

## DFB Laser Module 1310nm 5mW



DFB-1310-14BF distributed feedback 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: 5mW
- Narrow linewidth ( $\Delta\nu < 10\text{MHz}$ )
- Wavelength: 1310nm @ 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, CW	$P_f$	CW		3	5	mW
Output Power, Pulse	$P_p$	Pulse		10	15	mW
Forward Voltage	$V_F$	$P_f=3\text{mW}$			2	V
Threshold Current	$I_{th}$		8	10	12	mA
Forward Current	$I_F$	$P_f=3\text{mW}$			70	mA
Center Wavelength	$\lambda_c$	$P_f=3\text{mW}$	1300	1305	1310	nm
Spectral Width	$\Delta\lambda$	$P_f=3\text{mW}$			10	MHz
Side Mode Suppression Ratio	SMSR	$P_f=3\text{mW}$	35	40		dB
Relative Intensity Noise	RIN	$P_f=3\text{mW}$		-140		dB/Hz
Monitor Current	$I_m$	$P_f=3\text{mW}, V_{RD}=5\text{V}$	40		500	$\mu\text{A}$
PD Dark Current	$I_d$	$V_{RD}=5\text{V}$			0.1	$\mu\text{A}$
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 $\Omega$
Extinction Ratio	$X_P$	$P_f=3\text{mW}$	19			dB
Single-Frequency Continuous Tuning Range	$\Delta f$			2		nm
Current Tuning	$\Delta\lambda/\Delta I$			0.002		nm/mA
Temperature Tuning	$\Delta\lambda/\Delta T$			0.09		nm/ $^\circ\text{C}$

## Absolute Maximum Ratings

Item	Symbol	Rating	Unit
LD Forward Current	$I_f$	100	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

