HJ OPTRONICS

980nm 700mW Pump Laser Diode

Model #: BFLD

Description: The 980 nm pump laser diodes utilize a planar construction with chip on subcarrier. The high power chip is hermetically sealed in an epoxy-free and flux-free 14-pin butterfly package and fitted with a thermistor, thermoelectric cooler, and monitor diode.

The BFLD-980F pump module uses FBG stabilization to "lock" the emission wavelength. It provides a noise-free narrowband spectrum, even under changes in temperature, drive current and optical feedback. Wavelength selection is available for applications that require the highest performance in spectrum control with the highest available powers. This module complies Telcordia GR-468-CORE requirement.

Features:

- Kink-free operating power up to 700mW
- Epoxy-free, and flux-free 14-PIN butterfly package with SM Hi1060 or PM fiber
- Fiber Bragg grating stabilization
- Wavelength selection available
- Integrated thermoelectric cooler, thermistor, and monitor diode

Applications:

- Dense wavelength division multiplexing (DWDM) erbium doped fiber amplifiers (EDFA)
- Reduced pump-count EDFA architectures
- Very long distance cable television (CATV) trunks and very high node count distribution

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typic	Max.	Unit	Note
Storage temperature	T_s	-40	-	85	ºC	2000 Hours
Operating case temperature	T_{op}	-25	-	75	ºC	
LD Forward Current	I_F	-	-	1500	mA	
LD Reverse Current	I_R	-	-	10	μA	
LD Reverse Voltage	V_{LR}	-	-	2	V	
PD Forward Current	I_{FPD}	-	-	-10	mA	
PD Reverse Voltage	V_{RPD}	-	-	20	V	
TEC current	I_{TEC}	-	-	2.2	A	
TEC voltage	V_{TEC}	-	-	3.5	V	
Fiber Bend Radius	-	30	-	-	mm	
Relative Humidity	RH	0	-	95	%	Non condensing
Lead Soldering Time	-	-	-	10	Sec.	260 Cº
Fiber Axial Pull Force	-	-	-	5	N	
Fiber Side Pull Force	-	-	-	2.5	N	

Electro-Optical Characteristics (at 25□ laser temperature, unless otherwise noted)

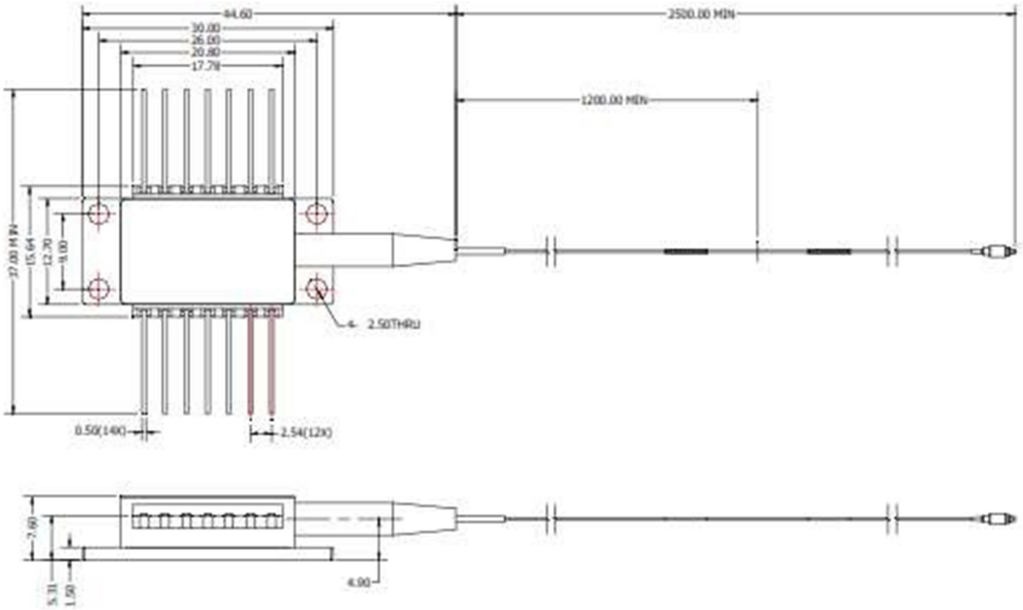
Parameter		Symbol	Min.	Typi	Max.	Unit	Condition
LD Threshold Current		I_{th}	-	60	100	mA	CW
Output Power		P_f	-	-	700	mW	If (BOL)<900mA
LD Forward Current		I_f	-	1100	1200	mA	Pf = Rated power
Kink Free Power		P_{kink}	450	-	-	mW	>=1.2*rated Power
Kink Free Current		I_{kink}	>=1.2*I_f(BOL)			mA	[1]
LD Forward Voltage		V_f	-	-	2.5	V	Pf = rated power
Center Wavelength		λ_c	973	975	975	nm	Peak, Pf = rated power
			975	976	977		
Peak Wavelength Turning		$\Delta\lambda_p/\Delta T_{amb}$	-	-	0.02	Nm/ºC	T: FBG Temp.
Spectral Linewidth		Δ_λ	-	-	1	nm	RMS @ -13 dB
Spectra Stability			-0.5	-	0.5	nm	Pf=rated power, t=60s
Monitor Responsivity		I_m/P_f	-	8	20	μA/mW	Vpd=5V, Pf=rated power
Monitor Responsivity			-	-	20	%	@All operating
Power Stability	>20mW				0.2	dB	Peak-to peak, t=60s, DC to 50KHz sampling, Tc = 25 ºC
	10-20mW				0.5		
	3.5-10mW				1		
Monitor Dark Current		I_d	-	-	50	nA	Vpd=5V
TEC Current		I_{TEC}			2	A	Tcase=75 ºC
TEC Voltage		V_{TEC}			3.5	V	Tcase=75 ºC
TEC Module Power Consumption		P			5	W	Tcase=75 ºC
Tracking Error		TE	-0.5	-	0.5	dB	Tc=-5~+75 ºC, ref. to (2)
Thermistor Resistance		R_{TH}	9.5	10	10.5	Kohm	Tstg = 25 ºC
Thermistor B Constant		B_{TH}		3900		K	Tstg = 25 ºC

Notes:
[1] Kink Current is defined as the current which deviation of light versus current slop (dL/dI) from a linear fit is beyond +/-50%, P_{kink}>=1.2*Rated Power, I_{kink}>=I_f (BOL)*1.2
[2] Tracking error is defined at a given case temperature, it is the change in fiber power, at a constant monitor current, relative to the value measured at case 25℃

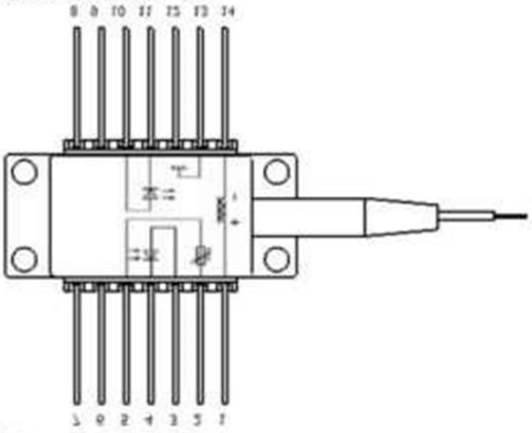
Fiber Pigtail Specifications

Parameters	Description
Fiber Type	PM fiber 980
Jacket Type	Bare fiber
Pigtail Length	1.5 ± 0.1
Connector Type	No connector

Package Drawing and Pin Function:



DIMENSION: MM
GENERAL TOLERANCE: 0.1



PIN	DESIGNATIONS	PIN	DESIGNATIONS
1	TEC (+)	14	TEC (-)
2	Thermistor	13	Case Ground
3	PD Anode	12	NC
4	PD Cathode	11	LD Cathode
5	Thermistor	10	LD Anode
6	NC	9	NC
7	NC	8	NC

Notes:

Dimensions are in millimeters. All dimensions are ±0.1mm unless otherwise specified. (Unit: mm).

Ordering Information: BFLD-XXXB-C-D-E-F

XXX: wavelength	B: FBG	C –output power (mW)	D: fiber type	E: connector type	F: jacket type
974 – 974 nm	F – with FBG	1H – 100 mW	SM – SMF	FA - FC/APC	0 – bare fiber
976 – 976 nm	N – no FBG	2H – 200 mW	PM – PM fiber	SA - SC/APC	1 – 900 um loose tube
		4H – 400 mW		NO - none	
		6H – 600 mW		X - specify	
		7H – 700 mW			