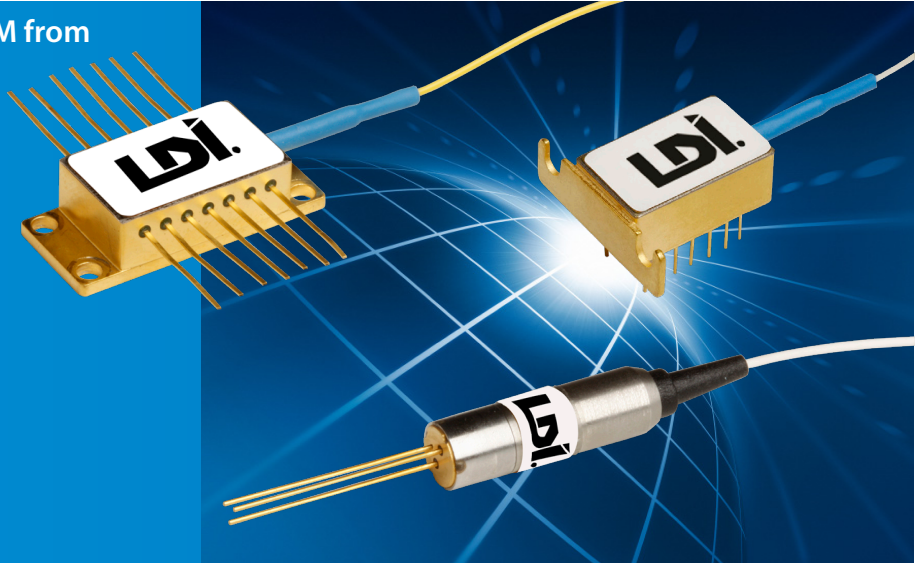


- Wavelengths: All C & L Band DWDM from 1530nm to 1610nm
- Optical Power (CW) Up to 20 mW
- Optional Optical Isolator
- Typical Applications:
  - DWDM
  - Sensors
  - Seed Lasers
- Packaging
  - 14 PIN Butterfly or DIL with TEC
- RoHS Compliant



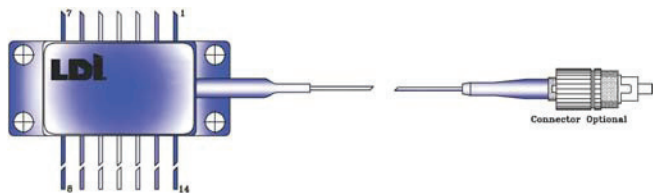
The SCW 1590 series laser diode module is a 20mW 1550nm DFB laser diode packaged in a 14 pin butterfly or DIL. The laser diode is optically coupled and aligned to a Panda PM fiber pigtail and includes a back facet monitor detector, thermoelectric cooler and an electrically isolated temperature sensing thermistor. An optical isolator is optional. Multiple connector choices are available for the PM pigtail termination and the connector can be aligned to either the fast axis or slow axis. As an option, the laser can be packaged into a 3 pin coax package but will not include a TEC or a thermistor. The output power from a coax package will be limited to 10mW. Please consult LDI regarding the coax option.

**Characteristics:  $T_{amb} = -30^{\circ}$  to  $70^{\circ}\text{C}$  (cooled package only);  $T_{id} = +25^{\circ}\text{C}$**

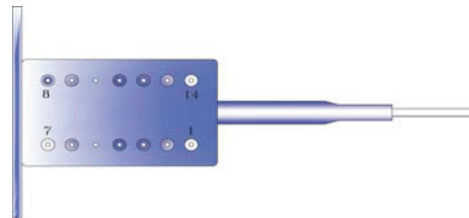
PARAMETERS	SYMBOL	CONDITIONS	Min	Typ	Max	Units
Optical Power (Fiber)	$P_o$	$T_{id} = 25^{\circ}\text{C}$	20			mW
Threshold Current	$I_{th}$	$T_{id} = 25^{\circ}\text{C}$		14	20	mA
Drive Current	$I_f$	$T_{id} = 25^{\circ}\text{C}, P_o = 20\text{mW}$		150		mA
Forward Voltage	$V_f$	$T_{id} = 25^{\circ}\text{C}, P_o = 20\text{mW}$		1.1	1.3	V
Center Wavelength	$\lambda$	$T_{id} = 25^{\circ}\text{C}, P_o = 20\text{mW}$	1530	1550	1570	nm
Side Mode Suppression	SMSR	$T_{id} = 25^{\circ}\text{C}, P_o = 5\text{mW}$	35	40		dB
RIN	RIN	$T_{id} = 25^{\circ}\text{C}, P_o = 5\text{mW}$		140		dB/Hz
Wavelength / Temp C	$d\lambda/dT$	$T_{id} = 10\text{-}50^{\circ}\text{C}, P_o = 20\text{mW}$		0.09		nm / $^{\circ}\text{C}$
Polarization Extinction	$P_R$	$T_{id} = 25^{\circ}\text{C}, P_o = 20\text{mW}$	15	20		dB
Monitor Current	$I_{mon}$	$P_o = 20\text{mW CW}, V_R = -5\text{VDC}$	50		1000	$\mu\text{A}$
Monitor Dark Current	$I_{md}$	$P_o = 0\text{mW CW}, V_R = -5\text{VDC}$			10	nA
Thermistor Resistance	R	$T_{id} = 25^{\circ}\text{C}$	9.9	10.0	10.1	K $\Omega$
Thermistor B Constant	B	B25/50	3910.9	3950.0	3989.9	K
Cooling Capacity	$\Delta T$	$T_{id} = 25^{\circ}\text{C}, P_o = 20\text{mW}$	45			$^{\circ}\text{C}$
TEC Voltage	$V_{tec}$	$T_{id} = 25^{\circ}\text{C}, P_o = 20\text{mW}$		1.2	1.5	V
TEC Current	$I_{tec}$	$T_{id} = 25^{\circ}\text{C}, P_o = 20\text{mW}$		650	850	mA
Fiber Length	L		1			Meter
Fiber Buffer Diameter	$F_{OD}$		240	245	250	$\mu\text{m}$
Operating Temperature Range	$T_{op}$	$T_{id} = 25^{\circ}\text{C}, P_o = 20\text{mW}$	-30		+70	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	Non operating	-40		+70	$^{\circ}\text{C}$

## 14 Pin Butterfly Package

## 14 Pin DIP Package



Top view



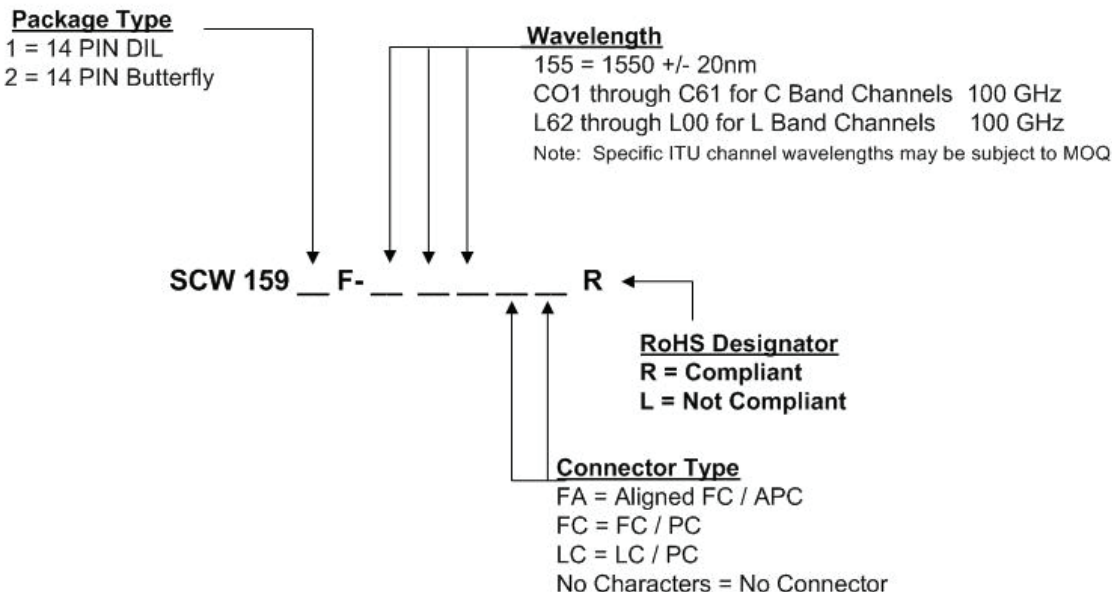
Bottom view

Pin Assignments			
14 Pin Butterfly Package		14 Pin DIP Package	
Pin	Function	Pin	Function
1, 2	Thermistor	1	Cooler anode (+)
3	Laser Cathode (-)	2,3,4,6,13	No connection
4	BF Monitor Anode (+)	5	Ground, laser anode (+)
5	BF Monitor Cathode (-)	7	Detector cathode (-)
6	TEC (+)	8	Detector anode (+)
7	TEC (-)	9	Laser cathode (-)
8, 9	Case Ground	10	Ground
10, 12, 14	NC	11, 12	Thermistor
11,13	Laser Anode (+)	14	Cooler cathode (-)

Detailed package drawings are available on LDI website.

## Part Ordering Diagram

When ordering, refer to the numbering diagram below.



Products can be ordered directly from OSI Laser Diode, Inc. or its representatives.

For a complete listing of representatives, visit our website at

[www.laserdiode.com](http://www.laserdiode.com)

### Personal Hazard and Handling Precautions:

Handle optical fiber with normal care, avoiding stretch, tension, twist, kink or bend abuse. ESD precautions apply. Normal aversion reactions will protect from radiation hazards to the eye associated with devices of this kind.

IEC Class 3R lasers when operated at rated conditions.

### Notice:

OSI Laser Diode, Inc. reserves the right to make changes to the products or information contained herein without notice. No liability is assumed as a result of their use or application.

### Warranty:

Please refer to your product purchase agreement for complete details or check with your OSI Laser Diode sales representative.