

VCSEL-1544-T-SM



Tunable VCSEL 1544 nm, Single Mode with built-in TEC

OVERVIEW

The Optilab VCSEL-1544-T-SM is a wavelength tunable Vertical Cavity Surface Emitting Laser (VCSEL) diode. Utilizing a MEMS based tuning capacity, its peak wavelength can be tuned over 10 nm at 100 kHz. VCSEL-1544-T-SM is designed for fiber sensing, laser transmitter and optical communication applications. It also integrates an internal TEC and optical isolator for stable single mode output. Contact Optilab for more information.

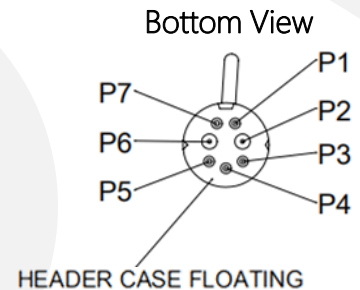
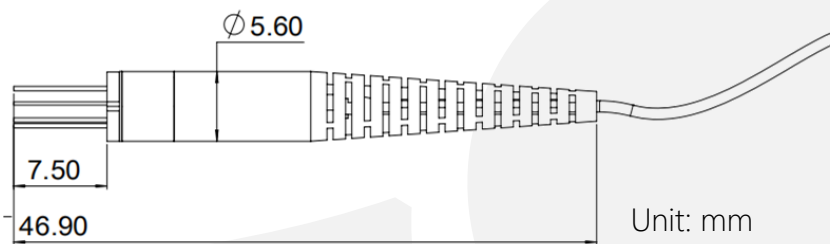
FEATURES

- 10 nm Wavelength Tuning Range
- 100 kHz Wavelength Turning Speed
- Mode Hopping Free Tuning
- Integrated TEC and Optical Isolator
- Single Mode Output
- 0.6 mW CW Output Power
- Small Footprint (TO-56)
- 10 Gb/s Direct Modulation

USE IN

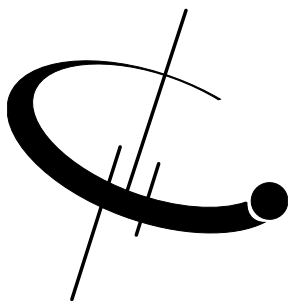
- OCT Imaging
- 1544nm Optical Communications
- RFoF
- FBG Sensing
- LIDAR

MECHANICAL DRAWING & PIN OUT



PIN No.	PIN1	PIN2	PIN3	PIN4	PIN5	PIN6	PIN7
ASSIGNMENT	TEC +	LD -	TIUNING (Vt -)	THERMI STOR	THERMI STOR	LD + / Vt +	TEC -





VCSEL-1544-T-SM

SPECIFICATIONS

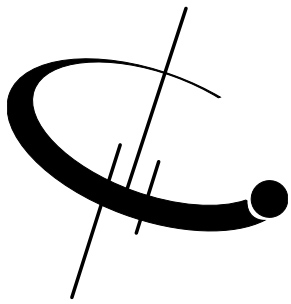
GENERAL

Output Wavelength	1537 ~ 1544 nm; ± 2 nm
Output Power	0.6 mW typ.
Side Mode Suppression Ratio	40 dB typ.
Laser Linewidth	300 MHz typ.
Relative Intensity Noise	-127 dB/Hz
LD Threshold Current	7 mA
LD Operation Current	18 mA
RF Bandwidth (S21)	8.5 GHz
Electrical Return Loss (S22)	-5 dB
RF Input Impedance	50 Ω
Wavelength Tuning Voltage	18 V max.
Wavelength Tuning Current	100 μ A
Wavelength Tuning Speed	100 kHz
Wavelength Tuning Range	7 ~ 8 nm
Thermistor	10 k Ω

ABSOLUTE MAXIMUM RATINGS

Operation Temperature	0 $^{\circ}$ C ~ 70 $^{\circ}$ C
Storage Temperature	-20 $^{\circ}$ C ~ 85 $^{\circ}$ C
Soldering Temperature	350 $^{\circ}$ C
LD Forward Current	25 mA
LD Forward Voltage	2.5 V
Tuning Voltage	20 V
Tuning Current	0.1 mA
TEC Voltage	1.5 V
TEV Current	0.8 A

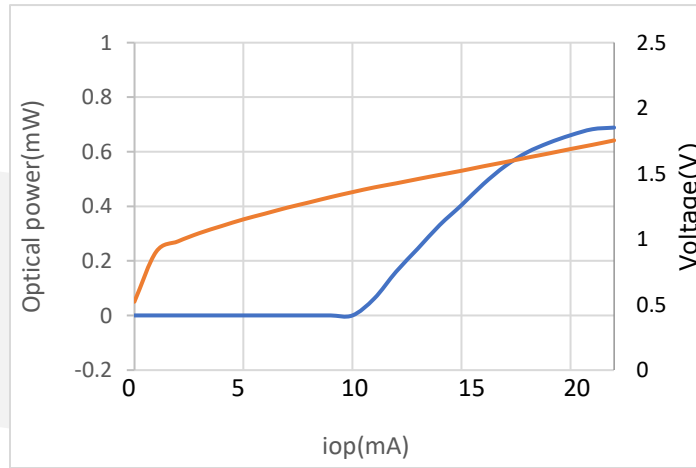




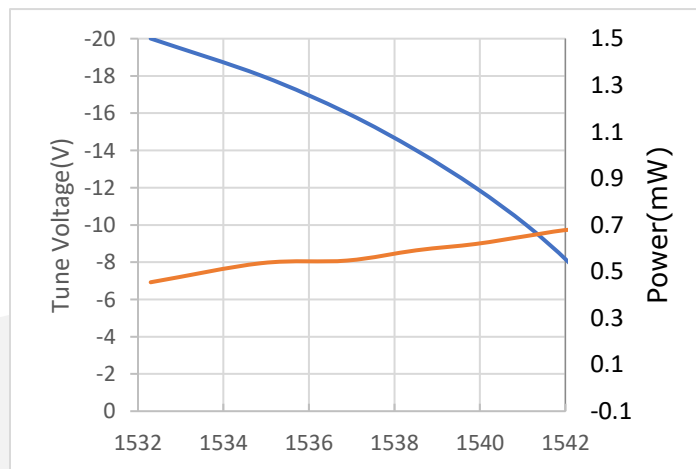
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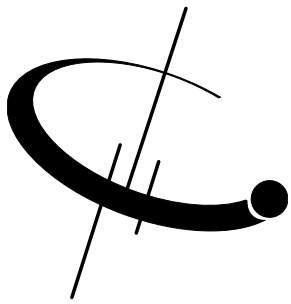
TEST REPORT

L-I-V Curve



Wavelength Tuning Curve





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RELATED EVALUATION BOARD

- **VCSEL-T-EVAL**



Optilab VCSEL-T-EVAL is an evaluation board designed for ease of testing. It provides convenient access to all 7pins and data output ports.

- **SWL-15XX-MC**



Optilab SWL-15XX-MC is a low cost Swept Wavelength Laser module. It features fast continuous sweeping of 100kHz within 10nm range.

- **VCSEL-1550-SM**



Optilab VCSEL-1550-SM is a packaged in compact coaxial housing with single mode fiber pigtail. It requires very low drive current and features built-in TEC.

