

FEPL-808-400S-BTF
SINGLE MODE LASER DIODE
 Fabry-Perot Laser Diode 808nm 400mW

Product:

808nm Fabry-Perot Laser with hermetic Butterfly Package monitor Diode, thermoelectric cooler and thermistor with PM fiber and APC

Application:

pumping, communication, optical tweezer

Absolute Maximum Ratings

Operating Parameters	Symbol	Min	Typ	Max	Unit
Storage Temperature	T _S	-40		85	°C
Operating Temperature at Case	T _C	-20		75	°C
Operating Temperature at Chip	T _{LD}	10		40	°C
Forward Current	I _F			1.3	A
Reverse Voltage	V _R			2	V
Output Power	P _{opt}			500	mW
TEC current	I _{TEC}			1,5	A
TEC Voltage	V _{TEC}			5,5	V

Specifications

Optical and electrical characteristics at T_{LD} = 25°C, P = 400mW at begin of life:

Operating Parameters	Symbol	Min	Typ	Max	Unit
Center Wavelength	λ	804	808	812	nm
Spectral Width (FWHM)	Δλ		1	2	nm
Temp. Coefficient of Wavelength	Δλ/ΔT		0.28		nm/K
Threshold Current	I _{th}			0.15	A
Output Power @ I _F =1A	P _{opt}	400		450	mW
Polarization Extinction Ratio	PER		18		dB

Recommended Operational Conditions

Parameters	Symbol	Min	Typ	Max	Unit
Operating Temperature at Case	T_C	0		40	$^{\circ}\text{C}$
Operating Temperature at Chip	T_{LD}	15		35	$^{\circ}\text{C}$
Forward Current	I_F		0,8	1,2	A
Output Power	P_{opt}		400	450	mW

Monitor Diode ($V_{r\ md} = 5\text{V}$; $P = 800\text{mW}$)

Operating Parameters	Symbol	Min	Typ	Max	Unit
Monitor Detector Responsivity	I_{mon}	10	-	1000	μA
Reverse Voltage Monitor Diode	$V_{r\ md}$	3	-	5	V

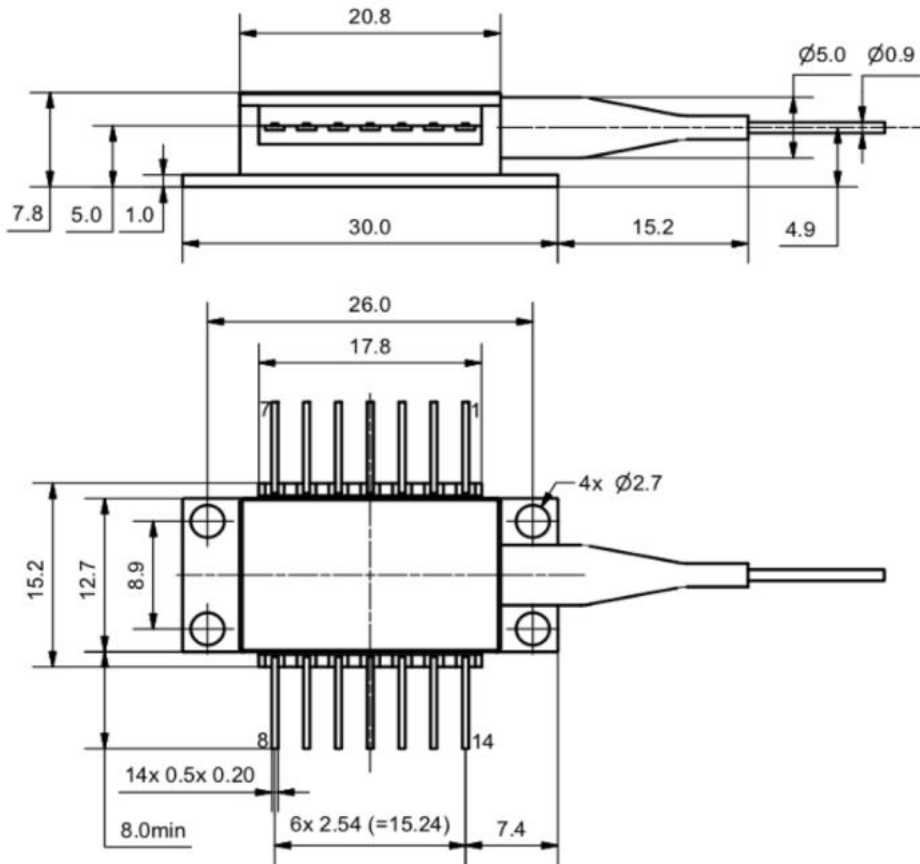
Thermistor (Standard NTC Type)

Operating Parameters	Symbol	Min	Typ	Max	Unit
Resistance	R		10	-	$\text{k}\Omega$
Beta Coefficient	β		3892		

Thermoelectric Cooler

Operating Parameters	Symbol	Min	Typ	Max	Unit
Current	I_{TEC}	0.3	0.9	1.5	A
Voltage	U_{TEC}	1.0	4.0	5.5	V
Power Dissipation (total loss case)	P_{loss}	1.8	2.1	2.5	W
Temperature Difference	ΔT		-	30	K

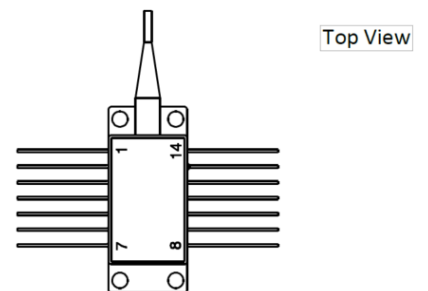
PACKAGE DRAWING



PACKAGE PIN-OUT

Pins are isolated from case unless noted otherwise

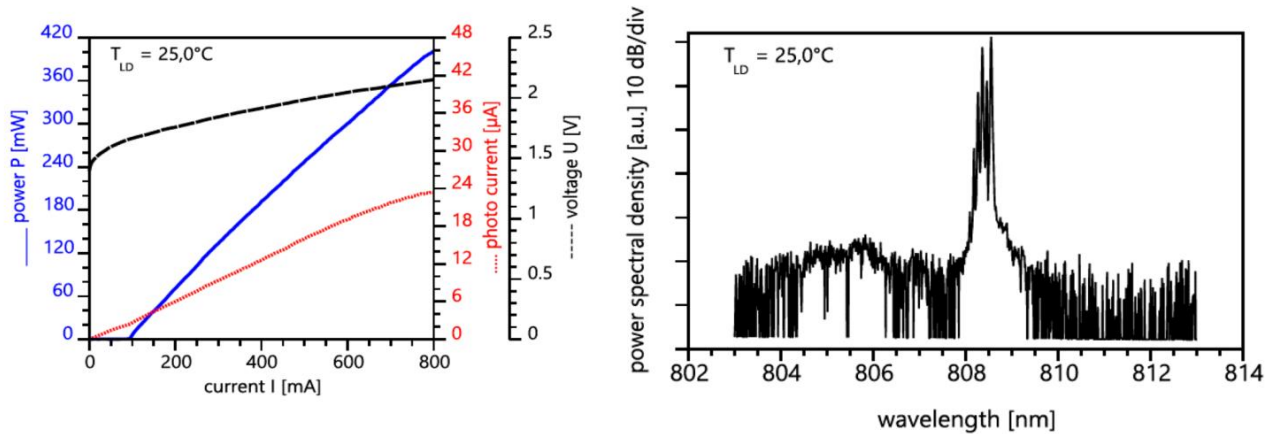
Pin	Function	Pin	Function
1	TEC (+)	14	TEC (-)
2	Thermistor	13	Case
3	Photodiode (Anode)	12	not connected
4	Photodiode (Cathode)	11	Laser Diode (Cathode)
5	Thermistor	10	Laser Diode (Anode)
6	not connected	9	not connected
7	not connected	8	not connected



Fiber and Connector Type

PM Fiber 900 / 125 / 5.5 μ m, UV/Polyester-elastomer coating (l=1m \pm 0,1m)
 Connector FC/APC (narrow key / 2mm)

Typical Measurement Results



Performance figures, data and any illustrative material provided in this specification are typical and must be specifically confirmed in writing by FLC before they become applicable to any particular order or contract. In accordance with the FLC policy of continuous improvement specifications may change without notice.

Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.



Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.



Each laser diode will come with an individual test protocol verifying the parameters given in this document.