UNCOOLED MINI-DIL PUMP LASER

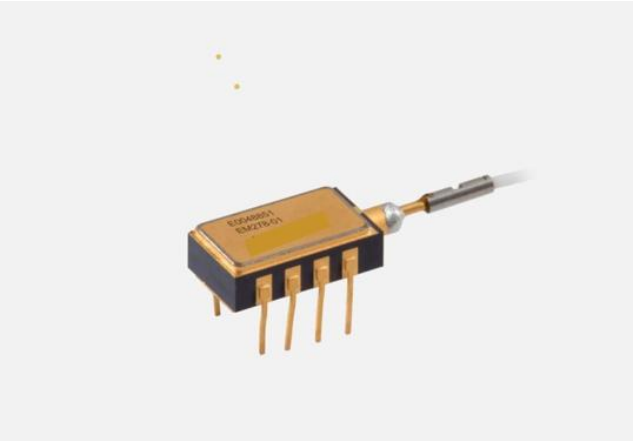
976 m, 200 mW Rated Kink-Free Output Power, FBG Stabilized

PRODUCT DATASHEET

The EM4 EM586 single- mode, uncooled 976 nm pump laser simplifies next generation erbium- doped fiber amplifier (EDFA) designs by eliminating the need for large, less efficient, and costlier electric supplies.

It is wavelength stabilized by a fiber Bragg grating (FBG) which maintains stable performance over temperature ranges of 10 to 60°C and power ranges of up to 200 mW. The hermetically sealed 8-pin mini-DIL package includes thermistor, monitor photodiode and UniDry™ getter.

The fiber Bragg grating precisely locks the center wavelength over extended power and temperature range. By eliminating the thermoelectric cooler, next generation erbium-doped fiber amplifier (EDFA) designs, particularly the thermal and control circuitry, benefit from the pump modules smaller size.



Features

- High power: up to 200 mW
- Low power dissipation
- mini-DIL form factor
- PM fiber
- Ruggedized for harsh conditions

Applications

- FOGs
- SDH/single channel EDFAs
- Small form factor amplifiers
- Gain blocks

Performance Characteristics

Operating Temperature Range (20 to 55c).
Tested for Power at 25c and 55c.
TOP=25°C, Tgrating=23±3°C, and beginning of life unless otherwise specified.

Optical Characteristics	Sym	Condition	Min	Typ	Max	Unit
Operating power 25°C	P_{op}	At I_{op} = 450mA	200			mW
Operating power 55°C	P_{op}	At I_{op} = 450mA	160			mW
KINK-free Power	P_{KINK}		25		200	mW
Center wavelength	□c	P=P_{op}	975.5	976	977.3	nm
Spectral shift with temperature	□□□□T	with FBG		0.02		nm/°C
Side mode suppression	SMSR	P=P_{op}	35			dB
External return reflection					-50	dB
Power in band		@□c±1nm, P>50 mW	90			%
PER				17		dB

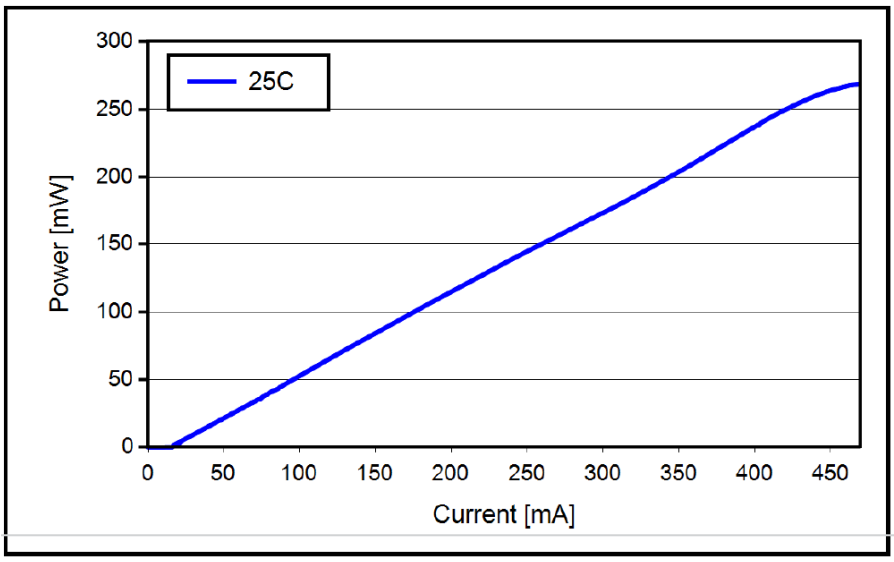
Electrical Characteristics	Sym	Condition	Min	Typ	Max	Unit
Threshold current	I_{TH}				55	mA
Laser drive current	I_{OP}	P=P_{op}=200 mW		350	450	mA
Laser forward voltage	V_F	I = I_{max}			2.1	V
Monitor photo diode current	I_{PD}		0.1		6.0	mA
Monitor photo diode dark current	I_D				100	nA
Thermistor resistance	R_{TH}	T=25°C	9500	10000	10500	□
Thermistor □ coefficient	□	0 / 50°C	3891	3892	3893	

Fiber Characteristics	Min	Typ	Max	Unit
Fiber type, jacket material	PM, Curable Acrylate			
Core diameter	5.6	6.6	7.6	µm
Cladding diameter	123	125	127	µm
Buffer diameter	230	245	260	µm
Pigtail length with grating	1.5	3		m
Proof strength	100			kpsi

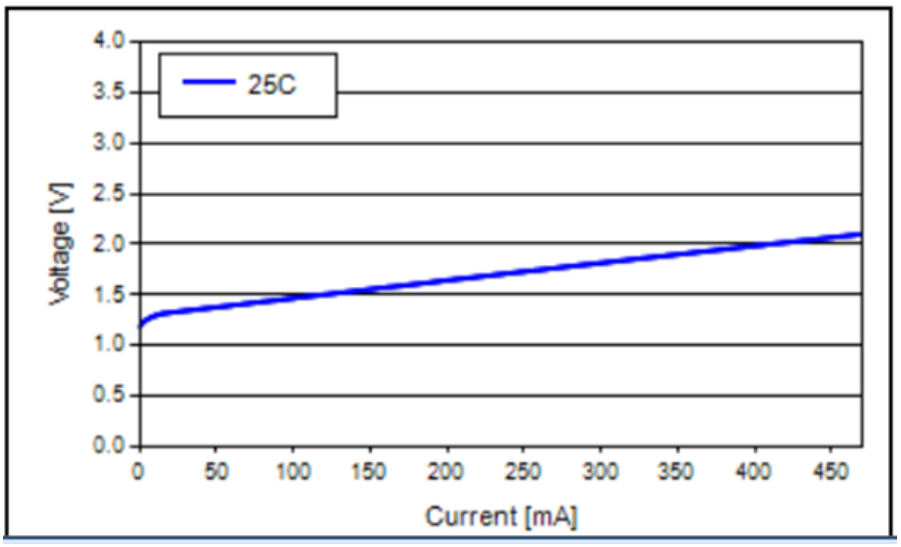
Data Tables

T_{OP} = 25°C

Output power vs laser diode input current.

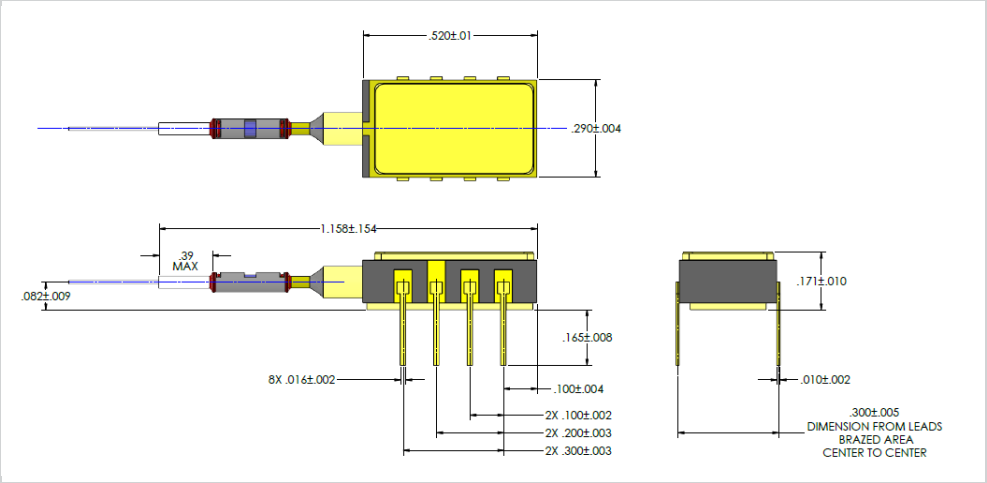


Voltage vs laser diode input current.



Pinout and Mechanical Drawing (Dimensional units in inches)

Pin	Description
1	Thermistor
2	Case GND
3	Thermistor
4	Monitor PD Cathode
5	Monitor PD Anode
6	Laser Cathode
7	Laser Anode
8	NC



Absolute Maximum Ratings*

Absolute Maximum Rating	Sym	Min	Max	Unit
Storage temperature	T_{STG}	-40	+85	°C
Operating case temperature	T_{OP}	-5	+75	°C
Laser forward current	I_F		780	mA
Laser reverse voltage	V_R		2.0	V
Photo diode photo current	I_{PD}		10	mA
Photo diode reverse voltage	V_{PD}		15	V
Thermistor current			2	mA
Thermistor voltage			5	V
Lead soldering time			10	s
Lead soldering temperature			250	°C
Fiber pull force			5	N
Fiber bend radius		20		mm
ESD (human body model)			500	V

* Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only and operation of the device at or beyond these conditions is not implied. Exposure to absolute maximum ratings for extended periods of time may affect device reliability.

Order code

E	M	5	8	6

The standard configuration has no boot.

For further information

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