

LAN-WDM Laser Diode

Model #: LAN-WDM

Description: LAN-WDM laser diodes are 1273.55nm, 1277.89nm, 1282.26nm, 1286.66nm, 1291.10nm, 1295.56nm, 1300.05nm, 1304.58nm, 1309.14nm, Multiple Quantum Well (MQW) structured distributed-feedback (DFB) laser modules. The laser diodes are fabricated in a hermetically sealed 14-pin butterfly package, which contains thermoelectric cooler (TEC), thermistor, monitor PD and 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 (10~20mW);
- High-performance, multiquantum well (MQW) distributed-feedback (DFB) laser;
- Industry-standard, 14-pin butterfly package;
- Built-in TEC and optical isolator;
- ITU wavelengths of LAN WDM 1260 nm —1650 nm;
- Customer selection of wavelengths.
- Reliability: Telcordia GR-468. RoHS



Applications:

- LAN, WAN and metro networks;
- Fiberoptic sensors;
- Laser sources;
- Data center.

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}	-	-	1.1	5	mA
PD Reverse Voltage	V _{RPD}	-	-	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 ₁	TL=20 ~ 30°C CW	1273.05	1273.55	1274.05	nm
Center Wavelength	λ ₁	TL=20 ~ 30°C CW	1277.39	1277.89	1278.39	nm

Center Wavelength	λ_1	TL=20 ~ 30°C CW	1281.96	1282.26	1282.76	nm
Center Wavelength	λ_1	TL=20 ~ 30°C CW	1286.16	1286.66	1287.16	nm
Center Wavelength	λ_1	TL=20 ~ 30°C CW	1290.60	1291.10	1291.60	nm
Center Wavelength	λ_1	TL=20 ~ 30°C CW	1295.06	1295.56	1296.16	nm
Center Wavelength	λ_1	TL=20 ~ 30°C CW	1299.55	1300.05	1300.55	nm
Center Wavelength	λ_1	TL=20 ~ 30°C CW	1304.08	1304.58	1305.08	nm
Center Wavelength	λ_1	TL=20 ~ 30°C CW	1208.64	1309.14	1309.64	nm
Peak Optical Output Power	PO	-	10	-	20	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	-	0.11	-	nm/°C
Wavelength Current coefficient	$\Delta\lambda/\Delta I$	-	-	0.03	-	nm/mA

Electrical Characteristics (at 25°C laser temperature)

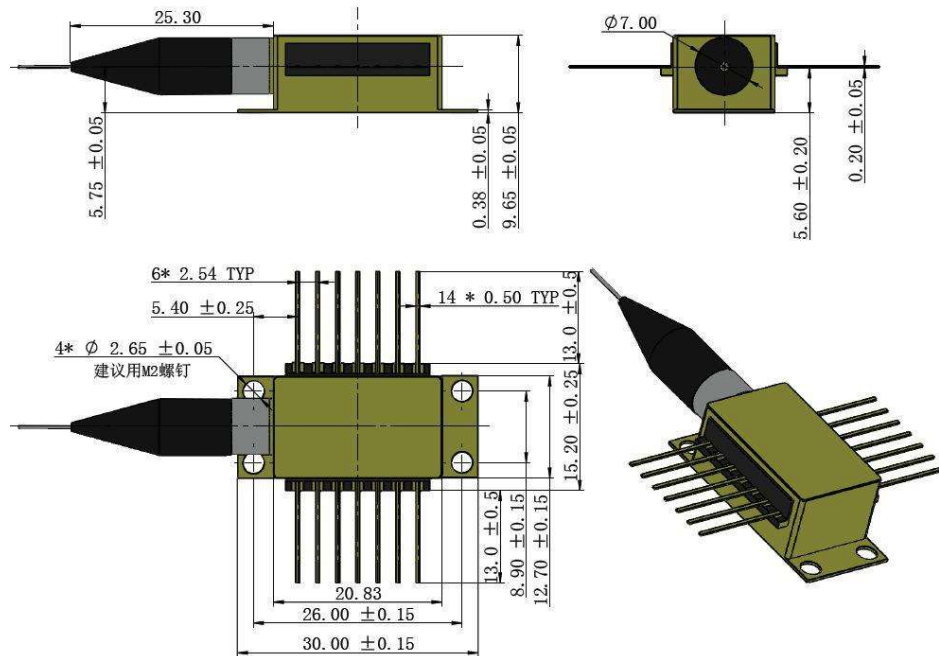
Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	I_{TH}	-	-	10	35	mA
Slope Efficiency	η	CW output power 5 mW	0.05	0.11	0.2	mW/mA
Operating current	I_{op}	$P_O = 10$ mW (CW)	-	100	200	mA
TEC set temperature	T_s	-	15	-	35	°C
Laser Forward Voltage	V_F	CW output power 10 mW	-	1.2	3.0	V
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}	TL = 25°C, TC = 70°C	-	-	1.5	A
TEC Voltage	V_{TEC}	TL = 25°C, TC = 70°C	-	-	3.0	V
TEC capacity	ΔT	TC = 70°C	-	-	50	°C

Thermistor temperature	-	-	-	-	100	°C
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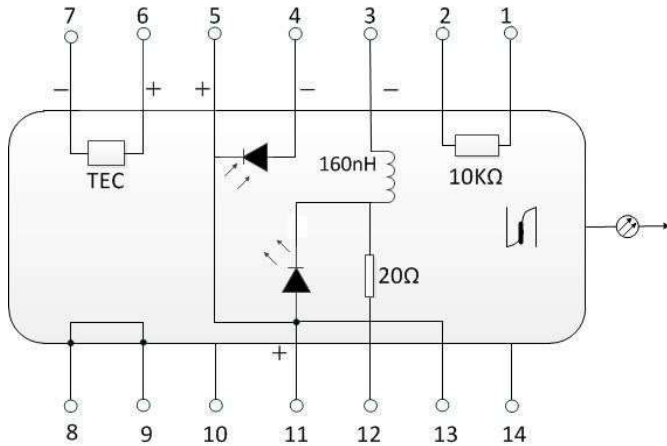
Fiber Pigtail Specifications

Parameters	Description
Fiber Type	SM fiber
Jacket Type	900μm tight tube
Pigtail Length	1.0±0.1m
Connector Type	FC/APC

Package drawing (Mechanical Dimensions):



Pin Assignments:



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

Ordering Information: BFLD-AAAA.AA-B-C-D

AAAA.AA: wavelength	B: output power	C: fiber type	D: connector type
1277.35 - 1273.55 nm	10 – 10 mW	SM – SMF-28	FU - FC/UPC
1277.89 -1277.89 nm	X - specify		FA - FC/APC
1282.26 – 1282.26 nm			SU - SC/UPC
1286.66 – 1286.66 nm			SA - SC/APC
1291.10 – 1291.10 nm			N - none
1295.56 – 1295.56 nm			X - specify
1300.05 – 1300.05 nm			
1304.58 – 1304.58 nm			
1309.14 – 1309.14 nm			

