

Select Wavelength Laser Diodes

From LAN/M/CWDM/DWDM &
For Gas Detection



2022 V1

For customized projects please Contact us:

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Select Wavelength Laser Diodes from LAN/M/CWDM/DWDM: SWLD

The SWLD series laser is specifically developed for wavelength division multiplexing (WDM) systems. Selected wavelengths comply with ITU recommendations, both in channel definition of CWDM Wavelengths(1270 to 1610nm), thus adhering to the 20nm grid and in channel definition of DWDM Wavelengths(1527.22 to 1610.92nm), thus adhering to the 100GHz grid(0.8nm) relative to a frequency. It is available in a hermetic sealed 14-pin butterfly package. The laser diodes contain a thermoelectric cooler (TEC), thermistor, monitor PD and optical isolator to secure high-quality laser performance. We also have a 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.

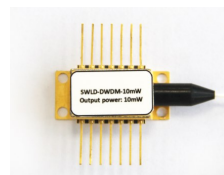
Applications

- LAN, WAN and metro networks
- C/DWDM system
- Fiberoptic sensors
- Laser sources
- Gas detection

Features

- High output power (10-100mW)
- High-performance, multi-quantum well (MQW) distributed-feedback (DFB) laser
- Industry-standard, 14-pin butterfly package
- Built-in TEC and optical isolator
- Customer selection of wavelengths
- (LAN-WDM/CWDM/DWDM)

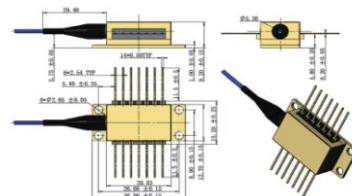
Product Photo



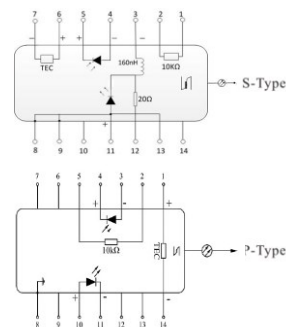
Optical and Electric Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Center Wavelength	λ_c	LAN/M/C/DWDM ITU grid			nm
Optical Output Power	P_o	10	-	-	mW
Threshold Current	I_{TH}	-	7	25	mA
Operating Current	I_{OP}	-	80	500	mA
Laser Reverse Voltage	V_R	-	-	2	V
TEC Set Temperature	T_S	15	-	35	°C
Laser Forward Voltage	V_F	-	-	3	V
Optical Isolation	ISO	30	-	-	dB
Side-mode Suppression Ratio	SMSR	35	45	-	dB
Spectral Linewidth (FWHM)	LW	-	3	-	MHz
Bandwidth (@-3dB)	BW	-	2.5	-	GHz
PD Reverse Voltage	V_{RPD}	-	5	10	V
PD Forward Current	I_{FPD}	-	1.1	5	mA
PD Monitor Dark Current ($V_r=-5V$)	I_D	-	0	0.1	μA
TEC Current	I_{TEC}	-	-	1.5	A
TEC Voltage	V_{TEC}	-	-	3.5	V
Thermistor Resistance(25°C)	R_{TH}	9.5	10	10.5	K Ω
Lead Soldering Time(<260°C)	-	-	-	10	Sec
Operating Temperature Range	-	-5	25	70	°C
Storage Temperature	T_{STG}	-40	-	85	°C

Mechanical Dimensions



PIN Definition



Ordering Information

SWLD-	□ □ □ □	□ □	□	□	□	□
	Wavelength	Power	Fiber type	Pigtail Type	Pigtail length	Connector
SWLD-	1270: 1270nm	01:1mW	0: SMF-28e	0: 250 μ m bare fiber	1: 50cm	0: None
	05:5mW	LPMF-1310	1:900 μ m loose tube	2: 100cm	1: FC/UPC
	1610: 161 Onm	10:10mW	2:PMF-1550	2:900 μ m 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
	IH:100mW					C: Customized
	9630: 1527.22nm	CC: Customized				
Example of Ordering Form: SWLD-1273100222-L1						
SWLD-	1273	10	0	2	2	2
	1273.55nm	10 mW	SMF-28e	900 pm tight tube	100cm	FC/APC

Select Wavelength Laser Diodes for Gas Detection: SWLD

The SWLD series laser is specifically developed for Gas Sensing systems. It is available in a hermetic sealed 14-pin butterfly package. The laser diodes contain a thermoelectric cooler (TEC), thermistor, monitor PD and optical isolator to secure high-quality laser performance. We also have a 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.

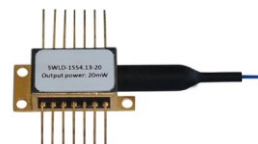
Applications

- LAN, WAN and metro networks
- C/DWDM system
- Fiberoptic sensors
- Laser sources
- Gas detection

Features

- High output power(10~ 100m W)
- High-performance, multi-quantum well (MQW) distributed-feedback (DFB) laser
- Industry-standard, 14-pin butterfly package
- Built-in TEC and optical isolator
- Customer selection of wavelengths (LAN-WDM/CWDM/DWDM)

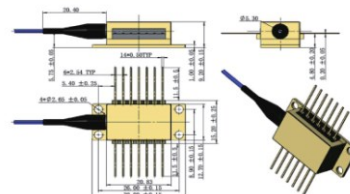
Product Photo



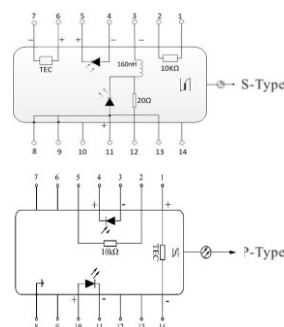
Optical and Electric Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Center Wavelength (O ₂)	λ_c	-	764	-	nm
Center Wavelength (HF)	λ_c	1268.7	1273	1278	nm
Center Wavelength (HBr)	λ_c	-	1343	-	nm
Center Wavelength (H ₂ O)	λ_c	1368.59	1392	-	nm
Center Wavelength (NH ₃)	λ_c	1512	1531	-	nm
Center Wavelength (C ₂ H ₂)	λ_c	-	1532.68	-	nm
Center Wavelength (CO)	λ_c	-	1567	-	nm
Center Wavelength (H ₂ S)	λ_c	-	1578	-	nm
Center Wavelength (CO ₂)	λ_c	1580	1998	2004	nm
Center Wavelength (C ₂ H ₄)	λ_c	1620	1627	-	nm
Center Wavelength (CH ₄)	λ_c	1647	1651	1653.7	nm
Center Wavelength (HCl)	λ_c	-	1742	-	nm
Optical Output Power	P _O	10	-	-	mW
Threshold Current	I _{TH}	-	7	25	mA
Operating Current	I _{OP}	-	80	500	mA
Laser Reverse Voltage	V _R	-	-	2	V
TEC set temperature	T _S	15	-	35	°C
Laser Forward Voltage	V _F	-	-	3	V
Optical Isolation	ISO	30	-	-	dB
Side-mode Suppression Ratio	SMSR	35	45	-	dB
Spectral Linewidth (FWHM)	LW	-	3	-	MHz
Bandwidth (@-3dB)	BW	-	2.5	-	GHz
PD Reverse Voltage	V _{RPD}	-	5	10	V
PD Forward Current	I _{FPD}	-	1.1	5	mA
PD Monitor Dark Current (V _r =-5 V)	I _D	-	0.01	0.1	μA
TEC Current	I _{TEC}	-	-	1.5	A
TEC Voltage	V _{TEC}	-	-	3.5	V
Thermistor Resistance(25°C)	R _{TH}	9.5	10	10.5	KΩ
Lead Soldering Time(<260°C)	-	-	-	10	Sec
Operating Temperature Range	-	-5	25	70	°C
Storage Temperature	T _S	-40	-	85	°C

Mechanical Dimensions



PIN Definition



Ordering Information

SWLD-	□ □ □ □	□ □	□	□	□	□
	Wavelength	Power	Fiber type	Pigtail Type	Pigtail length	Connector
SWLD-	1273:1273nm	01: 1mW	0: SMF-28e	0: 250μm bare fiber	1: 50cm	0: None
	1392: 1392nm	05: 5mW	1: PMF-1310	1:900μm loose tube	2: 100cm	1: FC/UPC
	1512:1512nm	10:10mW	2:PMF-1550	2:900μm tight tube	3: 150cm	2: FC/APC
	1532: 1532.68nm	20:20mW	C: Customized	C: Customized	4: 200cm	3: SC/UPC
	1567:1567nm	CC: Customized			C: Customized	4: SC/APC
	1580: 1580nm					5: LC/UPC
	1627:1627nm					6: LC/APC
1653: 1653.7nm					C: Customized	
Example of Ordering Form: SWLD-1273100222-L1						
SWLD-	1273	10	0	2	2	2
	1273.55nm	10mW	SMF-28e	900 pm tight tube	100cm	FC/APC

Standard Wavelength Selection Guide

Communication & Gas Sensor		Center Wavelength (nm)			Wavelength Resolution	Output Power
Data Center	LAN-WDM Wavelength	1269.23	1273.55	1277.89	±1nm	≥10mW
		1282.26	1286.66	1291.10		
		1295.56	1300.05	1304.58		
		1309.14	1313.73	1318.35		
	M-WDM Wavelength	1267.50	1274.50	1287.50	±1nm	≥10mW
		1294.50	1307.50	1314.50		
		1327.50	1334.50	1347.50		
		1354.50	1367.50	1374.50		
Fiber Communication DFB Chip	CWDM Wavelength	1270.00	*ITU Grid Wavelength	1610.00	±1nm	≥10mW
	DWDM C-Band	1527.22	*ITU Grid Wavelength	1565.50	±0.2nm	≥10mW
	DWDM L-Band	1565.50	*ITU Grid Wavelength	1611.79	±0.2nm	≥10mW
	Other Communication Wavelength	1577.00				≥10mW
		1267.00	1274.00	1287.00	±0.2nm	≥10mW
		1294.00	1297.00	1307.00		
		1314.00	1327.00	1334.00		
		1347.00	1354.00	1501.00		
		1614.00	1620.00	1622.00		
			1625.00	1650.00		
1260.00	1320.00	1380.00	±0.2nm	≥10mW		
1506.00	1514.00	1519.00				
Gas Sensor	HF	1268.70	1273.00	1278.00	±0.1nm	≥10mW
	HBr	1343.00				
	H ₂ O	1368.59	1392.00		±0.1nm	≥10mW
	NH ₃	1512.00	1531.00		±0.1nm	≥10mW
	N ₂ O	1521.00			±0.1nm	≥10mW
	C ₂ H ₂	1532.68			±0.1nm	≥10mW
	CO	1567.00			±0.1nm	≥10mW
	H ₂ S	1578.00	1590.00		±0.1nm	≥10mW
	C ₂ H ₄	1620.00	1627.00		±0.1nm	≥10mW
	CH ₄	1647.00	1651.00	1653.70	±0.1nm	≥10mW

* Please refer the Ref. 2

Standard Wavelength Reference Table

(C/L: On ITU Grid, H/Q: 50 GHz Offset)

Channel	f(GHZ)	λ(nm)	Channel	f(GHZ)	λ(nm)	Channel	f(GHZ)	λ(nm)	Channel	f(GHZ)	λ(nm)
L48	184800	1622.25	Q79	187950	1595.06	C11	191100	1568.77	H42	194250	1543.33
Q48	184850	1621.81	L80	188000	1594.64	H11	191150	1568.36	C43	194300	1542.94
L49	184900	1621.38	Q80	188050	1594.22	C12	191200	1567.95	H43	194350	1542.54
Q49	184950	1620.94	L81	188100	1593.79	H12	191250	1567.54	C44	194400	1542.14
L50	185000	1620.50	Q81	188150	1593.37	C13	191300	1567.13	H44	194450	1541.75
Q50	185050	1620.06	L82	188200	1592.95	H13	191350	1566.72	C45	194500	1541.35
L51	185100	1619.62	Q82	188250	1592.52	C14	191400	1566.31	H45	194550	1540.95
Q51	185150	1619.19	L83	188300	1592.10	H14	191450	1565.90	C46	194600	1540.56
L52	185200	1618.75	Q83	188350	1591.68	C15	191500	1565.50	H46	194650	1540.16
Q52	185250	1618.31	L84	188400	1591.26	H15	191550	1565.09	C47	194700	1539.77
L53	185300	1617.88	Q84	188450	1590.83	C16	191600	1564.68	H47	194750	1539.37
Q53	185350	1617.44	L85	188500	1590.41	H16	191650	1564.27	C48	194800	1538.98
L54	185400	1617.00	Q85	188550	1589.99	C17	191700	1563.86	H48	194850	1538.58
Q54	185450	1616.57	L86	188600	1589.57	H17	191750	1563.45	C49	194900	1538.19
L55	185500	1616.13	Q86	188650	1589.15	C18	191800	1563.05	H49	194950	1537.79
Q55	185550	1615.70	L87	188700	1588.73	H18	191850	1562.64	C50	195000	1537.40
L56	185600	1615.26	Q87	188750	1588.30	C19	191900	1562.23	H50	195050	1537.00
Q56	185650	1614.83	L88	188800	1587.88	H19	191950	1561.83	C51	195100	1536.61
L57	185700	1614.39	Q88	188850	1587.46	C20	192000	1561.42	H51	195150	1536.22
Q57	185750	1613.96	L89	188900	1587.04	H20	192050	1561.01	C52	195200	1535.82
L58	185800	1613.52	Q89	188950	1586.62	C21	192100	1560.61	H52	195250	1535.43
Q58	185850	1613.09	L90	189000	1586.20	H21	192150	1560.20	C53	195300	1535.04
L59	185900	1612.65	Q90	189050	1585.78	C22	192200	1559.79	H53	195350	1534.64
Q59	185950	1612.22	L91	189100	1585.36	H22	192250	1559.39	C54	195400	1534.25
L60	186000	1611.79	Q91	189150	1584.95	C23	192300	1558.98	H54	195450	1533.86
Q60	186050	1611.35	L92	189200	1584.53	H23	192350	1558.58	C55	195500	1533.47
L61	186100	1610.92	Q92	189250	1584.11	C24	192400	1558.17	H55	195550	1533.07
Q61	186150	1610.49	L93	189300	1583.69	H24	192450	1557.77	C56	195600	1532.68
L62	186200	1610.06	Q93	189350	1583.27	C25	192500	1557.36	H56	195650	1532.29
Q62	186250	1609.62	L94	189400	1582.85	H25	192550	1556.96	C57	195700	1531.90
L63	186300	1609.19	Q94	189450	1582.44	C26	192600	1556.55	H57	195750	1531.51
Q63	186350	1608.76	L95	189500	1582.02	H26	192650	1556.15	C58	195800	1531.12
L64	186400	1608.33	Q95	189550	1581.60	C27	192700	1555.75	H58	195850	1530.72
Q64	186450	1607.90	L96	189600	1581.18	H27	192750	1555.34	C59	195900	1530.33
L65	186500	1607.47	Q96	189650	1580.77	C28	192800	1554.94	H59	195950	1529.94
Q65	186550	1607.04	L97	189700	1580.35	H28	192850	1554.54	C60	196000	1529.55
L66	186600	1606.60	Q97	189750	1579.93	C29	192900	1554.13	H60	196050	1529.16
Q66	186650	1606.17	L98	189800	1579.52	H29	192950	1553.73	C61	196100	1528.77
L67	186700	1605.74	Q98	189850	1579.10	C30	193000	1553.33	H61	196150	1528.38
Q67	186750	1605.31	L99	189900	1578.69	H30	193050	1552.93	C62	196200	1527.99
L68	186800	1604.88	Q99	189950	1578.27	C31	193100	1552.52	H62	196250	1527.60
Q68	186850	1604.46	LOO	190000	1577.86	H31	193150	1552.12	C63	196300	1527.22
L69	186900	1604.03	Q00	190050	1577.44	C32	193200	1551.72	H63	196350	1526.83
Q69	186950	1603.60	C01	190100	1577.03	H32	193250	1551.32	C64	196400	1526.44
L70	187000	1603.17	H01	190150	1576.61	C33	193300	1550.92	H64	196450	1526.05
Q70	187050	1602.74	C02	190200	1576.20	H33	193350	1550.52	C65	196500	1525.66
L71	187100	1602.31	H02	190250	1575.78	C34	193400	1550.12	H65	196550	1525.27
Q71	187150	1601.88	C03	190300	1575.37	H34	193450	1549.72	C66	196600	1524.89
L72	187200	1601.46	H03	190350	1574.95	C35	193500	1549.32	H66	196650	1524.50
Q72	187250	1601.03	C04	190400	1574.54	H35	193550	1548.91	C67	196700	1524.11
L73	187300	1600.60	H04	190450	1574.13	C36	193600	1548.51	H67	196750	1523.72
Q73	187350	1600.17	C05	190500	1573.71	H36	193650	1548.11	C68	196800	1523.34
L74	187400	1599.75	H05	190550	1573.30	C37	193700	1547.72	H68	196850	1522.95
Q74	187450	1599.32	C06	190600	1572.89	H37	193750	1547.32	C69	196900	1522.56
L75	187500	1598.89	H06	190650	1572.48	C38	193800	1546.92	H69	196950	1522.18
Q75	187550	1598.47	C07	190700	1572.06	H38	193850	1546.52	C70	197000	1521.79
L76	187600	1598.04	H07	190750	1571.65	C39	193900	1546.12	H70	197050	1521.40
Q76	187650	1597.62	C08	190800	1571.24	H39	193950	1545.72	C71	197100	1521.02
L77	187700	1597.19	H08	190850	1570.83	C40	194000	1545.32	H71	197150	1520.63
Q77	187750	1596.76	C09	190900	1570.42	H40	194050	1544.92	C72	197200	1520.25
L78	187800	1596.34	H09	190950	1570.01	C41	194100	1544.53	H72	197250	1519.86
Q78	187850	1595.91	C10	191000	1569.59	H41	194150	1544.13			
L79	187900	1595.49	H10	191050	1569.18	C42	194200	1543.73			