10~20 GHz 1310/1550 nm Microwave Distributed Feedback (DFB) Laser(Above 10G)



Description:

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 line.

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

Application:

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

E/O Characteristics:

Optical and Electrical Specification (Tc=25°C)

Parameter	Symbol	Min	Typ	Max	Units	Note
Optical Output Power	P	6	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	-	1310	-	nm	
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	0.05		2.0	mA	
Dark current (PD)	Id			50	nA	
Capacitance (PD)	Ct			20	pF	

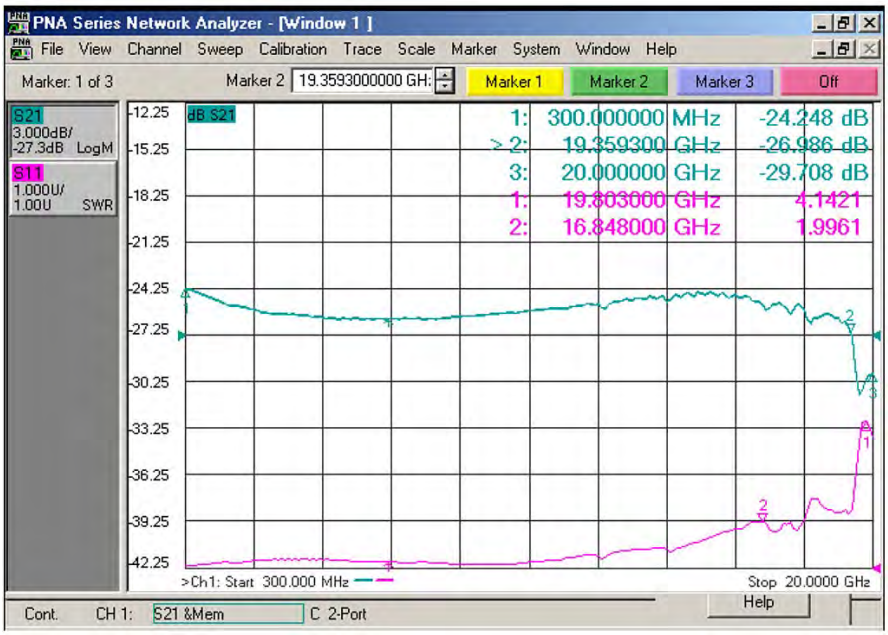
Notes: All laser chips come from wafers that have been certified using a representative lot of devices that must achieve an acceptable yield for burn-in.

1. Laser temperature set 25°C, bias current at 55mA; 2. Operation case temperature -5~75°C.

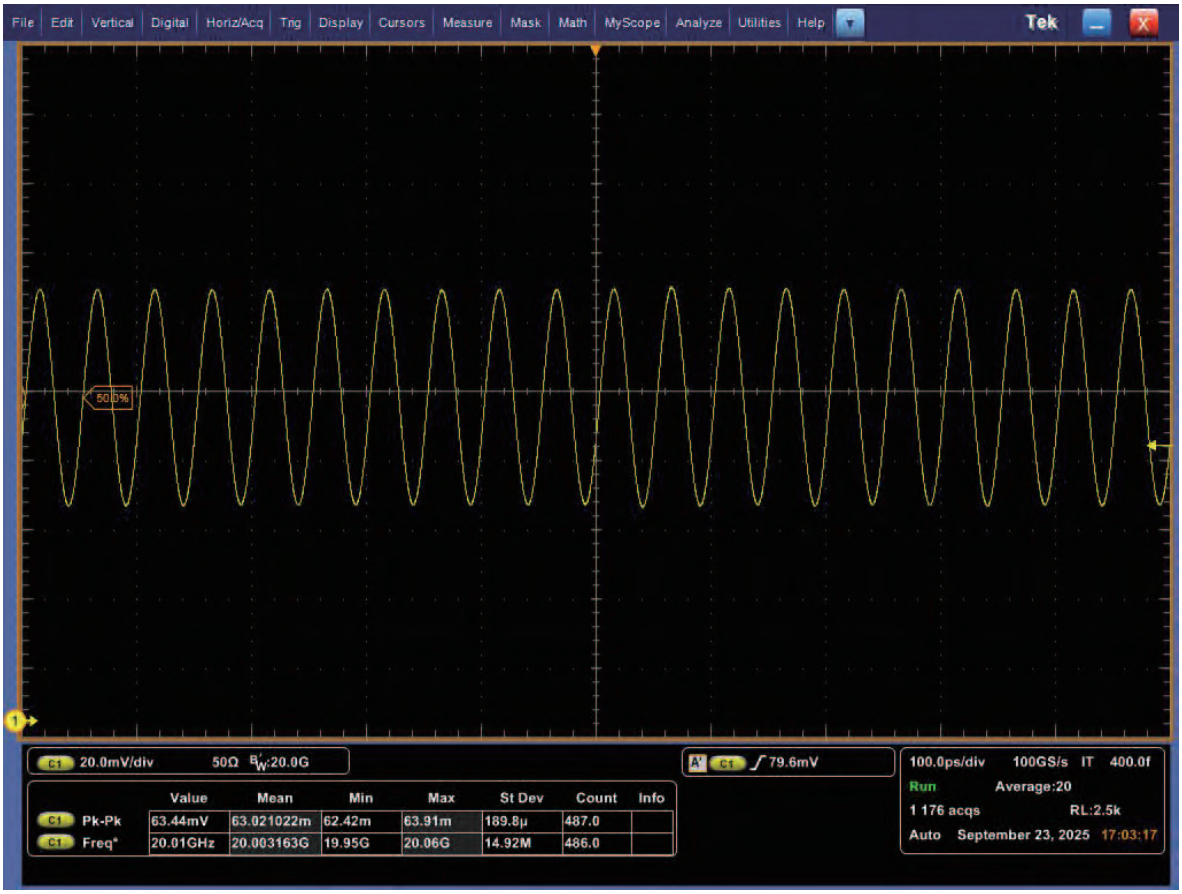
Performance Specifications:

Parameter	Symbol	Min.	Max.	Unit
Laser diode forward current	If		120	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

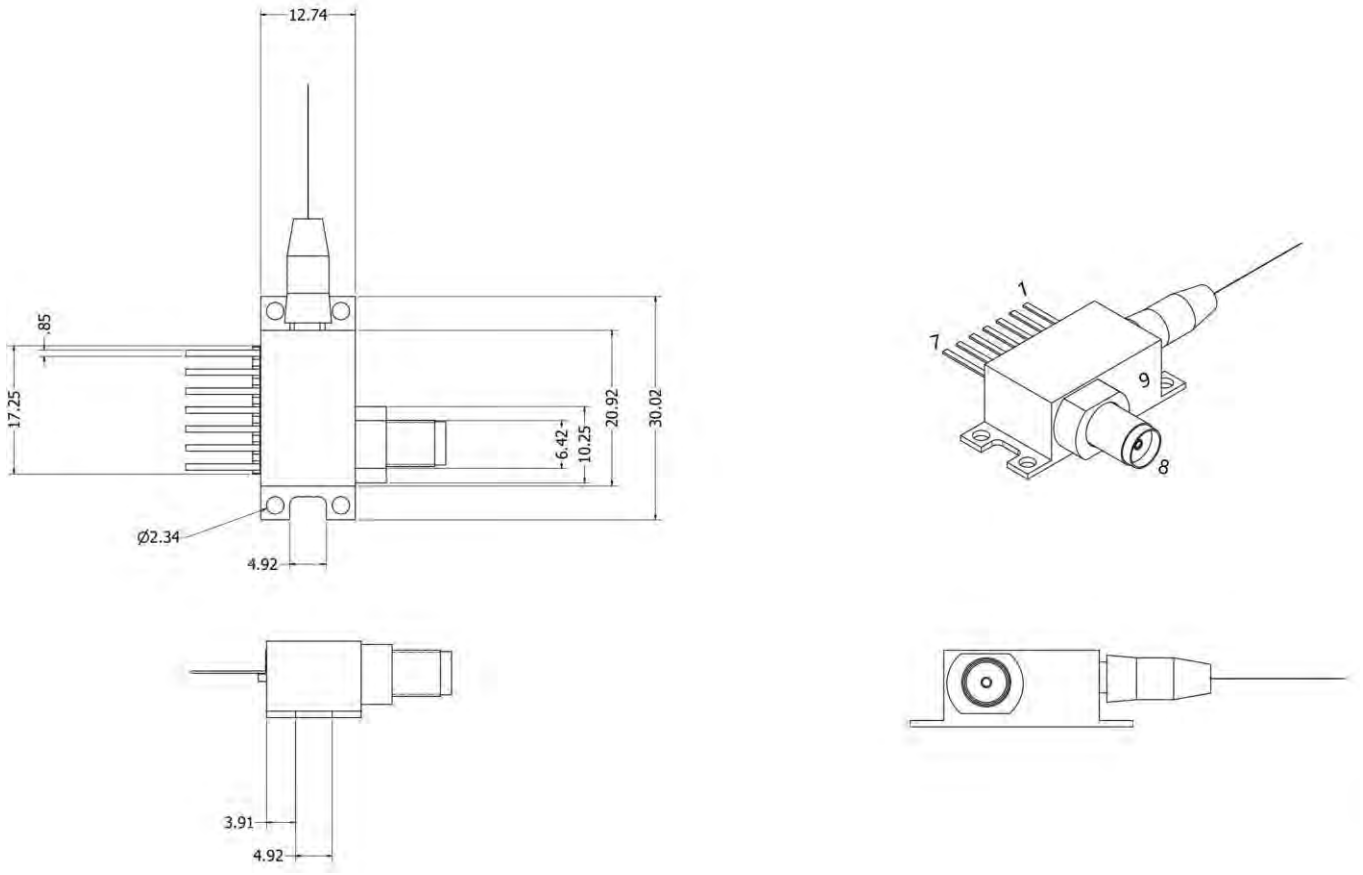
Typical Data:



Bandwidth test curve



Outline drawings:



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