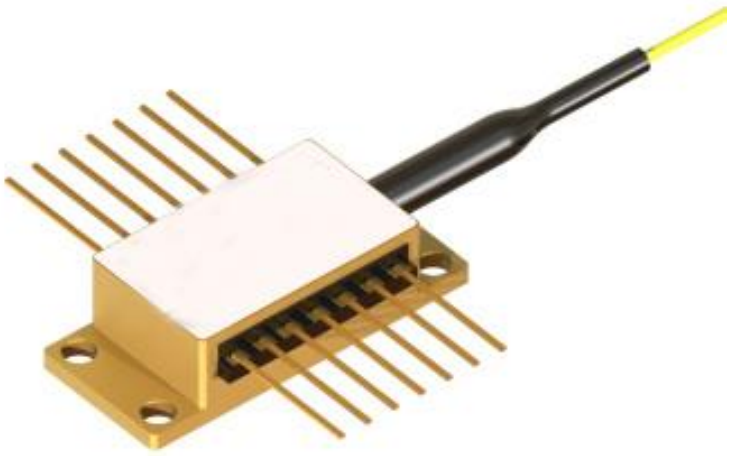
1310nm 350mW PM FP laser diode with FBG



Product Description

We offer a comprehensive product portfolio of high-power, spatially single-mode laser diodes covering the wavelength range of 780 – 1340 nm. These devices are available in either a 9-mm TO-can package with free-space optical coupling or a 14-pin butterfly package compliant with single-mode (SM) or polarization-maintaining (PM) fiber optic standards.

Product features

High power output; Polarization-maintaining fiber coupling; Integrated FBG wavelength stabilization; High-efficiency heat dissipation design; Low noise performance

Part Number

MP-FP-1310-350-14BF-PA-FBG

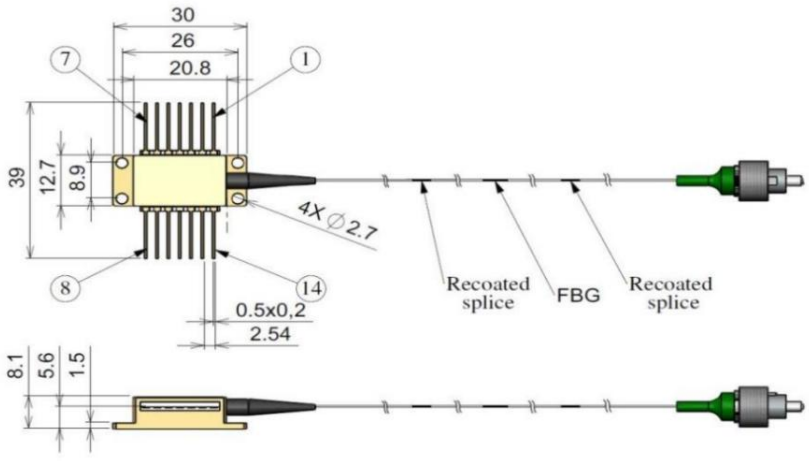
Application area

Fiber laser pump sources | Optical communication modules | Quantum technology | High-precision sensing | Scientific research experiments

Core parameters

Center Wavelength	Output Power
1310 nm	350 mW

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					
Test Conditions	CW Operation, Chip Temperature 25°C, Case Mounted on Room Temperature Heat Sink				
Part Number	Output Power (mW) Pout	Operating Current (mA)		Forward Voltage (V)	
		Typ.	Max.	Typ.	Max.
MP-FP-13XX-350-FBG	350	1350	1650	1.8	2.1
MP-FP-13XX-400-FBG	400	1500	1800	1.9	2.2

Specifications					
Test Conditions	CW Operation, Chip Temperature 25°C, Case Mounted on Room Temperature Heat Sink				
Parameter	Symbol	Min.	Typ.	Max.	Unit
Unkinked* Output Power	-	1.1×Pout	1.3×Pout	-	mW

Available Wavelength Range	λ	1280	-	1340	nm
Average Wavelength Tolerance	-	-	-	2	nm
-3dB Spectral Width @ Pout	Δλ	0.080	TBD**	1.5	nm
Threshold Current	Ith	-	120	250	mA
Wavelength Shift vs. FBG Temperature	Δλ/ΔTfbg	-	9	12	pm/°C
Chip-to-FBG Distance	D	80	100	120	cm
Recommended Operating Chip Temperature	Top	20	25	40	°C
Polarization Extinction Ratio	PER	15	-	-	dB

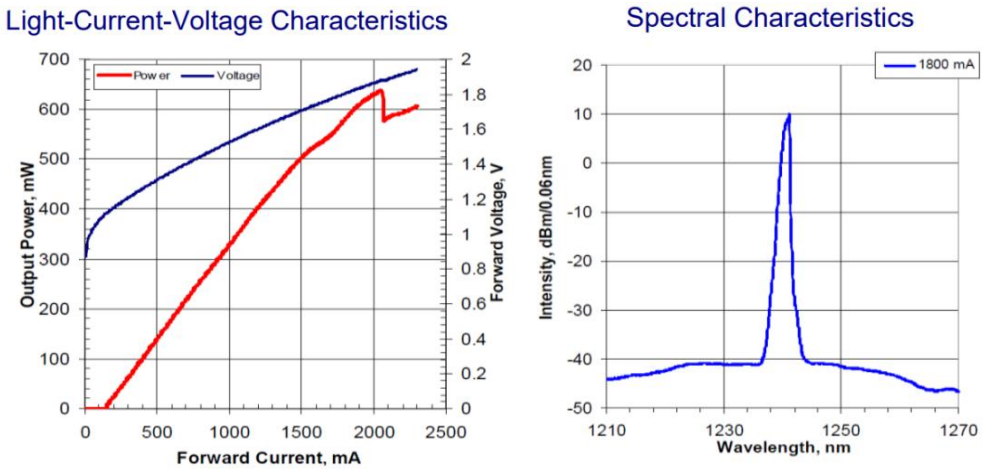
*ΔP/ΔI>0 (ΔI=5mA)

**For 350mW power option: 120pm; for 500mW power option: 800pm.

Adjustable upon request.

Typical Performance

CW Operation, Chip Temperature 25°C, Case Mounted on Room Temperature Heat Sink

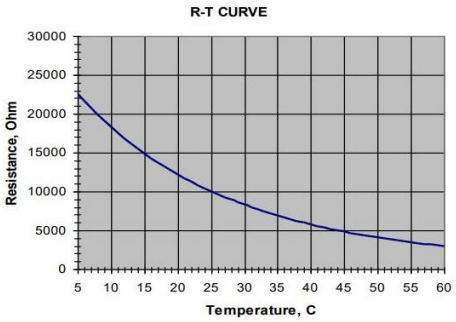
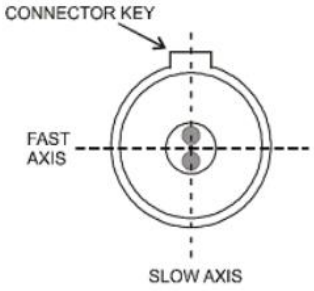


Performance is shown for the 1240 nm device. For other wavelengths within the 1170–1280 nm range, similar performance is expected.

Absolute Maximum Ratings

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

Thermistor Specifications

Thermistor Specifications			Fiber Specifications (PM980)		
Parameter	Value	Unit	Parameter	Value	Unit
Thermistor Type	NTC	-	Numerical Aperture (Typ.)	0.12	-
Resistance @25°C	10 ± 0.1	kOhm	Cutoff Wavelength	900 ± 70	nm
Beta (0-50°C)	3375 ± 1%	K	Mode Field Diameter (@1060nm)	6.6 ± 0.3	μm
			Cladding Diameter	125 ± 1	μm
			Coating Diameter	245 ± 15	μm
			Length	1.6 ± 0.2	m
			Connector	FC/APC (narrow key)	
			Connector Alignment with PANDA Fiber		
					
			Output light is polarized along the slow axis of the PM fiber.		