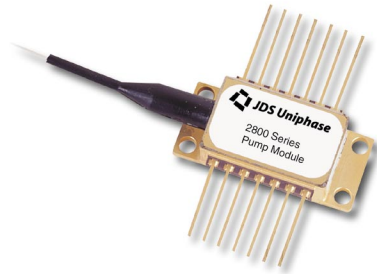


Product Bulletin



The JDS Uniphase 2800 Series 980 nm pump module represents the latest in chip and module technology. It utilizes our 6540 chip that offers the highest power with improved efficiency. The planar package with chip on subcarrier has superior performance for operating powers and operating current. The hermetically sealed package meets the stringent requirements of the telecommunications industry as well as the intent of Telcordia™ GR-468-CORE for hermetic 980 nm pump modules.

The 2800 Series pump module uses fiber Bragg grating stabilization to “lock” the emission wavelength and provides a noise-free narrow band spectrum even under changes in temperature, drive current and optical feedback. Wavelength selection is available for applications requiring the highest performance in spectrum control with the highest powers available.

The combination of planar packaging with excellent thermal performance and the high performance 6540 chip is expected to set the trend for next generation of EDFA designs requiring the ultimate in distance and bandwidth.

2800 Series Pumps

Up to 360 mW fiber Bragg grating stabilized 980 nm pump modules

Key Features

- Very high power to 360 mW
- Low profile planar package
- Fiber Bragg grating stabilized
- Wavelength selection available
- Integrated TEC and thermistor

Applications

- Next generation DWDM EDFAs requiring the highest power with “locked” wavelength emission
- Enables reduced pump count EDFA architectures
- Very long distance CATV trunks and very high node count distribution
- Suitable for very high ambient temperatures

Compliance

- Telcordia™ GR-468-CORE

Absolute Maximum Ratings

Parameter	Minimum	Maximum
Laser diode		
Forward current	-	800 mA
Current transient at 1µs max.	-	1 A
Reverse voltage	-	2.5 V
Monitor photodiode		
Reverse voltage	-	20 V
Forward current	-	10 mA
Thermoelectric cooler		
Voltage	-	4 V
Current	-	2.8 A
Package		
Storage temperature	-40 °C	75 °C
Operating temperature	-20 °C	75 °C
Fiber pigtail		
Fiber temperature	-40 °C	85 °C
Axial pull force	-	5 N
Side pull force	-	2.5 N
Bend radius	16 mm	-

Operating Power

Product Number	Operating Power P _{op} (mW)	Maximum Operating Current I _{op} (mA)	Maximum Kink-Free Power P _{max} (mW)	Maximum Kink-Free Current I _{max} (mA)
SDLO-2800-310	280	560	310	650
SDLO-2800-320	290	590	320	690
SDLO-2800-330	300	620	330	770
SDLO-2800-340	310	650	340	800
SDLO-2800-350	315	670	350	800
SDLO-2800-360	325	700	360	800

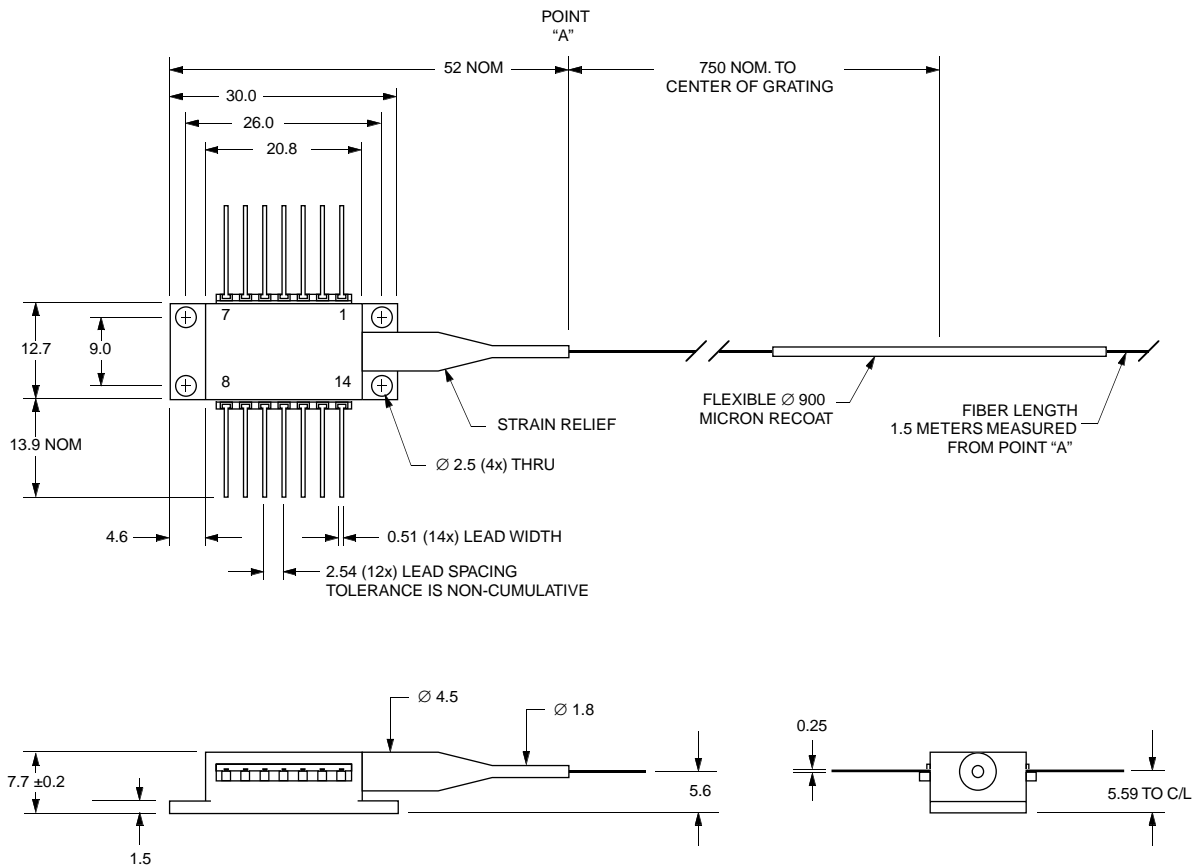
Electro-Optical Performance

Parameter	Symbol	Test Condition	Minimum	Maximum
Spectrum				
Peak wavelength ¹	λ_c	T _{ambient} = 22±3 °C	974 nm	985 nm
Power in band	P _{band}	974 nm < λ_c < 985 nm	90%	-
Spectral width	$\Delta\lambda_{RMS}$		-	2.0 nm
Spectral shift with temperature	$\Delta\lambda/\Delta^\circ T$		-	0.02 nm/°C
Optical power stability	$\Delta P_{opt}/\Delta t$	25 °C, I _{op} , t=60 seconds	-	0.5%
Laser Diode				
Threshold current	I _{th}		-	25 mA
Forward voltage	V _f	I _{op}	-	2.5 volts
Monitor Photodiode				
Responsivity			1 µA/mW	20 µA/mW
Thermoelectric Cooler Operation				
TEC cooling capacity	ΔT_{TEC}	P _{TEC} ≤ 6.75 W, I _f = I _{op,EOL} , T _{LD} = 25 °C	50 °C	-
TEC current	I _{TEC}	ΔT = 50 °C, I _f = I _{op,EOL} , T _{LD} = 25 °C	-	1.9 amps
TEC voltage	V _{TEC}	ΔT = 50 °C, I _f = I _{op,EOL} , T _{LD} = 25 °C	-	2.5 volts
Total module power consumption	P _{mod,tot}	ΔT = 50 °C, I _f = I _{op,EOL} , T _{LD} = 25 °C	-	6.75 W
Thermistor resistance	R _{th}	T = 25 °C	9.5 KΩ	10.5 KΩ
Thermistor Constant	B		3600 K	4200 K
Fiber Pigtail			Specification	
Type			SM	
Mode-field diameter			6.5±1 µm	
Cladding diameter			125±2 µm	
Jacket diameter			250 µm	

1. Wavelength selection available.
 2. All specifications are at BOL for an operating temperature range for T_{case} = 0 to 75 °C and back reflection < -50 dB.

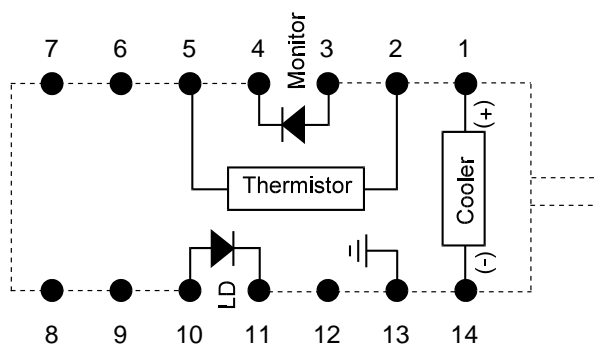
Package Dimensions

Dimensions in millimeters except where indicated



Lead Connection

Electrical Schematic
(Package Viewed From Top)



Lead Connections

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

User Safety

Safety and Operating Considerations

The laser light emitted from this laser diode is invisible and may be harmful to the human eye. Avoid looking directly into the fiber when the device is in operation.

CAUTION: THE USE OF OPTICAL INSTRUMENTS WITH THIS PRODUCT WILL INCREASE EYE HAZARD.

Operating the laser diode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum peak optical power cannot be exceeded.

CW laser diodes may be damaged by excessive drive current or switching transients. When using power supplies, the laser diode should be connected with the main power on and the output voltage at zero. The current should be increased slowly while monitoring the laser diode output power and the drive current.

Careful attention to heatsinking and proper mounting of this device is required to insure specified performance over its operating life. To maximize thermal transfer to the heatsink, the heatsink mounting surface must be flat to within .001" and the mounting screws must be torqued down to 1.5 in.-lb.

ESD PROTECTION — Electro-static discharge is the primary cause of unexpected laser diode failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces, and rigorous anti-static techniques when handling laser diodes.

Ordering Information

For more information on this or other products and their availability, please contact your local JDS Uniphase sales representative or JDS Uniphase directly at 877 550-JDSU in North America, or via e-mail at jdsu.sales@jdsuniphase.com. For contact information in Europe and Asia, please visit our Web site at www.jdsuniphase.com.



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www.jdsuniphase.com

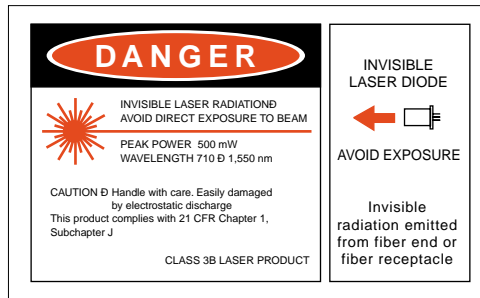
21 CFR 1040.10 Compliance

Because of the small size of these devices, each of the labels shown is attached to the individual shipping container. They are illustrated here to comply with 21 CFR 1040.10 as applicable under the radiations control for health and safety act of 1968.

SERIAL NUMBER IDENTIFICATION LABEL



OUTPUT POWER AND LASER EMISSION INDICATOR LABEL



All statements, technical information and recommendations related to the products herein are based upon information believed to be reliable or accurate. However, the accuracy or completeness thereof is not guaranteed, and no responsibility is assumed for any inaccuracies. The user assumes all risks and liability whatsoever in connection with the use of a product or its application. JDS Uniphase reserves the right to change at any time without notice the design, specifications, function, fit or form of its products described herein, including withdrawal at any time of a product offered for sale herein. JDS Uniphase makes no representations that the products herein are free from any intellectual property claims of others. Please contact JDS Uniphase for more information. JDS Uniphase and the JDS Uniphase logo are trademarks of JDS Uniphase Corporation. Other trademarks are the property of their respective holders. Copyright JDS Uniphase Corporation. All rights reserved.
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