

CWDM laser Diodes Datasheet

Model #: LD-CWDM

Description: Diode The CWDM series laser diodes cover customer selection of large wavelengths from 1260nm to 1650nm which are fabricated in a hermetically sealed 14-pin butterfly package. The laser diodes contains thermoelectric cooler (TEC), thermistor, monitor photodiode, optical isolator to secure high quality laser performance. We also have full customer selection of output powers, package types and output fibers of SM fibers, PM fibers and other special fibers. Our laser products are Telcordia GR-468 qualified, and in compliance with RoHS directives.

Features:

- High output power (10~100mW);
- High-performance, multiquantum well (MQW) distributed-feedback (DFB) laser;
- Industry-standard, 14-pin butterfly package;
- Built-in TEC and optical isolator;
- ITU wavelengths available from 1260 nm —1650 nm;
- Customer selection of wavelengths.
- Reliability: Telcordia GR-468. RoHS



Applications:

- LAN, WAN and metro networks;
- C/DWDM systems;
- Fiberoptic sensors;
- Lsaser sources;
- CATV systems.

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Storage temperature	T _s	-	-40	-	85	°C
Operating case temperature	T _{op}	-	-20	-	70	°C
Forward Current	I _F	CW	-	-	400	mA
Laser Reverse Voltage	V _{LR}	-	-	-	2	V
PD Forward Current	I _{FPD}	-	-	0.7	2	mA
PD Reverse Voltage	VR _{PD}	-	-	5	10	V
TEC current	I _{TEC}	-	-	0.8	1.5	A
TEC voltage	V _{TEC}	-	-	1.5	3.5	V

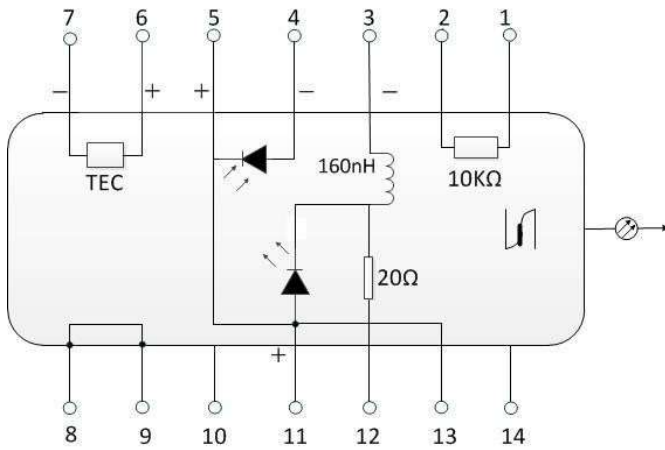
Optical Characteristics (at 25°C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	λ _c	TL=15 ~	λ _{n-3}	λ _n	λ _{n+3}	nm
Peak Optical Output Power	PO	-	10	-	-	mW

Spectral linewidth	LW	Full width, half maximum (FWHM)	-	2	-	MHz
Bandwidth (@-3dB)	BW		-	2.5	-	GHz
Side-mode Suppression Ratio	SMSR	CW	35	40	-	dB
Optical Isolation	-	-10 < TC < +70 °C	30	-	-	dB
Relative Intensity Noise	RIN	CW, output power 5mW	-	-145	-	dB
Wavelength Drift (EOL)	$\Delta\lambda$	Tested over 25-year lifetime	-	-	± 0.1	nm
Wavelength Temperature coefficient	$\Delta\lambda/\Delta T$	TEC temperature at 15°C to 35°C	-	0.09	-	nm/°C
Wavelength Current coefficient	$\Delta\lambda/\Delta I$		-	0.01	-	nm/mA

Electrical Characteristics (at 25°C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	I_{TH}		-	10	35	mA
Slope Efficiency	η	CW output power 5 mW	0.05	0.08	0.2	mW/mA
Operating current	I_{op}	$P_o = 10$ mW (CW)	-	100	200	mA
TEC set temperature	T_s		15	-	35	°C
Laser Forward Voltage	V_F	CW output power 10 mW	-	1.2	2.0	V
Monitor Dark Current	I_D		-	-	0.1	μ A
Input Impedance	Z_{IN}		22	25	28	Ω
Thermistor Current	I_{TC}		10	-	100	μ A
Thermistor Resistance	R_{TH}	$T_L = 25^\circ\text{C}$	9.5	10	10.5	K Ω
TEC Current	I_{TEC}	$T_L = 25^\circ\text{C}$, $TC = 70^\circ\text{C}$	-	-	1.5	A

Pin Assignments:


1	Thermoelectric Cooler (+)
2	Thermistor
3	PD Monitor Anode (+)
4	PD Monitor Cathode (-)
5	Thermistor
6	NC
7	NC
8	NC
9	NC
10	Laser Anode (+)
11	Laser Cathode (-)
12	NC
13	Case Ground
14	Thermoelectric Cooler (-)

