

Laser Diode 840nm 20mW



BLD-840-14BF Fiber Bragg Grating laser is single frequency laser diode module designed for optical measurement and communication. The laser is packaged in 14-pin standard butterfly package with monitor photodiode and thermo-electric cooler (TEC).

Key Features

- Optical output: 20mW
- Narrow linewidth ($\Delta\nu < 0.1\text{MHz}$)
- Wavelength: 840nm @ 25°C
- SM or PM Fiber ($\varnothing 0.9\text{mm}$)
- FC-APC connector
- 14-pin butterfly package
- Internal monitor PD and TEC
- Low power consumption

Optical and electrical characteristics: (T = 25°C)

Item	Symbol	Test condition	Min.	Typ.	Max.	Unit
Output Power	P_f			20		mW
Forward Voltage	V_F	$P_f=20\text{mW}$			2.5	V
Threshold Current	I_{th}			20	40	mA
Forward Current	I_F	$P_f=20\text{mW}$		150	200	mA
Center Wavelength	λ_c	$P_f=20\text{mW}$	800		850	nm
Spectral Width	$\Delta\lambda$	$P_f=20\text{mW}$		100		kHz
Side Mode Suppression Ratio	SMSR	$P_f=20\text{mW}$	40	45		dB
Monitor Current	I_m	$P_f=20\text{mW}, V_{RD}=5\text{V}$	40		200	μA
PD Dark Current	I_d	$V_{RD}=5\text{V}$			0.1	μA
Cooler Voltage	V_C	$I_F=EOL, TC=70^\circ\text{C}$			2.7	V
Cooler Current	I_C	$I_F=EOL, TC=70^\circ\text{C}$			1.4	A
Thermal Resistance	R_o	$T_{LD}=25^\circ\text{C}, B=3900\pm 100\text{K}$	9.5	10.0	10.5	k Ω
Extinction Ratio	X_P	$P_f=20\text{mW}$	17			dB
Mode Hop Free Range	ΔI			30		mA
Single-Frequency Continuous Tuning Range	Δf		3			GHz
Current Tuning	$\Delta\lambda/\Delta I$			0.001		nm/mA
Temperature Tuning	$\Delta\lambda/\Delta T$			0.08		nm/ $^\circ\text{C}$

Absolute Maximum Ratings

Item	Symbol	Rating	Unit
LD Forward Current	I_f	300	mA
LD Reverse Voltage	V_r	1.8	V
PD Reverse Voltage	V_{RD}	10	V
Operation Case Temperature	T_c	-40 to +70	°C
Storage Temperature	T_{stg}	-40 to +85	°C
Cooler Current	I_c	1.4	A

PACKAGING

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 anode

