



14 Pin DFB Butterfly Laser – ITU Grid

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.

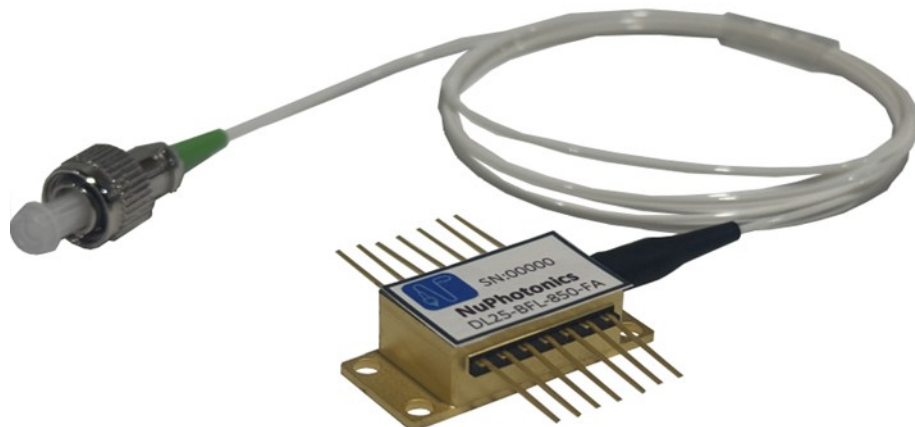
Features

- High output power 1 – 300 mW
- Built in monitor Photodiode
- 1 MHz, 500 KHz, 300 KHz, 100 KHz Linewidths available
- Available wavelengths
 - ITU Grid Spacing
- 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



IMPORTANT NOTICE: more information on warranty, changes, rights, notices, and other information are presented at the back of this data sheet. If the back sheet is not present, refer to www.nuphotonics.com for the company issued data sheet.

Electro-Optical Characteristics (Top 23 ± 3 σ , unless otherwise specified)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Forward Voltage	V_r	Laser	-	-	2	V
Forward Current	I_F	P_{cw} 10 mW	-	70	-	mA
Threshold Current	I_{th}	25°C	-	5	15	mA
Monitor Current	I_{mon}	10 mW	-	175	-	μ A
Reverse Current	I_R	Photodiode	-	-	2	mA
Optical power	P_{cw}	25°C	1	-	30	mW
Central Wavelength	λ_c	25°C	$\lambda_c-0.2$	λ_c	$\lambda_c+0.2$	nm
Side Mode Suppression Ratio	SMSR	25°C P 10 mW	-	48.3	-	dB
20 dB Bandwidth	$\Delta\lambda$	25°C	-	250	-	nm
Rise/Fall	T_r/T_f	10-90/90-10	-	2	-	ns
Tracking Error	E_r	25°C	-	1	-	dB

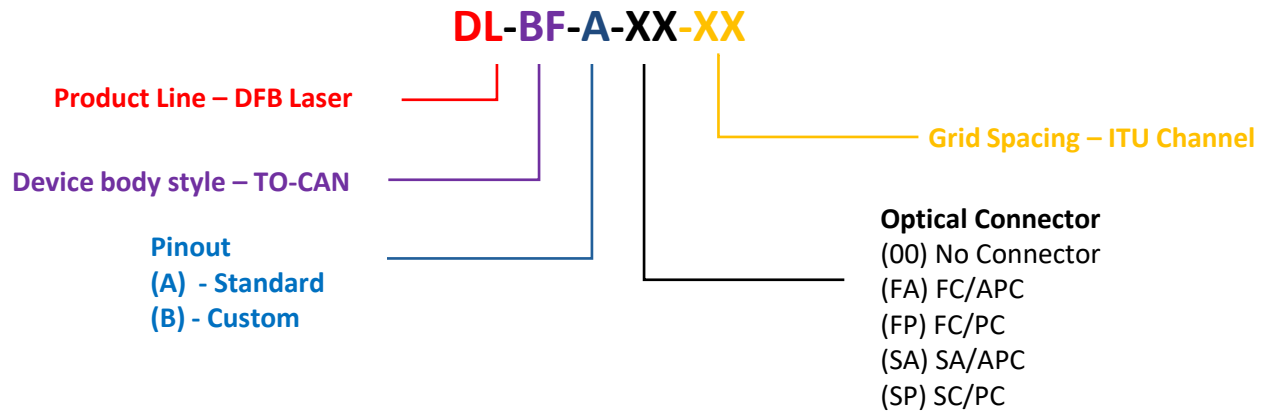
Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Voltage	V_r	Laser		2.4	V
		Photodiode		10	
Forward Current	I_F			150	mA
Reverse Current	I_R	Photodiode		2	mA
Optical Output power	P_{cw}			45	mW
Storage Temperature	T_{stg}		-25	90	°C
Storage Humidity	H_{stg}			85	% 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



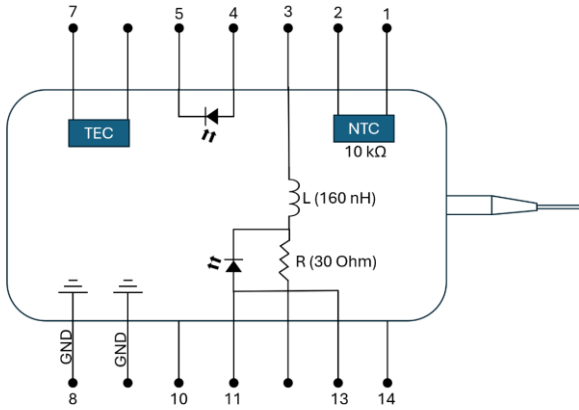
Example – DL-BF-A-FA-27

DFB Laser 14 Pin Butterfly Standard Pinout FC/APC Channel 27 (1555.75 nm / 192.27 THz)

Channel Number	Frequency (THz)	Wavelength (nm)	Channel Number	Frequency (THz)	Wavelength (nm)
18	191.8	1563.05	42	194.2	1543.73
19	191.9	1562.23	43	194.3	1542.94
20	192	1561.42	44	194.4	1542.14
21	192.1	1560.61	45	194.5	1541.35
22	192.2	1559.79	46	194.6	1540.56
23	192.3	1558.98	47	194.7	1539.77
24	192.4	1558.17	48	194.8	1538.98
25	192.5	1557.36	49	194.9	1538.19
26	192.6	1556.55	50	195	1537.4
27	192.7	1555.75	51	195.1	1536.61
28	192.8	1554.94	52	195.2	1535.82
29	192.9	1554.13	53	195.3	1535.04
30	193	1553.33	54	195.4	1534.25
31	193.1	1552.52	55	195.5	1533.47
32	193.2	1551.72	56	195.6	1532.68
33	193.3	1550.92	57	195.7	1531.9
34	193.4	1550.12	58	195.8	1531.12
35	193.5	1549.32	59	195.9	1530.33
36	193.6	1548.51	60	196	1529.55
37	193.7	1547.72	61	196.1	1528.77
38	193.8	1546.92	62	196.2	1527.99
39	193.9	1546.12	63	196.3	1527.22
40	194	1545.32	64	196.4	1526.44
41	194.1	1544.53			

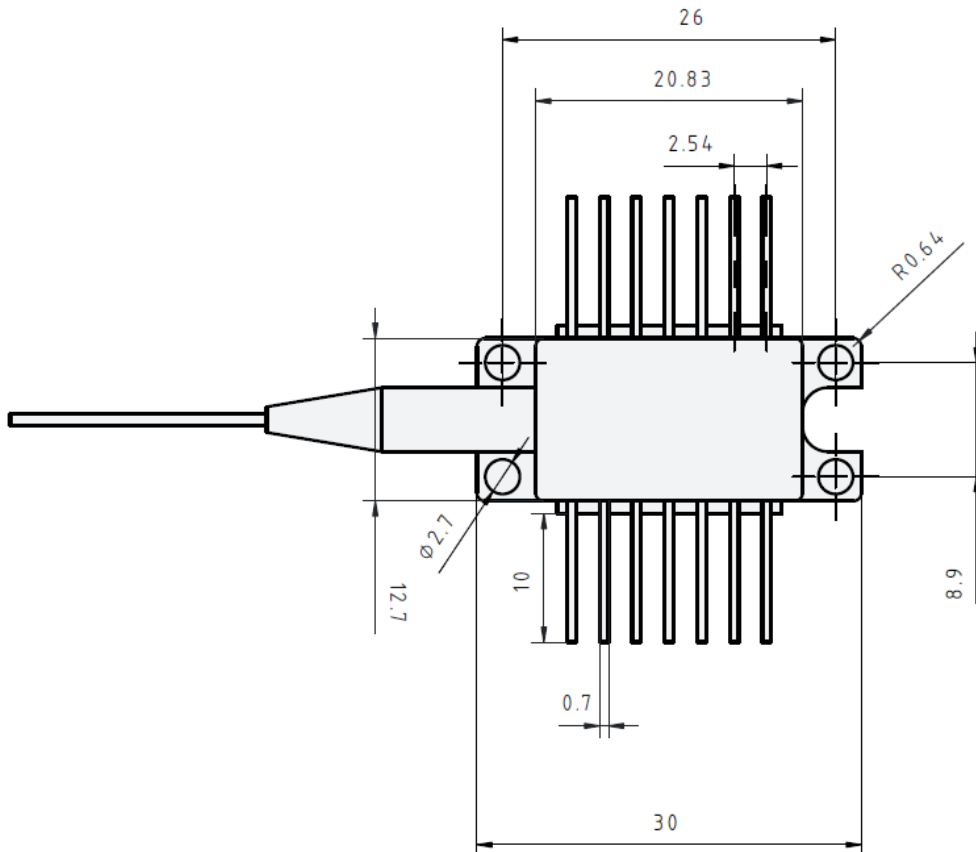
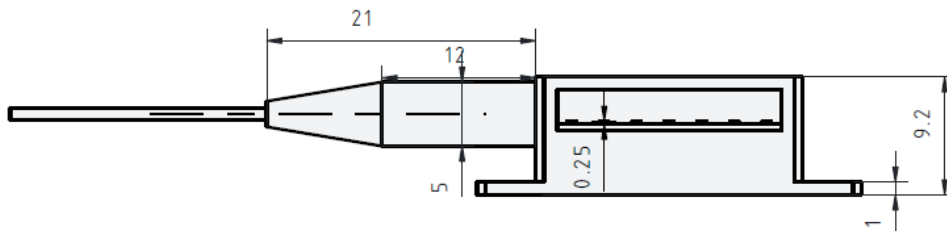


Pin Configuration



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

Mechanical Drawing



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Production Build – Device is released for production. Minor cosmetic or appearance variations may occur.

Obsolete – Device is no longer in production and is not supported.

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Revision History

1.1 – May 2026 – Initial release