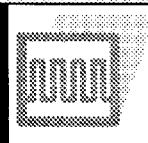


10 GB/s Laser Module



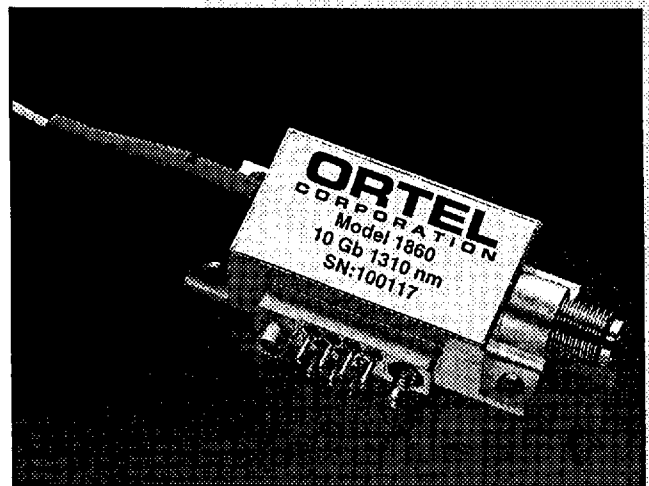
1310 nm Direct Modulation
Model 1860A

The Model 1860A is a Directly Modulated 10 Gb/s DFB laser module with the high bandwidth and damping suitable for 10 Gb/s transmission over distances exceeding 50 km. This laser can be used for low cost bandwidth upgrades over traditional intra-city fiber optic links. The 1310 nm wavelength reduces concern about dispersion control and mapping for conventional single-mode fiber. The module includes a thermoelectric cooler, optical isolator, and monitor photodiode.

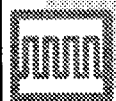
DATA SHEET

Features:

- High Extinction Ratio
- Large Laser Distance x Bandwidth Product
- High Efficiency, High Power
- Works with Modular Drivers
- OC-192/STM-64 Applications
- ISO 9001 Certified



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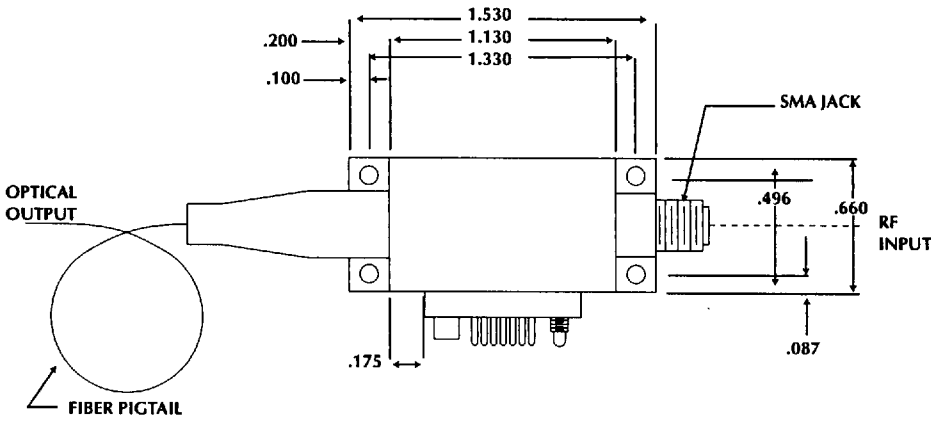
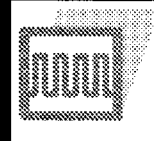
10 GB/s Laser Module

PRELIMINARY

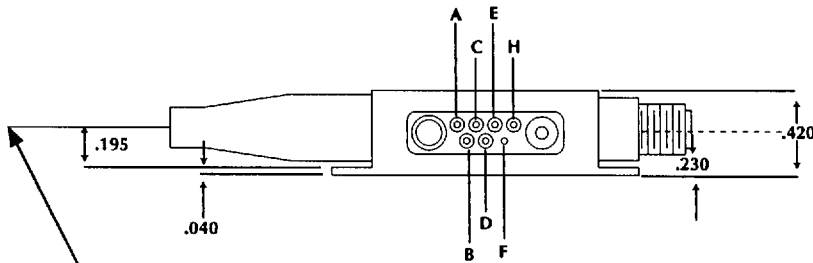
Specifications (0°C to 65°C)						
Optical Parameter	Sym	Condition	Min	Typ	Max	Units
Optical Output Power	P_o	$I_{-I_{th}} = 40 \text{ mA}$	-	4	-	mW
Wavelength	λ	-	1290	-	1330	nm
External Efficiency	η	-	0.08	0.1	-	W/A
Spectral Width	λ	FWHM	-	-	10	Mhz
Side Mode Suppression	SMSR	-	30	-	-	dB
Chromatic Dispersion Penalty 40 km SMF	-	10 GB/s, NRZ, Er = 10 dB BER = 10-9	-	-	0.5	dB
Optical Isolation	-	-	30	-	-	dB
Electrical Parameter						
High Frequency	F_h	-	10	12	-	GHz
Low Frequency Cutoff	F_l	-	-	-	500	kHz
Input Return Loss, 50 Ω	S_{11}	500 kHz - 10 GHz	10	-	-	dB
Rise Time, 20% - 80%	τ_r	10 GB/s, NRZ, Er = 10 dB, 1- I _{th} = 40 mA avg	-	-	35	pS
Fall Time, 80% - 20%	τ_f	10 GB/s, NRZ Er = 10 dB, 1- I _{th} = 40 mA avg	-	-	40xz	pS
Threshold Current	I_{th}	-	-	15	35	mA
Thermo-Electric Cooler Current	I_{tec}	T = 65°C T = -20°C	-	-	1 .8	A A
Thermistor Resistance	R_{th}	25°C	-	10	-	K Ω
Thermistor Coefficient	-	-	-	-4.4	-	%/°C
Monitor Photodiode Current	I_{MPD}	$I_{-I_{th}} = 40 \text{ mA}$	100	-	-	μA
Input Impedance	Z_{in}	-	-	50	-	Ω
Maximum Ratings						
Input Signal	V_{max}	Laser Biased Laser Un-Biased	-	-	4 2	Vp-p Vp-p
Laser Forward Bias	-	TEC on, 60 sec	-	-	120	mA
Storage/Operating Temperatures	-	-	-20	-	85	°C
Reverse Voltage (Laser)	-	-	-	-	2	V
Reverse Voltage (Photodiode)	-	-	-	-	10	V
TEC Current	-	-	-	-	1.2	A



10 GB/s Laser Module



Pin	Function
A	Thermistor
B	T/E Cooler (-)
C	Thermistor
D	T/E Cooler (+)
E	Laser Bias
F	Ground
H	Monitor Photodiode



AVOID EXPOSURE TO INVISIBLE LASER RADIATION EMITTED FROM FIBER END OR OPTICAL CONNECTOR AT FIBER TIP

Information contained herein is deemed to be reliable and accurate as of issue date. No responsibility is assumed for its use, nor for any infringements on the rights of others. Ortel Corporation reserves the right to change the design or specifications of the product at any time without notice. Ortel Corporation offers the products described herein with a one year warranty on material and workmanship. Ortel Corporation will repair or replace any product or part thereof which proves defective within one year of shipment. For a complete copy of our warranty policy, please contact Ortel Corporation.

Safety Considerations – The light emitted from this laser diode is invisible and may be harmful to the human eye. Avoid looking directly into the fiber pigtail or into the collimated beam along its axis when the device is in operation. Operating the laser diode outside of its maximum ratings may cause device failure or a safety hazard.



VISIBLE LASER RADIATION
AVOID DIRECT EXPOSURE TO BEAM
MAX POWER 200mW
WAVELENGTH 830nm
CLASS III LASER PRODUCT
THIS PRODUCT COMPLIES WITH 21 CFR
CHAPTER I SUBCHAPTER J

Corporate Headquarters

Ortel Corporation
 2015 West Chestnut Street
 Alhambra, California USA 91803
 (800) 362-3891 (626) 281-3636
 Fax (626) 281-8231
 email: mtkge-a@ortel.com
 website: http://www.ortel.com
 ISO 9001 Certified



Subsidiaries

Germany
 Ortel VERTRIEBS GmbH
 49-89-3790-720
 Fax 49-89-3790-7249

France, Belgium & The Netherlands
 Ortel SARL
 33 (1) 69 32 11 27
 Fax 33 (1) 69 32 11 37

Spain, Portugal & Southern France
 Ortel SARL
 33 (4) 67 32 91 16
 Fax 33 (4) 67 32 91 30