

# LAN-WDM laser Diodes Datasheet

## 1. Product information

**Part Number:** SWLD-1XXX10S22-11

**Product Description:** LAN-WDM laser diodes are 1286.66nm、1291.10nm、1295.56nm、1300.05nm、1304.58nm、1309.14nm Multiple Quantum Well (MQW) structured distributed-feedback(DFB) laser modules. The laser diodes are fabricated in a hermetic sealed 14-pin butterfly package, which contain thermoelectric cooler (TEC), thermistor, monitor PD and optical isolator to secure high quality laser performance. We also have full customer selection of output powers, package types and output fibers of SM fibers, PM fibers and other special fibers. Our laser products are Telcordia GR-468 qualified, and in compliance with RoHS directives.

### Applications:

- LAN, WAN and metro networks
- Fiberoptic sensors
- Laser sources
- Data Center

### Features:

- High output power(10~20mW)
- High-performance, multi-quantum well (MQW) distributed-feedback (DFB) laser
- Industry-standard, 14-pin butterfly package
- Built-in TEC and optical isolator
- ITU wavelengths of LAN WDM

**Reliability:** Telcordia GR-468. RoHS



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## 2. Revision History

Rev.	Notes	Prepared by	Audited by	Approved by	Date
V0	Initial release	QiDu	YY Bai	Simon Mei	2018-10-27

## 3. Performance Specifications

### Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Storage temperature	T <sub>s</sub>	-	-40	-	85	°C
Operating case temperature	T <sub>op</sub>	-	-20	-	70	°C
Forward Current	I <sub>F</sub>	CW	-	-	400	mA
Laser Reverse Voltage	V <sub>LR</sub>	-	-	-	2	V
PD Forward Current	I <sub>FPD</sub>	-	-	1.1	5	mA
PD Reverse Voltage	V <sub>RPD</sub>	-	-	5	10	V
TEC current	I <sub>TEC</sub>	-	-	0.8	1.5	A
TEC voltage	V <sub>TEC</sub>	-	-	1.5	3.5	V

**Optical Characteristics (at 25 °C laser temperature)**

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	$\lambda_1$	TL=20~30°C CW	1286.16	1286.66	1287.16	nm
Center Wavelength	$\lambda_2$	TL=20~30°C CW	1290.60	1291.10	1291.60	nm
Center Wavelength	$\Lambda_3$	TL=20~30°C CW	1295.06	1295.56	1296.06	nm
Center Wavelength	$\Lambda_4$	TL=20~30°C CW	1299.55	1300.05	1300.55	nm
Center Wavelength	$\Lambda_5$	TL=20~30°C CW	1304.08	1304.58	1305.08	nm
Center Wavelength	$\Lambda_6$	TL=20~30°C CW	1308.64	1309.14	1309.64	nm
Peak Optical Output Power	P <sub>O</sub>	-	10	-	20	mW
Spectral linewidth	LW	Full width, half maximum (FWHM)	-	3	-	MHz
Bandwidth (@-3dB)	BW	-	-	2.5	-	GHz
Side-mode Suppression Ratio	SMSR	CW	35	40	-	dB
Optical Isolation	-	-10 < TC < +70 °C	30	-	-	dB
Relative Intensity Noise	RIN	CW, output power 5mW	-	-145	-	dB
Wavelength Drift (EOL)	$\Delta\lambda$	Tested over 25-year lifetime	-	-	±0.1	nm
Wavelength Temperature coefficient	$\Delta\lambda/\Delta T$	TEC temperature at 15°C to 35°C	-	0.11	-	nm/°C
Wavelength Current coefficient	$\Delta\lambda/\Delta I$	-	-	0.03	-	nm/mA

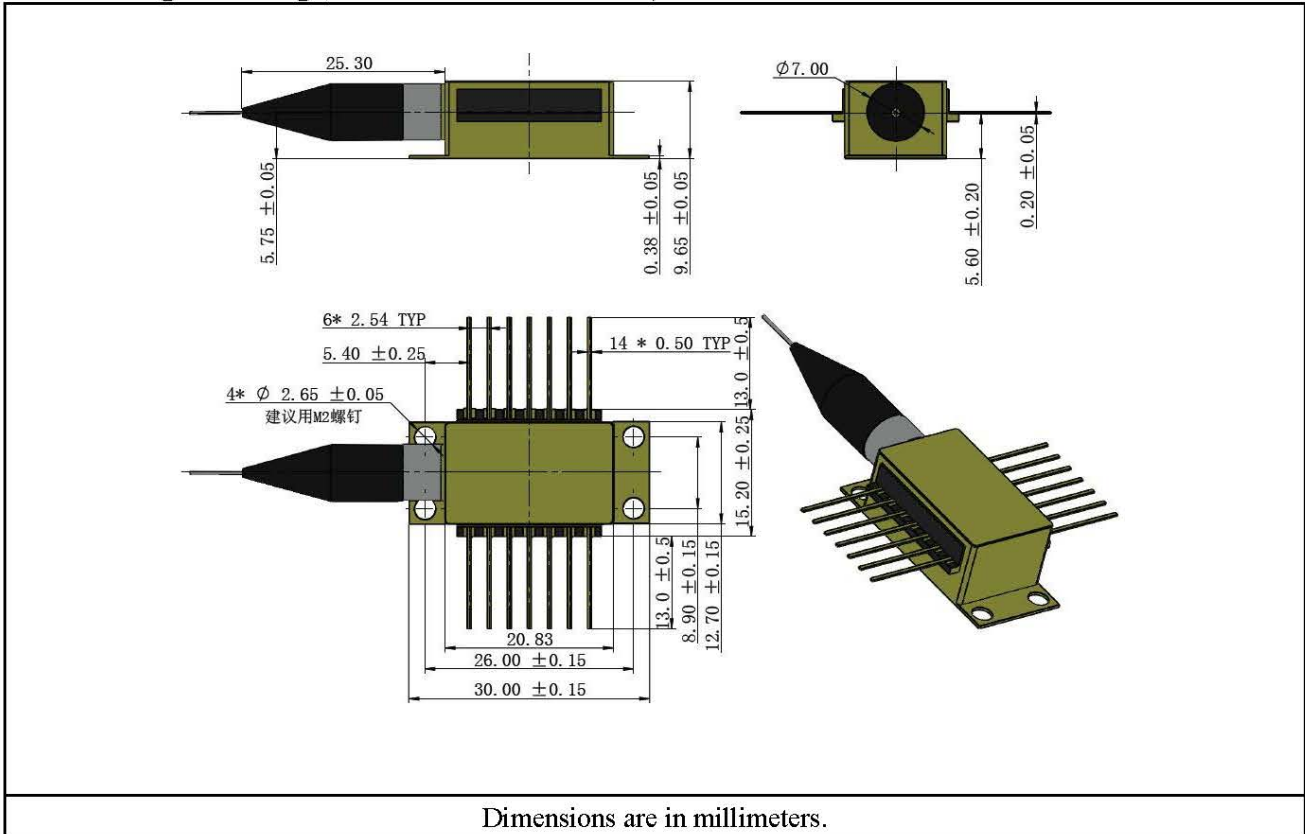
**Electrical Characteristics (at 25 °C laser temperature)**

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	I <sub>TH</sub>	-	-	10	35	mA
Slope Efficiency	$\eta$	CW output power 5 mW	0.05	0.11	0.2	mW/mA
Operating current	I <sub>op</sub>	P <sub>O</sub> = 10 mW (CW)	-	100	200	mA
TEC set temperature	T <sub>S</sub>	-	15	-	35	°C
Laser Forward Voltage	V <sub>F</sub>	CW output power 10 mW	-	1.2	3.0	V
Monitor Dark Current	I <sub>D</sub>	-	-	-	0.1	μA
Input Impedance	Z <sub>IN</sub>	-	22	25	28	Ω
Thermistor Current	I <sub>TC</sub>	-	10	-	100	μA
Thermistor Resistance	R <sub>TH</sub>	T <sub>L</sub> = 25 °C	9.5	10	10.5	KΩ
TEC Current	I <sub>TEC</sub>	TL = 25 °C, TC = 70 °C	-	-	1.5	A
TEC Voltage	V <sub>TEC</sub>	TL = 25 °C, TC = 70 °C	-	-	3.0	V
TEC capacity	$\Delta T$	T <sub>c</sub> = 70°C	-	-	50	°C
Thermistor temperature	-	-	-	-	100	°C

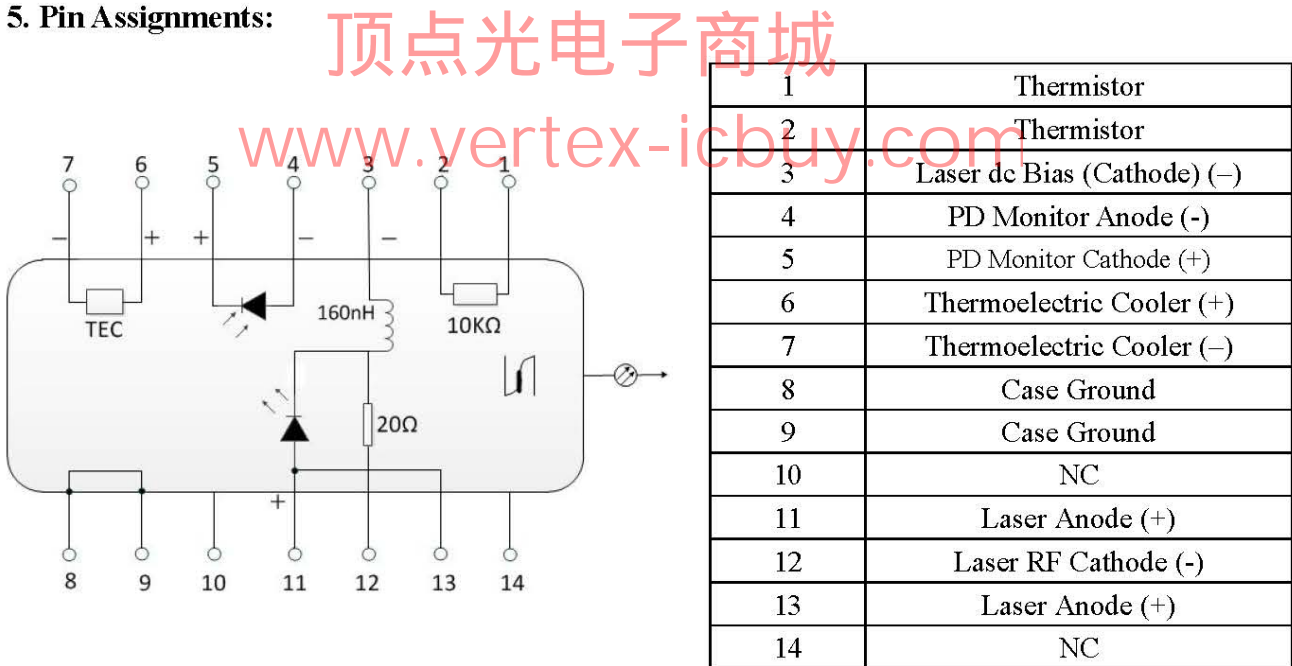
**Fiber Pigtail Specifications**

Parameters	Description
Fiber Type	SM fiber
Jacket Type	900μm loose tube
Pigtail Length	1.0 ± 0.1m
Connector Type	FC/APC

#### 4. Package drawing (Mechanical Dimensions):



#### 5. Pin Assignments:



**6. Test Report:** The test report should be provided when the products are delivered. Following characteristic test data should be included: -Optical Output Power, Center Wavelength, P-I curve, Pin Assignments.

**7. Packaging:** Vacuumize anti-static plastic package. Following items should be indicated on the outer packaging surface:

- Product Name
- Product Number
- Serial Number

End