

BW10-1550-T-PxFA



BANDWIDTH10, LTD.

Description:

Bandwidth10's BW10-1550-T-PxFA is part of a family of lasers based on the innovative High Contrast Grating (HCG) single mode 1550 nm VCSEL.

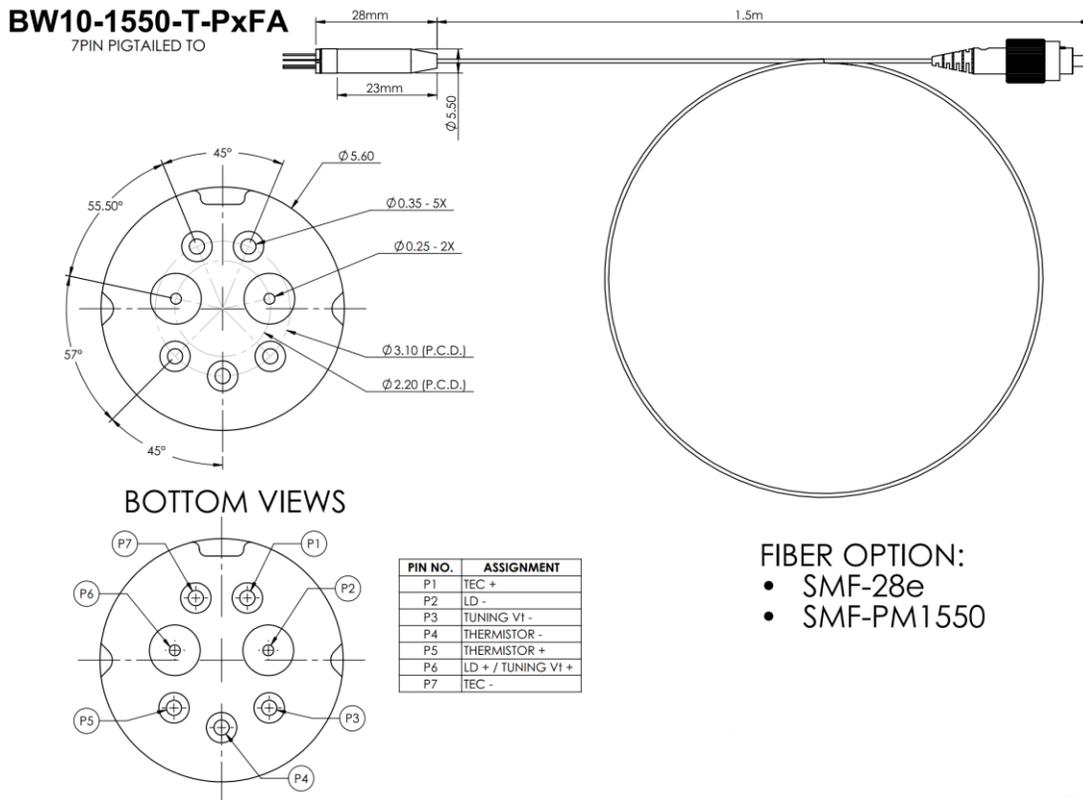
Applications:

- Optical communications
- Swept source
- Optical gas sensing
- LIDAR

Features:

- TO-56 7Pin Small Form Footprint with integrated TEC
- Single Mode VCSEL
- Permanently attached 1.5 m single mode fiber (SMF or 1550 Panda) with FC/APC connector
- Center wavelength can be within several bands through the C and L band.
- Wide Tuning Range: > 8 nm
- High modulation bandwidth (10 Gbps)
- Fast Wavelength Tuning (~100 kHz)
- Internal optical isolator with isolation ratio >20 dB

Dimensional Drawing and Pin Assignment



CAUTION: Device is sensitive to electrostatic discharge.

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Storage Temperature	T _{stg}	-20 to +85	°C
Operating Case Temperature	T _c	-5 to +70	°C
Forward Current of VCSEL	I _{LD}	25	mA
Reverse Voltage of VCSEL	V _{LD}	3	V
Soldering Temperature	T _{sld}	350 (10 sec.)	°C

General Specification and Operating Table

Parameter	Symbol	Values			Unit
		Min	Typical	Max	
Optical Output Peak Power @25° C TEC temperature over tuning range	P	-4	0	3	dBm
Operating Bias Current	I _{op}	0	Test Sheet	Test Sheet	mA
Operating TEC Temperature range	T _{op}	5	20	35	°C
Threshold Current	I _{th}		7	12	mA
Laser Drive Voltage	V _{cc}	0	1.5	2.5	V
Resistance	R _s		50		Ω
Center Wavelength Please specify desired center wavelength in the purchase order	λ	1525		1575	nm
Guaranteed Tuning Range	Δλ	8	10	-	nm
Max. Mechanical Tuning Response	f _{max}	100	200	-	kHz
Side-mode suppression ratio	SMSR	30	40		dB
Polarization Extinction Ratio for PM fiber version (BW10-155-T-PPyA)	PER	20			dB
Linewidth (-3 dB FWHM), CW I _{bias} =I _{op}	σ			300	MHz
Relative Intensity Noise	RIN			-128	dB/Hz
Tuning Voltage	V _{tune}	0	Test Sheet	Test Sheet	V
Tuning Current	I _{tune}	0	-	100	μA
TEC Voltage	V _{TEC}		0.35	1.5	V
TEC Current	I _{TEC}		0.05	0.55	A

Electrostatic Discharge (ESD)

LD+/LD- ESD classification: Class 1A, Human Body Model (HBM).
Vt- ESD classification: Class 0, Human Body Model (HBM).
Since this is an ESD sensitive device, proper ESD precautions (limit exposure to below 100V HBM) should be taken during every step of the assembly process.

Standard ESD testing was to MIL-STD-883, Human Body Model, with 3 pulses forward/reverse applied to the signal leads. Failure is defined as a measurable (>10%) change in a key parameter, optical output power for the tunable VCSEL. The LD+/LD- and Vt- of VCSEL TO fails at 350 Volts and <50 Volts respectively for damage to the laser chip, with a decrease in optical power output.

Order and Contact Information

Model Number	Contact Information
<p style="text-align: center;">BW10-1550-T-PSFA</p> <p style="text-align: center;">pigtailed TO with 1.5m 900µm SMF28 fiber and FC/APC connector</p> <p style="text-align: center;">BW10-1550-T-PPFA</p> <p style="text-align: center;">pigtailed TO with 1.5m 900µm PM1550 polarization maintaining PANDA fiber. The narrow key FC/APC connector and output signal are aligned to the slow axis.</p> <p>Please specify center wavelength in the purchase order</p>	<p style="text-align: center;">Bandwidth 10 Ltd. 2080 Addison Street, Suite 2 Berkeley, CA 94704, USA</p> <p style="text-align: center;">info@bandwidth10.com</p>