

Microwave DFB laser

Product Features

- High-Dynamic-Range
- 10 MHz to 18 GHz Bandwidth
- Low threshold current
- High output power
- 7pin butterfly package with SMA connector
- Operating case temperature: -40 to 85 °C
- High reliability



Product Applications

- Antenna Remoting
- Cellular and PCS Networks
- Military Communications
- Tracking, Telemetry, and Control

Microwave Distributed Feedback (DFB) Laser provides exceptional performance for linear fiber optics communications in very wide bandwidth applications. ML1001 linear fiber optic lasers are an excellent alternative to using coaxial cable systems to transmit 10 MHz to 18 GHz signals. They offer significant improvements in reliability of microwave communications networks by transmitting the RF signal in its original format. As a result of these properties, laser products provides significant improvements in signal quality for a wide variety of applications including antenna remoting, telemetry, timing and reference signal distribution, measurement and delay lines

Performance Specifications

Absolute Maximum Ratings				
Parameter	Symbol	Min.	Max.	Unit
Laser diode forward current	If		100	mA
Laser diode reverse voltage	V		1	V
Front power	Pf		20	dBm
PD reverse voltage	V		15	V
Forward current (PD)	Im		2	mA
Operation temperature	To	-40	+85	°C
Storage temperature	Ts	-40	+85	°C
Storage relative humidity	Sr		85	%

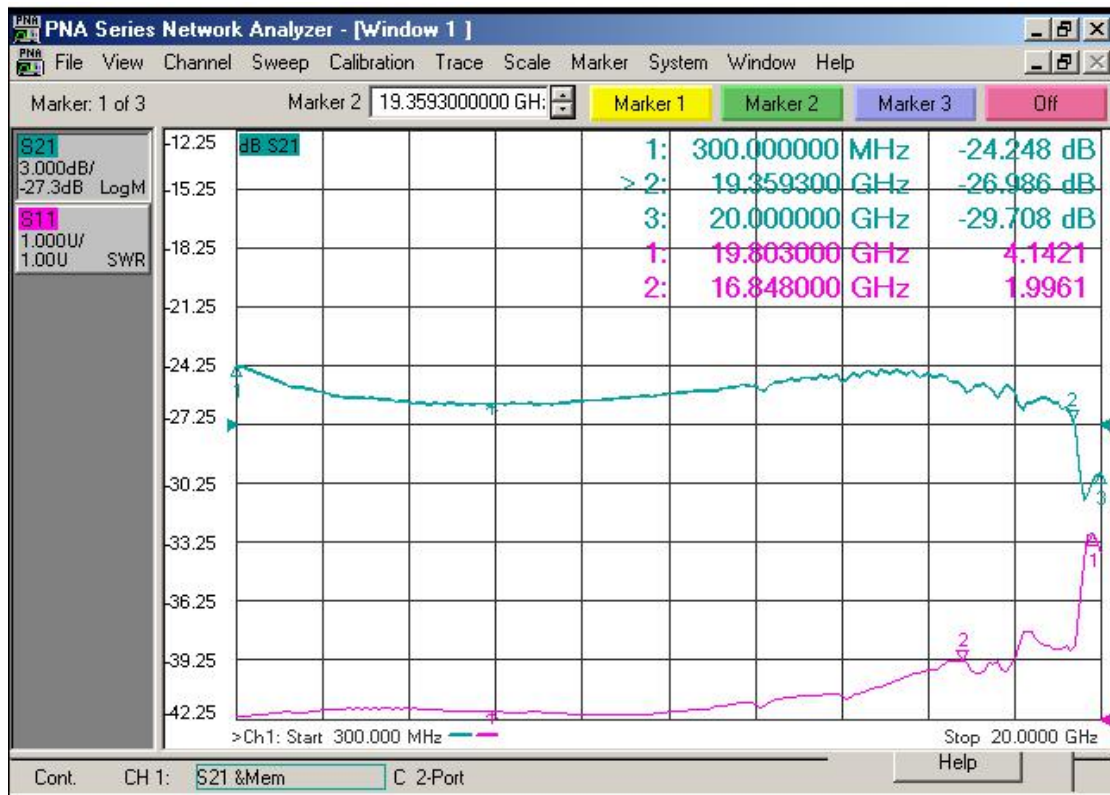
Optical and Electrical Specification (Tc=25°C)						
Parameter	Symbol	Min	Typ	Max	Units	Note
Optical Output Power	P		8		dBm	1
Thershold current	Ith		10		mA	-
Operation current	Iop		55	100	mA	
Operation voltage	Vop		1.5	2.5	V	-
Peak wavelength	λ	-	1550.12	-	nm	DWDM
Slope efficiency	SE	0.2			W/A	
Side-mode suppression ratio	SMSR	30			dB	
Rative Intensity Noise	RIN		-150	-130	dB/Hz	
Bandwidth (-3dB,I=60mA)	S21		18		Ghz	-
Return loss	S11		-10	-6	dB	
Input 1 dB Compression			18		dBm	
Thermistor Resistance	Rth		10		Kohm	@25C
TEC current	It			1.2	A	2
TEC voltage	Vt			2.5	V	2
Capacitance (PD)	Ct			20	pF	
Monitoring current	Im	0.04		2.0	mA	
Dark current (PD)	Id			50	nA	
Capacitance (PD)	Ct			20	pF	

Notes: All laser chips come from wafers that have been certified using a representative lot of devices that must achieve an acceptable yield for burn-in.

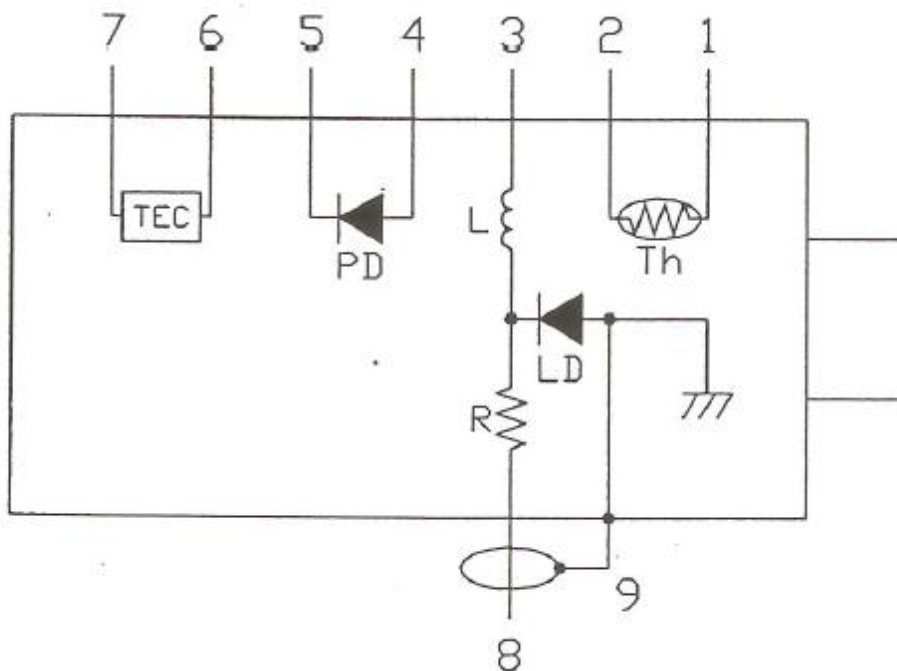
1, Laser temperature set 25C, bias current at 55mA

2, Operation case temperature -5~70C

Typical Data

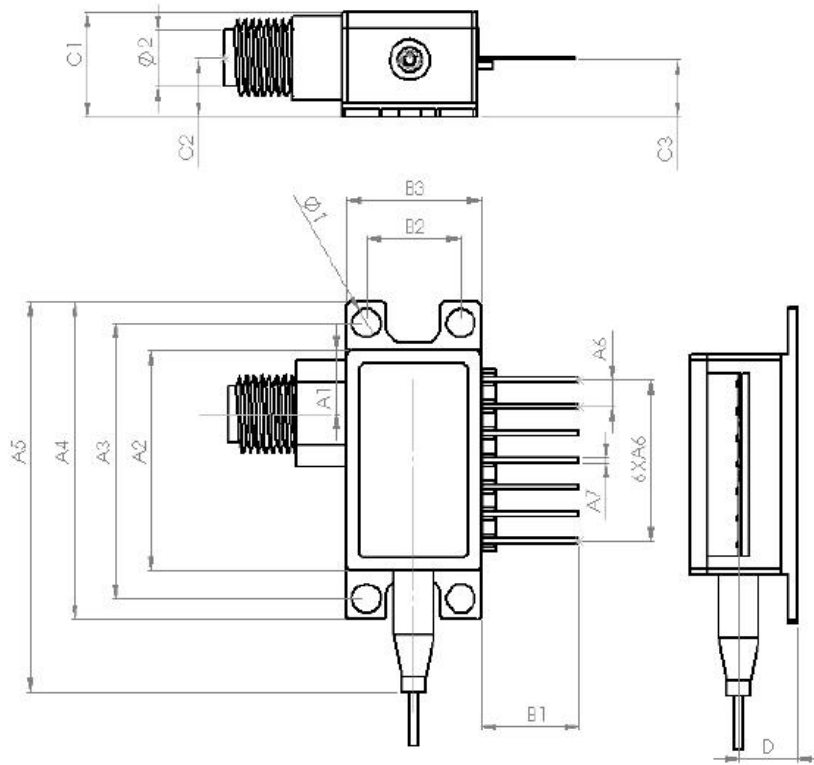


Electrical schematic



Lead#	Function
1	Thermistor
2	Thermistor
3	LD-(Bias)
4	PD anode
5	PD cathode
6	Cooler+
7	Cooler-
8	LD-(RF)
9	LD+/GND

Outline drawings



尺寸	A1	A2	A3	A4	A5	A6	A7	B1
Typ	6	20.83	26	30	55	2.54	0.5	9
尺寸	B2	B3	C1	C2	C3	D	$\Phi 1$	$\Phi 2$
Typ	8.89	12.7	10	5.6	5.46	5.46	2.7	5.4

Channel	Wl(nm)	Channel	Wl(nm)	Channel	Wl(nm)
C01	1577.03	C21	1560.61	C41	1544.53
C02	1576.20	C22	1559.79	C42	1543.73
C03	1575.37	C23	1558.98	C43	1542.94
C04	1574.54	C24	1558.17	C44	1542.14
C05	1573.71	C25	1557.36	C45	1541.35
C06	1572.89	C26	1556.55	C46	1540.56
C07	1572.08	C27	1555.75	C47	1539.77
C08	1571.24	C28	1554.94	C48	1538.98
C09	1570.42	C29	1554.13	C49	1538.19
C10	1569.59	C30	1553.33	C50	1537.40
C11	1568.77	C31	1552.52	C51	1536.61
C12	1567.95	C32	1551.72	C52	1535.82
C13	1567.13	C33	1550.92	C53	1535.04
C14	1566.31	C34	1550.12	C54	1534.25
C15	1565.50	C35	1549.32	C55	1533.47
C16	1564.68	C36	1548.51	C56	1532.68
C17	1563.86	C37	1547.72	C57	1531.90
C18	1563.05	C38	1546.92	C58	1531.12
C19	1562.23	C39	1546.12	C59	1530.33
C20	1561.42	C40	1545.32	C60	1529.55
				C61	1528.77

Ordering Information

Part number	Note
ML1001A-CXX-FA	DWDM DFB laser module, 6G BW , FC/APC fiber connector, 0.9mm, 1m length
ML1001B-CXX-FA	DWDM DFB laser module, 12G BW , FC/APC fiber connector, 0.9mm, 1m length
ML1001C-CXX-FA	DWDM DFB laser module, 18G BW , FC/APC fiber connector, 0.9mm, 1m length
ML1001D-CXX-FA	DWDM DFB laser module, 20G BW , FC/APC fiber connector, 0.9mm, 1m length

Example: ML1001C-C34-FA, 18Ghz DFB laser with 1550.12nm wavelength
FC/APC fiber connector