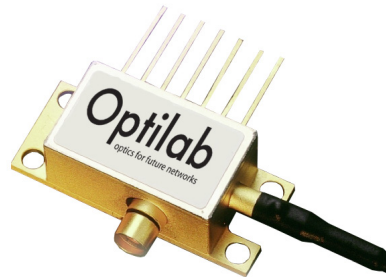


# DFB-1310-DM-10



## 10 GHz 1310 nm Directly Modulated DFB Laser

The Optilab DFB-1310-DM-10 directly-modulated (DM) DFB laser is an excellent solution for 10 GHz analog or 12 Gb/s digital transmission of up to 60 km using traditional SMF-28 single-mode fiber links. The 1310 nm wavelength eliminates the concern about dispersion control over most installed fiber links. The package contains a high-speed DFB laser chip, thermoelectric cooler, thermistor, optical isolator, and a rear-facet monitor photodiode for external optical power control. Contact Optilab for more information.

### Features

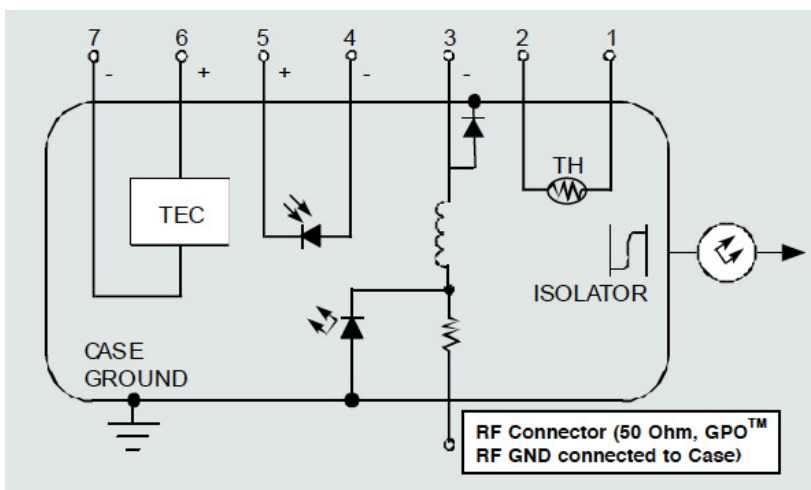
- 10 GHz analog bandwidth
- 12 Gb/s digital transmission
- Internal TEC for stable performance over wide case range of -5° C to 80° C
- High relaxation frequency at low bias
- Hermetically sealed optics, isolator on TEC

### Applications

- VSR, SR, IR and LR applications
- SONET and 12 Gb/s Ethernet transponders and line cards
- Analog Link up to 12 GHz bandwidth
- RF over Fiber (RFoF)

### Functional Diagram

Internal Circuit



Pin Configuration

Pin	Function
1	Thermistor
2	Thermistor
3	Laser Cathode (-), dc Bias <sup>1</sup>
4	MPD Anode, (Negative Bias MPD)
5	MPD Cathode
6	Thermoelectric Cooler (+) <sup>2</sup>
7	Thermoelectric Cooler (-)

1. Laser anode is case ground.
2. A positive current into pin 6 cools the laser.

# 10 GHz 1310 nm Directly Modulated DFB Laser

## OPTIONS

**DFB-1310-DM-10-x**

Connector Type  
 x FA, FC/APC  
 SU, SC/UPC

## TECHNICAL INFO

For technical info and support:

[sales@optilab.com](mailto:sales@optilab.com)

[www.optilab.com](http://www.optilab.com)

## WEB ORDER

To order, please click below.

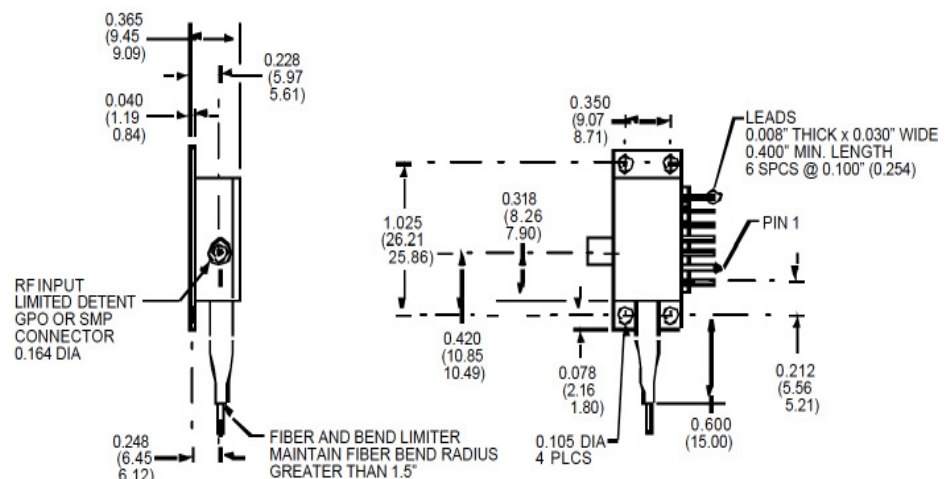


## Optilab Advantage

- Innovation
- Performance
- Quality
- Customization
- Warranty

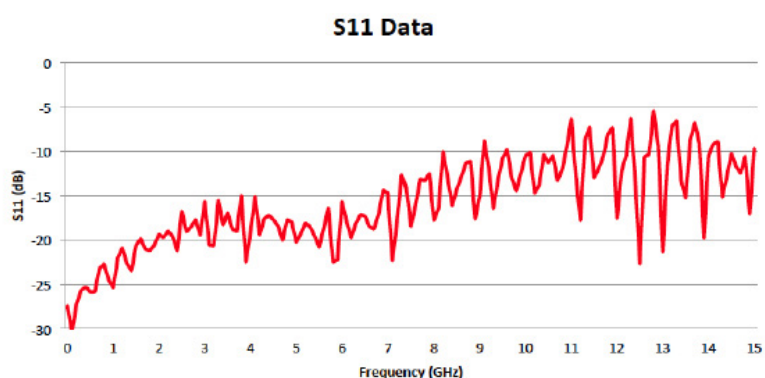
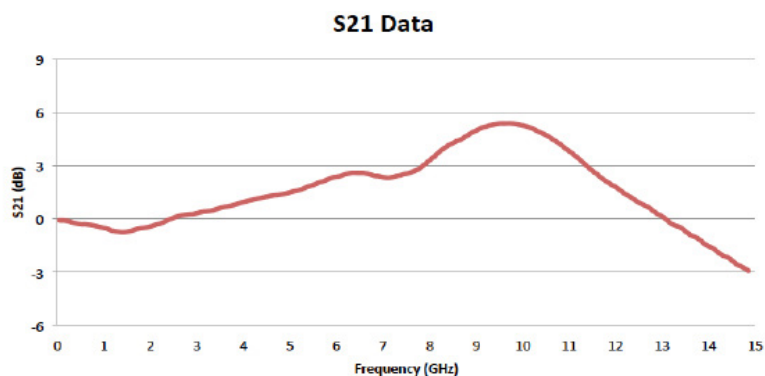
Optical Specifications	
Wavelength Range	1290 nm to 1320 nm
Optical Output Power	Up to 10 dBm @ 70 mA
Threshold Current	2 mA min., 30 mA max.
Wavelength Tuning Coefficient	0.085 nm / °C typ.
ac Side-Mode Suppression Ratio	35 dB min.
Chromatic Dispersion Penalty	1.0 dB max. @ 60 km, 200 ps/nm
Optical Isolation	32 dB min.
High-frequency Cutoff (-3 dB)	14 GHz min.
Low-frequency Cutoff (-3 dB)	30 kHz
RF Return Loss, 50 Ω	10 dB min. up to 8 GHz
Rise / Fall Time, 10% - 90%	50 ps max.
Thermoelectric Cooler Current	1.3 A max.
Thermistor Resistance	10 kΩ typ. @ 25 °C 8 k typ. Ω @ 30 °C
Thermistor Temp. Coefficient	-4.4 % / °C
Monitor Photodiode Current	40 μA to 1500 μA
Mechanical Specifications	
Operating Case Temperature Range	-5 °C to +80 °C
Storage Case Temperature Range	-40 °C to +85 °C
Laser Forward Bias	150 mA
Laser Reverse Voltage	1 V
Laser Reverse Current	200 mA
Photodiode Reverse Voltage	20 V
TEC Current	1.7 A
Housing Dimensions	1.025" x 0.350" x 0.365"
Housing Type	7-pin Butterfly Package
Optical Connectors	FC/APC, SC/UPC
Optical Fiber Type	SMF-28 (Standard)
RF Connector	GPO type

## Mechanical Drawing

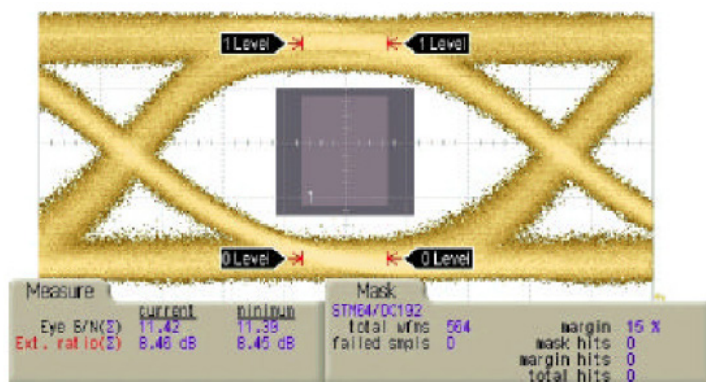


# 10 GHz 1310 nm Directly Modulated DFB Laser

## Analog Performance



## Digital Optical Eye Diagram



Filtered Optical Eye Pattern (0 km, fourth-order Bessel filter, 8.4 dB ER, 20 ps/div)