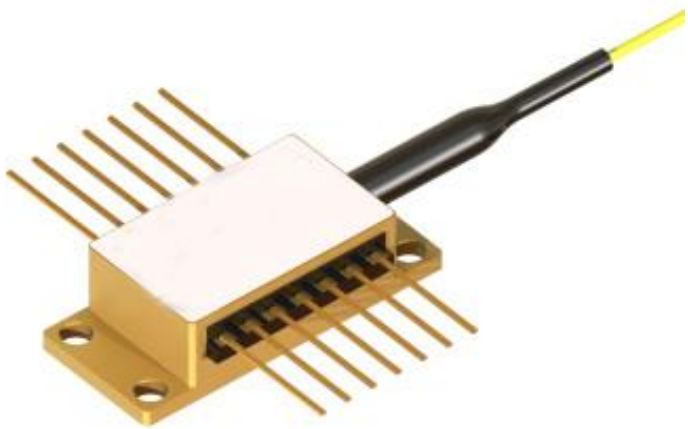
1240nm 350mW PM FP laser diode with FBG



Product Description

We offer a broad portfolio of high-power, spatially single-mode laser diodes covering the wavelength range from 780 nm to 1340 nm.These devices are available in 9 mm TO-can packages with free-space beams, as well as in standard 14-pin butterfly packages with single-mode or polarization-maintaining (PM) fiber coupling.

Product features

High power output; polarization-maintaining fiber coupling; integrated FBG frequency stabilization; efficient thermal design; low noise performance

Part Number

MP-FP-1240-350-14BF-PA-FBG

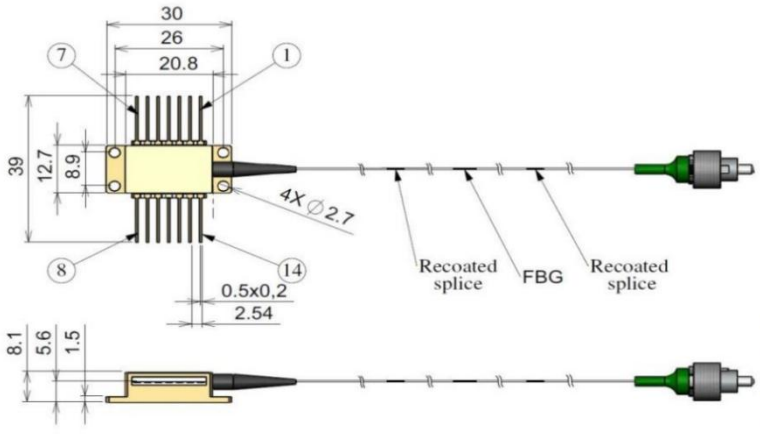
Application area

Fiber laser pumping | Coherent optical communications | Quantum technology | High-precision sensing | Scientific research experiments

Core parameters

Central Wavelength	Output Power
1240 nm	350mw

Dimension Drawing



Pin identification:

1	TEC "+"
2	Thermistor
3	Monitor PD anode (optional)
4	Monitor PD cathode (optional)
5	Thermistor
6	-
7	-
8	-
9	-
10	Laser Diode anode "+"
11	Laser Diode cathode "-"
12	-
13	Case
14	TEC "-"

General Parameters

Model Parameters

Available Power Options					
Conditions:	CW operation, chip temperature 25 °C, package mounted on room-temperature heat sink				
Part Number	Output Power (mW) Pout	Operating Current (mA)		Forward Voltage (V)	
		Typ.	Max.	Typ.	Max.
MP-FP-12XX-350-FBG	350	1200	1400	1.6	1.8
MP-FP-12XX-500-FBG	500	1500	1700	1.7	1.9

Specifications

Conditions:CW operation, chip temperature 25 ° C, package mounted on room-temperature heat sink

Parameter	Symb.	Min.	Typ.	Max.	Unit
Kink- free* output power	—	1.1× Pout	1.3× Pout	—	mW
Available wavelength range	λ	1170	—	1280	nm

Center wavelength tolerance	—	—	—	2	nm
Spectral width at −3 dB at Pout	Δλ	0.080	TBD**	1.5	nm
Threshold current	Ith	—	120	200	mA
Wavelength shift vs FBG temperature	Δλ/ΔT fbg	—	9	12	pm/°C
Distance from chip to fiber grating	D	80	100	120	cm
Recommended chip temperature	T op	20	25	40	°C
Polarization extinction ratio	PER	15	—	—	dB

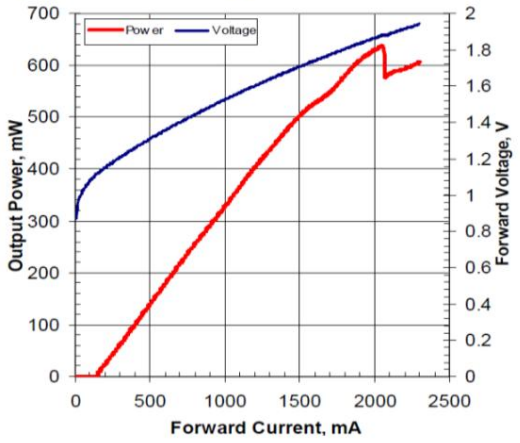
*ΔP/ΔI > 0 (ΔI = 5 mA)

**120 pm for the 350 mW power option and 800 pm for the 500 mW power option. Adjustable upon request.

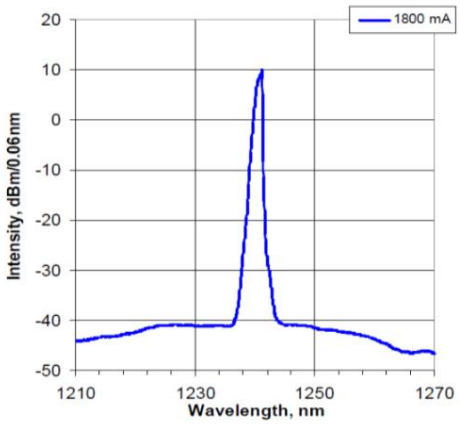
Typical Performance

CW operation, chip temperature 25 ° C, package mounted on room- temperature heat sink

Light-Current-Voltage Characteristics



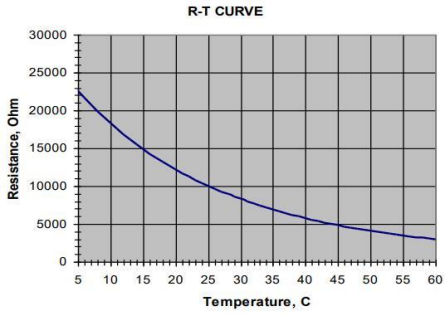
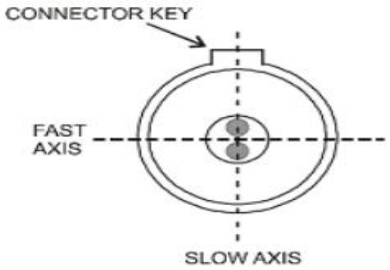
Spectral Characteristics



***Performance shown is for a 1240 nm device. Similar performance is expected for other wavelengths within the 1170–1280 nm range.**

Absolute Maximum Ratings

Parameter	Min.	Max.	Unit
Laser Diode Reverse Voltage	–	2	V
Laser Diode CW Forward Current	–	Iop+300	mA
TEC Current	–	3	A
TEC Voltage	–	4	V
Fiber Bend Radius	3	–	cm
Chip Operating Temperature Range	5	40	°C
Package Operating Temperature Range	0	70	°C
Storage Temperature Range	-40	85	°C

<table>
<tr><th colspan="3">Thermistor Specifications</th><th colspan="3">Fiber Specifications</th></tr>
<tr><th>Parameter</th><th>Value</th><th>Unit</th><th>Parameter</th><th>PM980</th><th>Unit</th></tr>
<tr><td>Thermistor Type</td><td>NTC</td><td>—</td><td>Numerical Aperture, typical</td><td>0.12</td><td>—</td></tr>
<tr><td>Resistance @ 25 °C</td><td>10 ± 0.1</td><td>kΩ</td><td>Cutoff Wavelength</td><td>900 ± 70</td><td>Nm</td></tr>
<tr><td>Beta (0–50 °C)</td><td>3375 ± 1%</td><td>K</td><td>Mode Field Diameter (@ 1060 nm)</td><td>6.6 ± 0.3</td><td>μm</td></tr>
<tr><td colspan="3" rowspan="5"> 
</td><td>Cladding Diameter</td><td>125±1</td><td>μm</td></tr>
<tr><td>Coating Diameter</td><td>245±15</td><td>μm</td></tr>
<tr><td>Length</td><td>1.6 ± 0.2</td><td>μm</td></tr>
<tr><td>Connector</td><td colspan="2">FC/APC (narrow key)</td></tr>
<tr><td colspan="3">Connector Alignment aligned with PANDA fiber</td></tr>
<tr><td colspan="3"> 

Output light is polarized along the slow axis of the PM fiber.</td></tr>
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