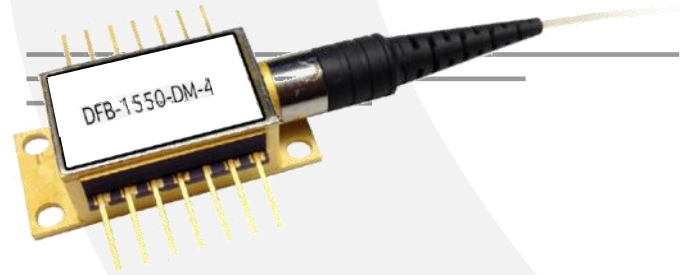




DFB-1550-DM-4



DEVICE

1550 nm, Directly Modulated DFB Laser, 4 GHz

OVERVIEW

The Optilab DFB-1550-DM-4 Directly-Modulated (DM) DFB laser is a high-speed 1550 nm wavelength laser source for 4.5 GHz analog or 6 Gb/s digital transmission optical link. The MQW DFB laser features up to 20 mW of output optical power, high Side Mode Suppression Ratio (SMSR), low residual chirp, and a built in thermoelectric cooler, thermistor, and a rear-facet monitor photodiode for external optical power control. Contact Optilab for more information.

FEATURES

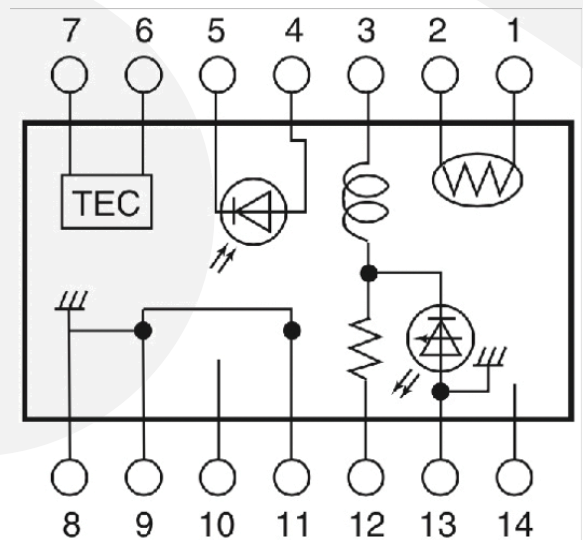
- 4.5 GHz analog bandwidth
- 6 Gb/s digital transmission
- 20 mW output power
- Built-in TEC, Thermistor & Monitor PD
- Side Mode Suppression Ratio > 50 dB
- Wavelength range : 1547nm to 1550nm

USE IN

- Analog link up to 4 GHz bandwidth
- 5 Gb/s digital communication
- RF over Fiber Link
- CW 1550 nm laser source
- Directly modulated optical link

FUNCTIONAL DIAGRAM

- | | |
|---------------------|-------------------------|
| 1 Thermistor | 8 Case Ground |
| 2 Thermistor | 9 Case Ground |
| 3 Laser DC Bias (-) | 10 Not Connected |
| 4 Monitor Anode | 11 Laser Ground |
| 5 Monitor Cathode | 12 Laser Modulation (-) |
| 6 TEC (+) | 13 Case Ground |
| 7 TEC (-) | 14 Not Connected |





DFB-1550-DM-4

SPECIFICATIONS

Center Wavelength Range	1547-1550 typ.
Optical Output Power	20 mW typ.
Threshold Current	20 mA max. @ CW
Operating Current	250 mA max. @ CW
Forward Voltage	1.6 V typ.
Series Resistance	25 Ω typ.
Slope Efficiency	0.16 mW/mA typ.
Threshold Power	0.15 mW
Monitor Current	0.10 mA min., 1.0 mA max.
Side Mode Suppression	50 dB typ.
Laser Linewidth	2 MHz typ.
Rise/Fall Time (10%-90%)	100 ps typ.
3 dB S21 Bandwidth	4.5 GHz typ.
In-Band Ripple (Window)	< ± 1.5 dB
RF Return Loss	-10 dB from DC to 3 GHz
Optical Isolation	35 dB typ.
Relative Intensity Noise	-150 dB/Hz
Optical Connectors	FC/APC or others
Optical Fiber Type	SMF-28 (standard)

GENERAL & MECHANICAL

ABSOLUTE MAXIMUM RATING

Operating Temperature	-30°C to +65 °C
Storage Temperature	-50°C to +75 °C
Reverse Voltage	2 V
LD Current	300 mA
PD Reverse Voltage	20 V
PD Forward Current	10 mA
TEC Voltage	2.5 V
TEC Current	2 A

TEC AND THERMISTOR CHARACTERISTICS

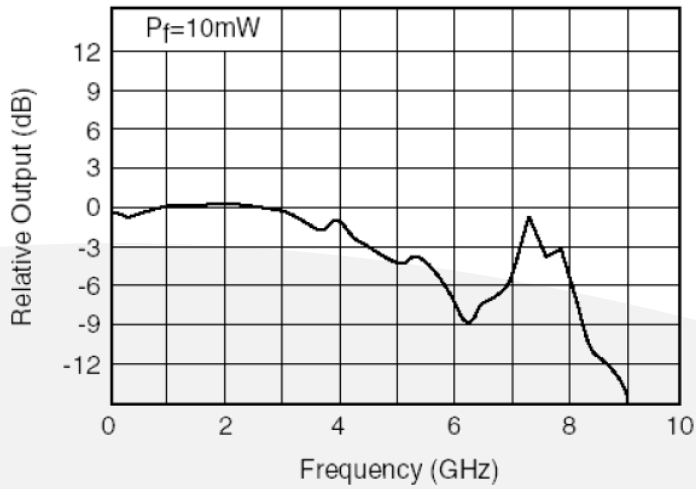
TEC Resistance	2.4 Ω typ.
Thermistor Resistance	7.7 k Ω min., 12.6 k Ω max.
Thermistor B Constant	3.450 K typ.



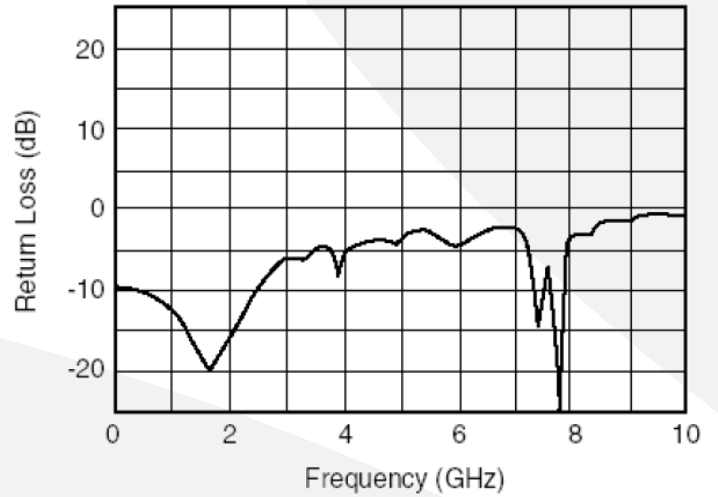


DFB-1550-DM-4

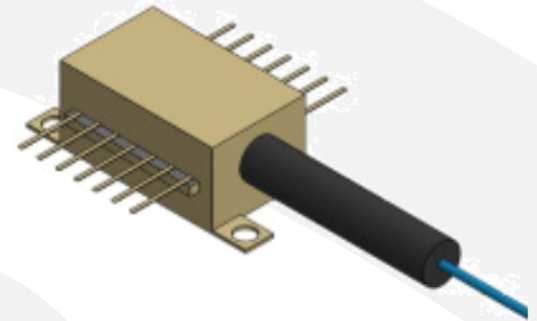
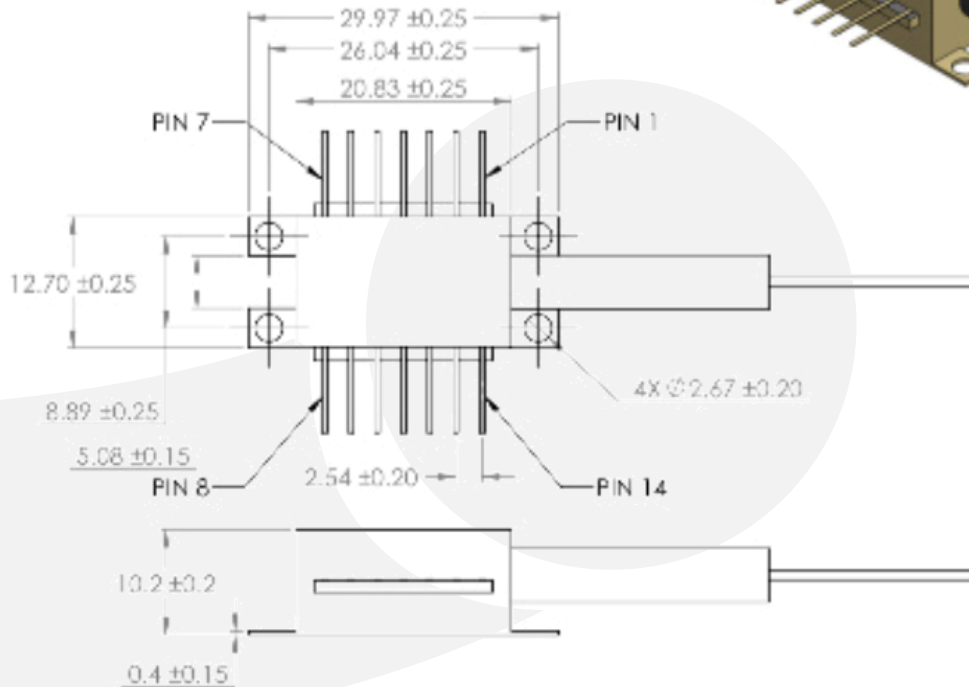
FREQUENCY RESPONSE



RF RETURN LOSS



MECHANICAL DRAWING



Unit: mm





DFB-1550-DM-4



OPTIONS

DFB-15XX-DM-4-YY

XX Center Wavelength : 47, 48, 49, 50nm

YY Output Power : 20, 30mW

