

## 850nm VCSEL 1.25G Laser Diode With LC TOSA

Data Sheet

OLD2304-M1-LTO

### Features

- Uncooled
- Type B laser
- Low threshold current
- Power Output: 0.5 mW
- 850nm VCSEL laser diode
- High speed monitoring PIN photodiode
- Pre-aligned LC type receptacle for multimode fiber communication
- Operating Temperature: 0 ~ +70°C

### Applications

- Digital Signal Transmission
- Telecommunications (Local loop, interoffice and intraoffice)
- Data Communications
- SONET OC-3, OC-12, OC-24/SDH STM-1, STM-4, STM-8
- Gigabit Ethernet

### Description

The OLD2304-M1-LTO is a hermetically sealed VCSEL laser diode module in a small TOSA type package, including a high speed PIN monitor photodiode and packaged with a pre-aligned LC TOSA for multimode fiber communication.

The laser diode is designed for use in data communications systems and telecommunications systems over multimode fiber, and can operate in temperatures of 0°C to +70°C. The laser diode module transmits emission power to the monitor photodiode in the rear, which ensures highly stable emission at a wavelength of 850nm.

**Safety**

Radiation emitted by laser diode devices can be dangerous to the eyes. Avoid direct or scattered radiation exposure to the eyes or skin. Device contains gallium arsenide (GaAs) which can be hazardous to your health. Please embrace all customary precautions and discretion while handling this device. Observe governmental laws and regulations when discarding this device.

**Performance Specifications**

**Absolute Maximum Ratings**

Stresses in excess of the absolute maximum ratings can cause damage to the optical device. Operations of the optical device are suggested to remain within the recommended operating conditions. Exposure to the absolute maximum ratings for extended periods can adversely affect device reliability.

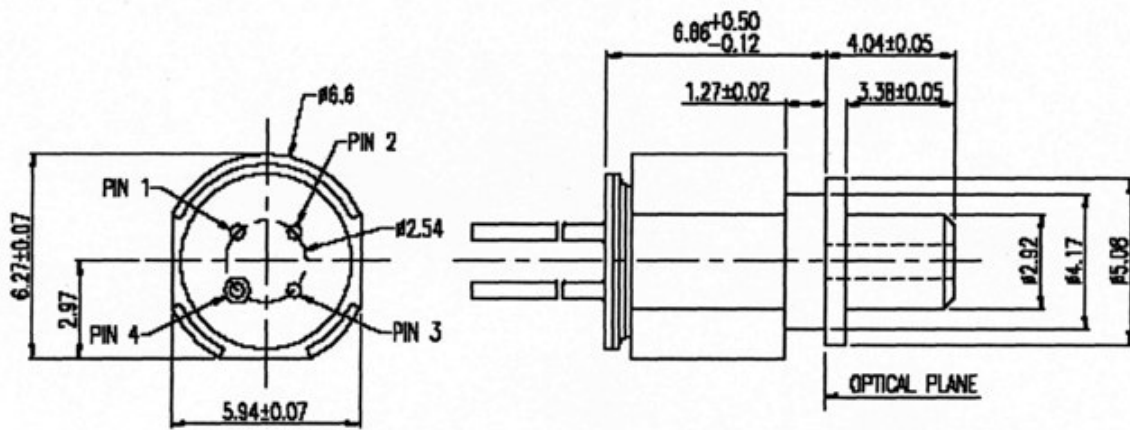
Parameter	Symbol	Value	Unit
Storage Temperature	Tstg	-40 to +85	°C
Operating Case Temperature	Top	0 to +70	°C
Peak Optical Output Power	Po	5	mW
Forward Current (LD)	I <sub>FLD</sub>	20	mA
Reverse Voltage (LD)	V <sub>RLD</sub>	5	V
Soldering Temperature	Stemp	260	°C
Soldering Time	Stime	10	sec

**Electrical and Optical Characteristics (T<sub>c</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Threshold Current	I <sub>th</sub>		-	2	3.5	mA
Slope Efficiency	η	I <sub>f</sub> =6mA	0.15	-	0.6	mW/mA
Central Wavelength	λ <sub>c</sub>	CW, I <sub>f</sub> =6mA	830	850	860	nm
Spectral Width, RMS	Δλ	CW, I <sub>f</sub> =6mA	-	-	0.85	nm
Relative Intensity Noise	RIN		-	-	-122	dB/Hz
Rise Time/Fall Time	T <sub>r</sub> /T <sub>f</sub>	I <sub>b</sub> =I <sub>th</sub> , 20%-80%	-	150/200	-	ps
Forward Voltage	V <sub>F</sub>	I <sub>f</sub> =6mA	1.7	1.9	2.2	V
Breakdown Voltage	V <sub>BD</sub>	I <sub>R</sub> =10μA	5	14	-	V
Series Resistance	R <sub>S</sub>	I <sub>f</sub> =6mA	30	45	65	Ohm
Monitor Current	I <sub>M</sub>		-	50	-	μA

### Package Outline Diagram

Dimensions for the device package are given in millimeters.



PIN 1 : VCSEL Cathode
PIN 2 : VCSEL Anode/ PD Cathode
PIN 3 : PD Anode
PIN 4 : Case

### Additional Information

#### Contact

For additional information, product specifications, or information about Optocom:

Internet: <http://www.optocom.com>

Email: [sales@optocom.com](mailto:sales@optocom.com)

Tel: +1 978 988 8711

Fax: +1 978 988 8722

©2005 Optocom Corporation. All rights reserved. Information in this document is believed to be accurate and reliable and is subject to change without notice. Optocom Corporation will not be held liable for technical or editorial errors or omissions contained herein. Reproduction in whole or in part is prohibited without prior written consent of the copyright owner and no responsibility will be assumed by Optocom Corporation for any infringements of third parties. All other brand or product names mentioned are the trademarks or registered trademarks owned by their respective companies or organizations.