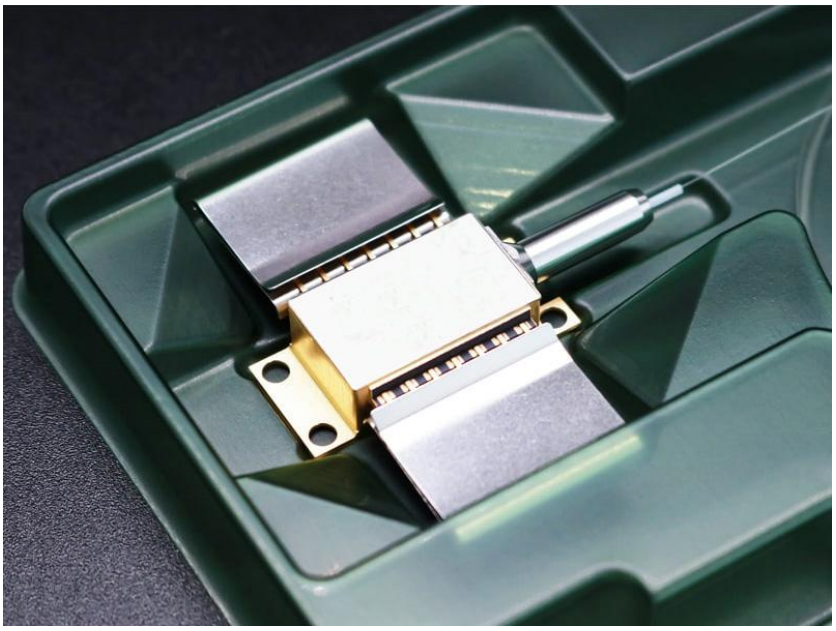
1420nm 500mW PM FP laser diode with FBG



Product Description

This is a 1.4um band pump laser module developed for fiber Raman amplifiers. It features an output power of up to 500mW, polarization-maintaining fiber output, 14-pin butterfly package, and integrates built-in TEC, PD, and thermistor.

Product features

Features:High output power; FBG frequency stabilization technology; Multi-longitudinal mode characteristics; High-reliability package; Low-noise design

Part Number

MP-FP-1420-500-14BF-PA-FBG

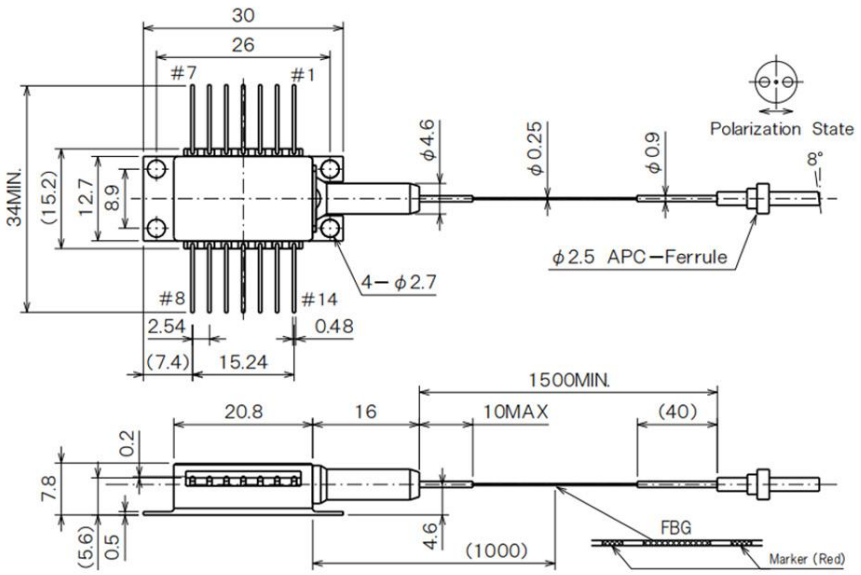
Application area

Fiber laser pumping | Industrial processing | Medical equipment | Scientific research experiments | Optical fiber sensing

Core parameters

Central Wavelength	Output Power
1420nm	500mW

Dimension Drawing



(Note) The polarization direction of LD is parallel to the slow axis of PMF

General Parameters

Technical Parameters

Technical Parameters: Electro-Optical Characteristics

(TFBG=25°C, TLD=25°C, TC=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Threshold Current	Ith	-	-	-	180	mA
Center Wavelength	λC	at rating output power, RMS (-20dB)	λC−1.0	λC	λC+1.0	nm
Spectral Width	Δλ	at rating output power, -10dB	-	-	3.5	nm
PD Monitor Current	Im	at rating output power, VRD=5V	100	-	2000	μA
PD Dark Current	Id	VRD=5V	-	-	0.1	μA
Tracking Error	ΔPf	Im=const., TC=−20 to 70◦ C	-0.5	-	0.5	dB
Thermistor	Rth	TLD=25◦ C, B=3900±100K	9.5	10	10.5	kΩ

Polarization Extinction Ratio	Xp	at rating output power	17	-	-	dB

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
LD Forward Current	IF	2200	mA
LD Reverse Voltage	VR	2	V
PD Forward Current	IFD	10	mA
PD Reverse Voltage	VRD	20	V
Case Operating Temperature	TC	-20 to +70	°C
Storage Temperature	Tstg.	-40 to +85	°C
Cooler Current	IC	5.8	A

*Exceeding absolute maximum ratings may cause device failure.

Optical Output Power, COOLER Characteristics and Power Consumption (TLD=25°C)

Center Wavelength λC	Rated Output Power Pf [mW]	LD Current IF BOL [A]	Forward Voltage VF		Cooler Current IC EOL [A]	Cooler Voltage VC EOL [V]
			BOL [V]	EOL [V]		
1420 to 1499 nm	300	1150	2.0	2.3	2.20	2.70
	320	1200	2.0	2.3	2.20	2.70
	340	1300	2.0	2.3	2.30	2.80
	350	1400	2.0	2.3	2.35	2.85
	360	1400	2.0	2.3	2.40	2.90
	380	1400	2.0	2.3	2.45	2.95
	400	1400	2.0	2.3	2.50	3.00
1420 to 1485 nm	420	1600	2.2	2.5	2.60	3.10

	450	1700	2.2	2.5	2.70	3.20
	500	1800	2.2	2.5	2.90	3.40

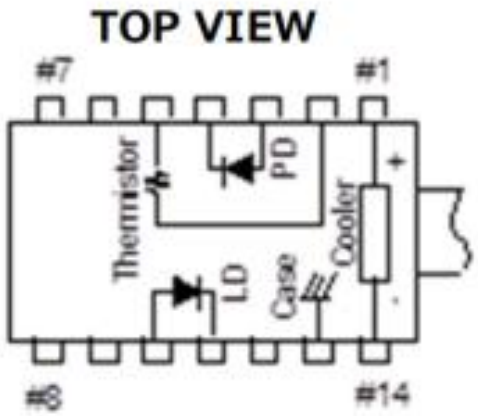
*Note: IF_EOL=IF_BOL×1.2, Maximum Value.

Polarization-Maintaining Pigtail Parameters

Parameter	Min.	Typ.	Max.	Unit
Cutoff Wavelength	1300	-	1400	nm
Mode Field Diameter (MFD) @1550nm	10.0	10.5	11.0	μm
Cladding Diameter	124	125	126	μm
UV Coating Diameter	230	245	260	μm
FBG Wavelength Temperature Coefficient	-	0.01	0.02	nm/°C
Bend Radius	30	-	-	mm

Product Characteristics

Pin Definition



No.	FUNCTION	No	FUNCTION
1	Cooler anode	8	NC
2	Thermistor	9	NC
3	PD anode	10	LD anode
4	PD cathode	11	LD cathode
5	Thermistor	12	NC
6	NC	13	Case
7	NC	14	Cooler cathode