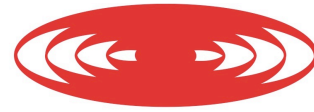


BW10-1550-T-T7



BANDWIDTH10, LTD.

Description:

Bandwidth10's BW10-1550-T-T7 is part of a family of lasers based on the innovative High Contrast Grating (HCG) single mode 1550 nm VCSEL.

Applications:

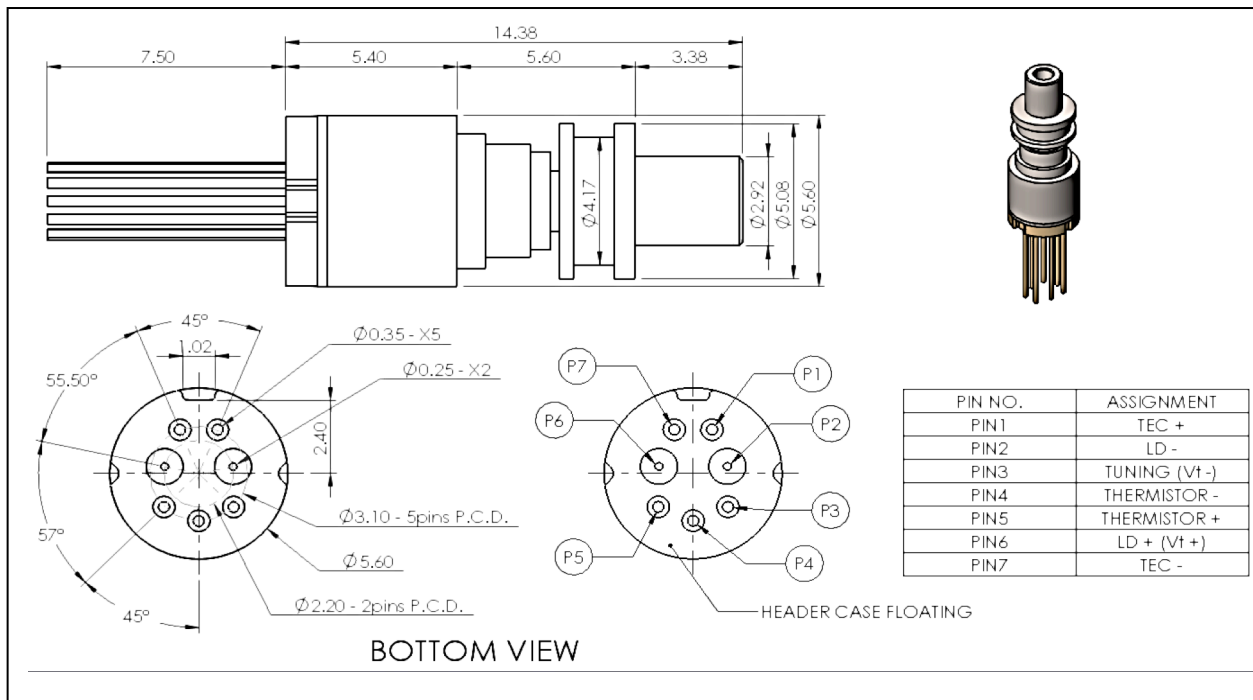
- Optical communications
- Swept source
- Optical gas sensing
- LIDAR

- CW Optical Output Power: Typical 1mW (@20°C TEC Temperature)
- Single Mode VCSEL (~1550 nm)
- Center wavelength can be within several bands through the C and L band.
- Wide Tuning Range: >10 nm
- High modulation bandwidth (10.3125 Gbps)
- Fast Wavelength Tuning (~100 kHz)
- Power Dissipation: < 40mW (not including TEC)
- Internal optical isolator with isolation ratio >20 dB

Features:

- TO-56 7Pin Small Form Footprint
- LC Fiber Connector (1.25mm Fiber)
- Integrated TEC (Temperature Stabilization)

Dimensional Drawing and Pin Assignment



CAUTION: Device is sensitive to electrostatic discharge.

Absolute Maximum Ratings

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

General Specification and Operating Table

Parameter		Symbol	Values			Unit
			Min	Typical	Max	
Optical Output Peak Power @25° C		P	-6	0	1.5	dBm
Operating Bias Current		I _{op}	0	17	25	mA
Operating Temperature range		T _{op}	-5	20	70	°C
Threshold Current		I _{th}		7	10	mA
Laser Drive Voltage		V _{cc}	0	1.5	2.5	V
Resistance		R _s		50		Ω
Tuning Range (P> 250μW)		Δλ	8	10	-	nm
Initial Center Wavelength (at V _{tune} = 0V)	Group-70	λ ₀	1565	1570	1575	nm
	Group-60		1555	1560	1565	
	Group-50		1545	1550	1555	
	Group-40		1535	1540	1545	
	Group-30		1525	1530	1535	
Max. Mechanical Tuning Response		f _{max}	100	200	-	kHz
Side-mode suppression ratio		SMSR	30	40		dB
Linewidth (-3 dB FWHM), CW I _{bias} =I _{op}		σ			0.08	nm
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	0.6	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 TOSA 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

Module Number	Contact Information	Unit
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