



14 Pin DFB Butterfly Laser

Description

A multi-quantum well (MQW) DFB Laser in a 14 Pin butterfly package. This DFB laser features high output power, good Side Mode Suppression Ratio (SMSR) and a built in Peltier Thermoelectric Cooler (TEC) as well as a built-in photodiode for power monitoring.

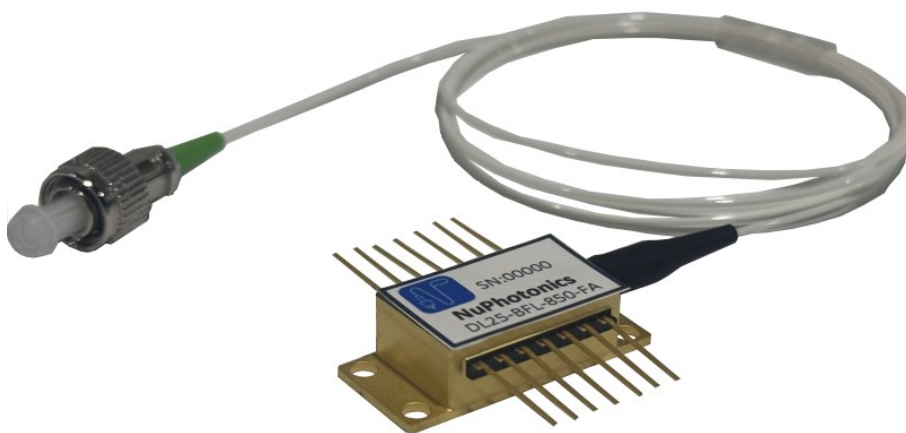
Features

- High output power 1 – 300 mW
- Built in monitor Photodiode
- Available wavelengths
 - 850 nm
 - 1310 nm
 - 1550 nm
- High Linearity
- RoHS compliant
- Built-in TEC
- 10 K Ω Thermistor
- Ability to choose desired optical connector.
- Ability to choose desired Optical Power



Applications

- Long Reach Analog Transmission Systems
- Test Equipment
- Optical Communication



Electro-Optical Characteristics ($T_{op} 23 \pm 3^{\circ}C$, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Forward Voltage	V_{FP}			2	V	850, 1310, 1550, nm (CW)
Threshold Current	I_{th}		8		mA	850 nm (CW)
			10		mA	1310, 1550 nm (CW)
Optical Power	P_o	1		250	mW	850 nm (CW)
		1		300		1310, 1550 nm (CW)
Center Wavelength	λ_c	$\lambda_c - 5$	λ_c	$\lambda_c + 5$	nm	CW 25°C
Rise Time	T_r		1	2	ns	850 nm , 10-90%
			0.5	2		1310, 1550 nm, 10-90%
Fall Time	T_f		1	2	ns	850 nm , 90-10%
			0.5	1		1310, 1550nm , 90-10%
Monitor Dark Current	I_d			500	nA	CW, $V_{rd} = 5V$
Monitor Current	I_m	10		150	uA	CW, $V_{rd} = 5V$
TEC Current	I_{tec}			1.5	A	$\Delta T = 40K$
TEC Voltage	V_{tec}			2.5	V	$\Delta T = 40K$
Side Mode Suppression Ratio	SMSR	35	50		dB	CW, $I_f = I_{th} + 20 \text{ mA}$
Slope Efficiency	S_e		0.3		mW/mA	CW
Spectral Width	$\Delta\lambda$		1		Nm	CW, - 20 dB
Thermistor B-Value	β		3950		K	25°C

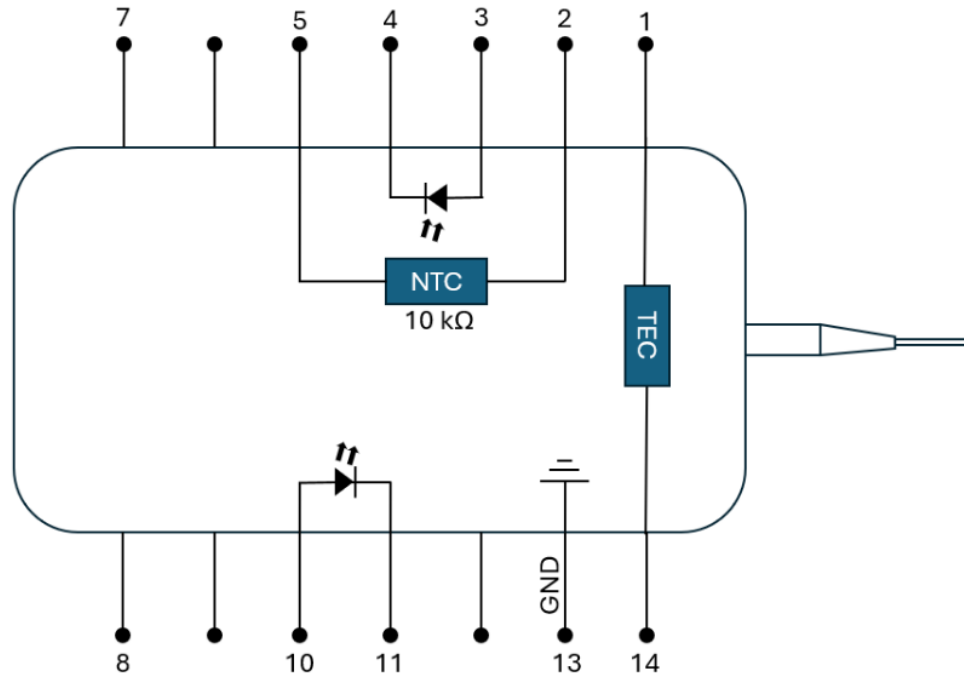
Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Voltage	V_r	Laser		2	V
		Photodiode		10	
Forward Current	I_f	Laser		100	mA
Reverse Current	I_R	Photodiode		2	mA
TEC Voltage	V_{tec}			2	V
Storage Temperature	T_{stg}		-25	90	°C
Storage Humidity	H_{stg}			90	% r.H.
Operating Temperature	T_{op}		-25	80	°C
Soldering Temperature	T_{st}	60 sec		200	°C
ESD Susceptibility		HBM	100		V

Operating at maximum ratings for a prolonged period will cause damage to the device.



Pin Configuration



Pin Number	Function	Pin Number	Function
1	TEC (+)	8	No Connect
2	Thermistor	9	No Connect
3	PD Anode (+)	10	Laser Anode (+)
4	PD Cathode (-)	11	Laser Cathode (-)
5	Thermistor	12	No Connect
6	No Connect	13	Ground
7	No Connect	14	TEC (-)

Table 1: Device Pin out



Device Dimensions

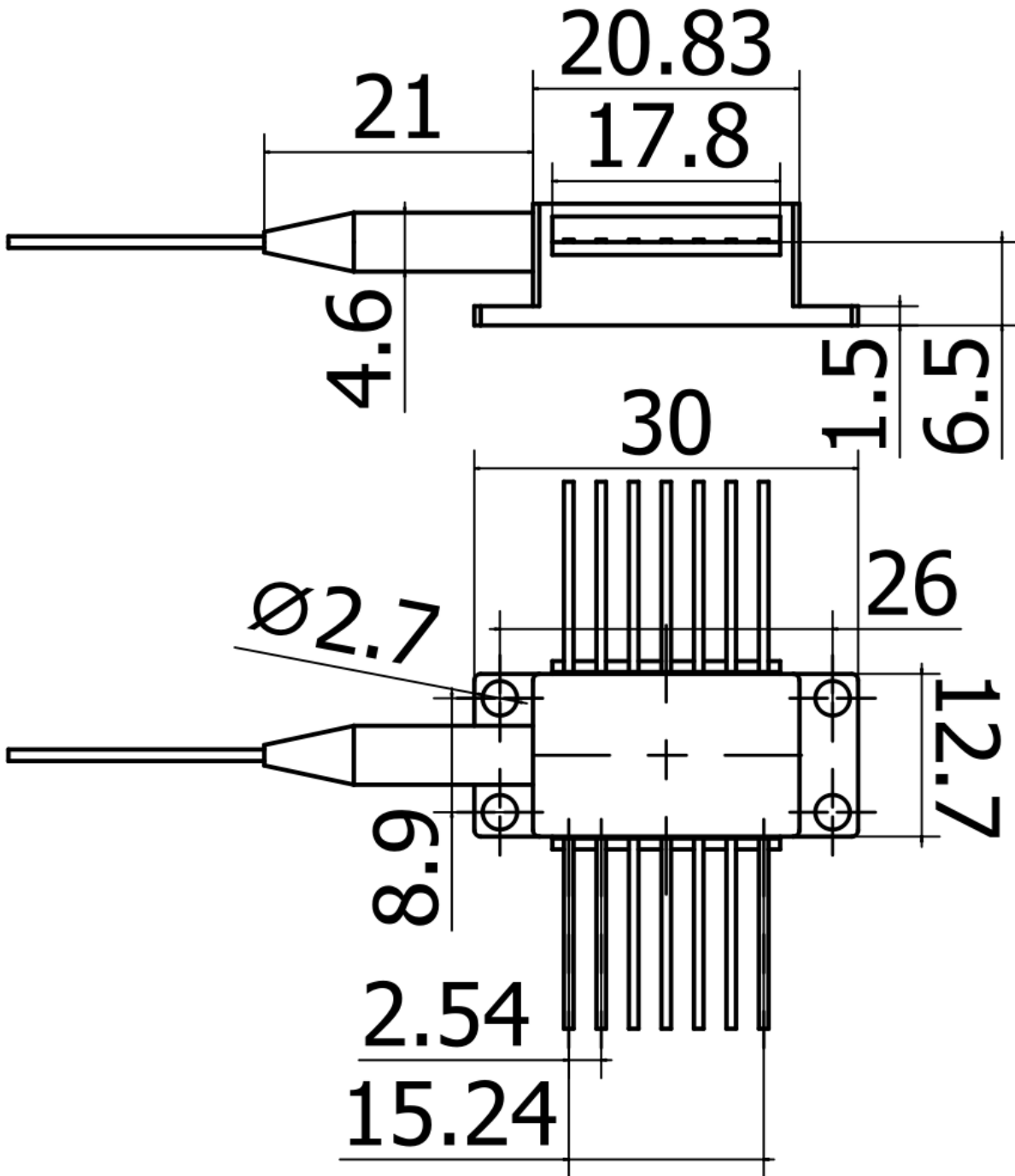
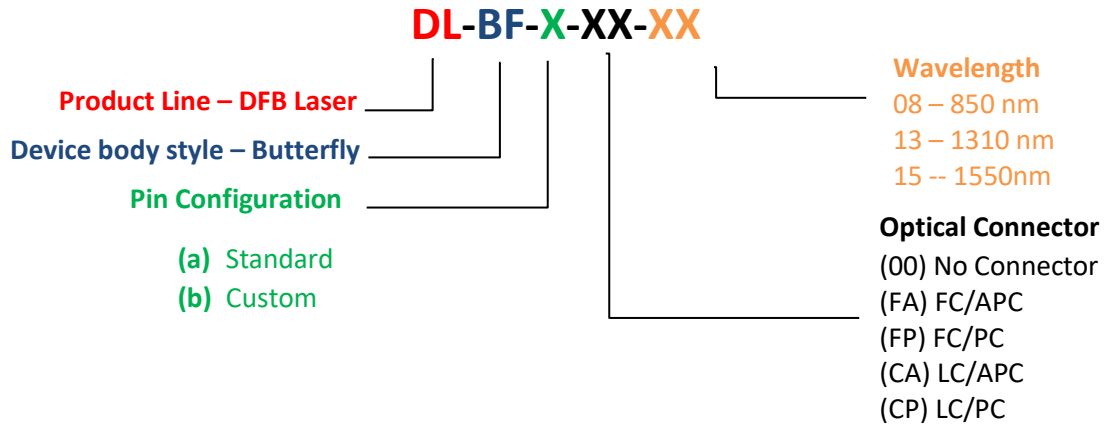


Fig 2: Device mechanical drawing. (All units in mm). Fiber and connector size differs based on build configuration.



Device Nomenclature



Inquiry Information

Sales: All inquiries regarding sales please contact Sales@NuPhotonics.com

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