

780nm FP(Fabry-perot) Laser Diodes



780nm FP(Fabry-perot) Laser Diodes Datasheet

1. Product Information

Part Number: SWLD-078010C122-08-FP

Product Description: The 780nm FP(Fabry-perot) Laser Diodes are packaged in a hermetically sealed 14-PIN butterfly package. The laser diodes contain FP(Fabry-perot) Chip, thermoelectric cooler (TEC), thermistor, monitor photodiode to secure high quality laser performance. The Laser Diodes Wavelength of 780±5nm, Output peak power: ≥10mW, Pigtail type: HI 780 with 900um loose tube, 1m, FC/APC connector. Our laser products are Telcordia GR-468 qualified, and in compliance with RoHS Directives.

Applications:

- LAN, WAN and metro networks
- Fiberoptic sensors
- Laser sources
- CATV systems

Features:

- High-performance, FP(Fabry-perot) Chip laser
- Industry-standard, 14-PIN butterfly package
- Built-in TEC
- Customer selection of wavelengths

Reliability: Telcordia GR-468. RoHS

2. Performance Specifications

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Storage Temperature	T _S	-	-40	-	+85	°C
Operating Case Temperature	T _{OP}	-	-20	-	+65	°C
Forward Current	I _F	CW	-	-	350	mA
Laser Reverse Voltage	V _{LR}	-	-	-	2	V
PD Forward Current	I _{F_{PD}}	-	-	1.1	5	mA
PD Reverse Voltage	V _{R_{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=15~35°C CW	775	780	785	nm
Peak Optical Output Power	P _O	-	10	-	-	mW

Spectral Width(RMS)	LW		-	8	-	nm
Relative Intensity Noise	RIN	CW, output power 10mW	-	-	-135	dB/Hz

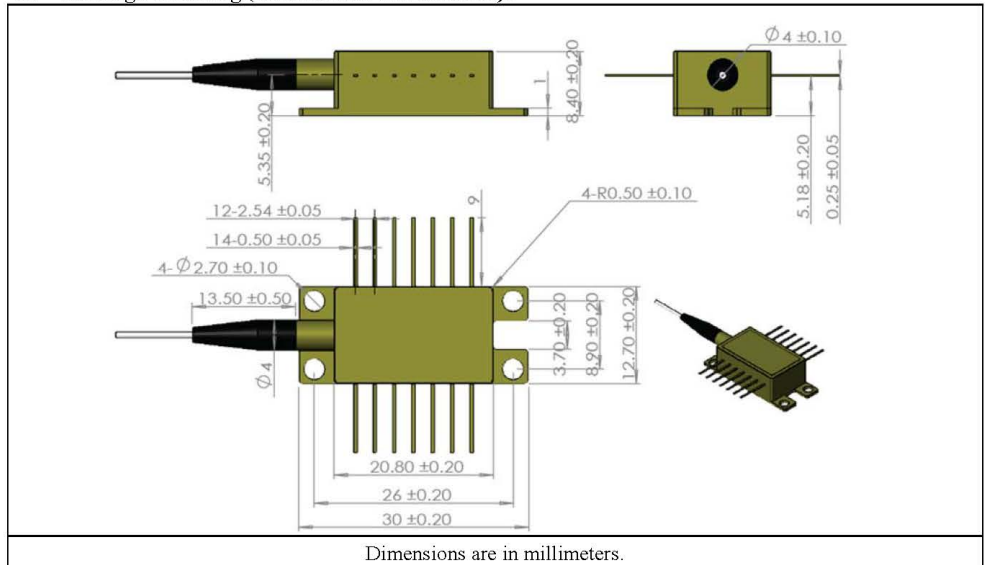
Electrical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	I_{TH}	-	-	10	35	mA
Operating current	I_{OP}	$P_O = 10mW$ (CW)	-	100	150	mA
TEC set temperature	T_S	-	15	-	35	°C
Laser Forward Voltage	V_F	$P_O = 10mW$ (CW)	-	1.2	3.0	V
Monitor Dark Current	I_D	$I_F = 0mA, V_{RPD} = 5V$	-	-	0.1	μA
Thermistor Current	I_{TC}	-	10	-	100	μA
Thermistor Resistance	R_{TH}	$T_L = 25\text{ }^\circ C$	9.5	10	10.5	K Ω
TEC Current	I_{TEC}	$T_L = 25\text{ }^\circ C, T_C = 65\text{ }^\circ C$	-	-	1.5	A
TEC Voltage	V_{TEC}	$T_L = 25\text{ }^\circ C, T_C = 65\text{ }^\circ C$	-	-	3.5	V
TEC capacity	ΔT	$T_c = 65\text{ }^\circ C$	-	-	50	°C
Thermistor temperature	-	-	-	-	100	°C

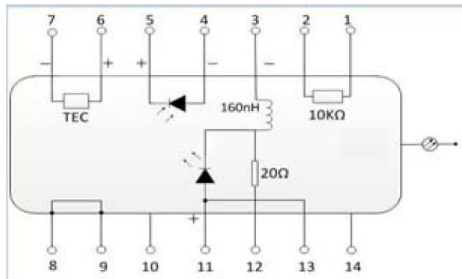
Fiber Pigtail Specifications

Parameters	Description	Parameters	Description
Fiber Type	HI 780	Pigtail Length	$1.0 \pm 0.1m$
Jacket Type	900 μm loose tube	Connector Type	FC/APC

3. Package Drawing (Mechanical Dimensions):



4. Pin Assignments:



1	Thermistor
2	Thermistor
3	Laser de Bias (Cathode) (-)
4	Monitor PD Anode (-)
5	Monitor PD 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

5. Test Report: The test report should be provided when the products are delivered. Following characteristic test data should be included: Optical Output Power, Center Wavelength, P-I curve, Pin Assignments.

6. Packaging: Vacuumize anti-static plastic package. The following items should be indicated on the outer packaging surface: Product Name, Product Number, Serial Number.

7. Ordering Information:

Ordering Information						
SWLD-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Wavelength	Power	Fiber type	Pigtail Type	Pigtail length	Connector
SWLD-	1270: 1270nm	01:1mW	0: SMF-28e	0: 250µm bare fiber	1: 50cm	0: None
	.....	05:5mW	1:PMF-1310	1:900µm loose tube	2: 100cm	1: FC/UPC
	1610: 1610nm	10:10mW	2:PMF-1550	2:900µm tight tube	3: 150cm	2: FC/APC
	1273:1273.55nm	20:20mW	C: Customized	C: Customized	4: 200cm	3: SC/UPC
	.....	40:40mW			C: Customized	4: SC/APC
	1309: 1309.14nm	60:60mW				5: LC/UPC
	8610: 1610.92nm	80:80mW				6: LC/APC
	.....	1H:100mW				C: Customized
9630: 1527.22nm	CC: Customized					
Example of Ordering Form: SWLD-1273100222-01						
SWLD-	1273	10	0	2	2	2
	1273.55nm	10mW	SMF-28e	900µm tight tube	100cm	FC/APC

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