030A	1030nm 10-pin miniBTF Module with DFB Chip

Contact Information

www.laserenterprise.com

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by II-VI Laser Enterprise before they become applicable to any particular order or contract. In accordance with the II-VI Laser Enterprise policy of continuous improvement specifications may change without notice. Further details are available from any II-VI Laser Enterprise sales representative.



Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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