1550nm DFB Pulsed Laser For OTDR

60mW, 1nm, integrated with isolator and monitor

DATASHEET

BUY NOW



The DFBD series fiber-coupled laser diodes are designed with a GaAs quantum well structure integrated with a grating configuration. These diodes feature a built-in photodiode for precise monitoring and feedback control of the laser's output power. Housed in standard TO packages, these diodes are pigtailed to a 1-meter long single-mode fiber terminated with an FC/APC connector. Each unit undergoes rigorous testing prior to shipment to ensure reliability.

Additionally, we offer a cost-effective, high-performance feedback control driver kit that maintains constant and adjustable output power, along with an externally cooled mounting fixture to stabilize the output wavelength. It is available in module or benchtop.

Features

- Built-in Optical Isolator
- Low Capacitance
- High Stability of DFB Structure
- Integrated Tap Monitor

Applications

- Instrument
- Analog/Digital Transmission



Specifications

Parameter	Min	Typical	Max	Unit
Forward Voltage	-	-	3.5	V
Threshold Current	-	10	15	mA
Optical Output Power From SM Fiber	50	60	-	mW
Center Wavelength	1540	1550	1560	nm
Spectral Width	-	-	1	nm
Rise Time	-	0.5	1.0	ns
Fall Time	-	0.5	1.0	ns
Monitor Current	0.05	-	2	mA
Absolute Maximum Ratings				
Pulsed Forward Current	-	-	750	mA
Reverse Voltage	-	-	2	V
Reverse Voltage (monitor PD)	-	-	10	V
Reverse Current (monitor PD)	-	-	2	mA
Operating Case Temperature	0	-	60	℃
Storage Temperature	-40	-	85	℃
Lead Soldering Temperature	-	-	260(10s)	℃
Relative Humidity (noncondensing)	-	-	85	%

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

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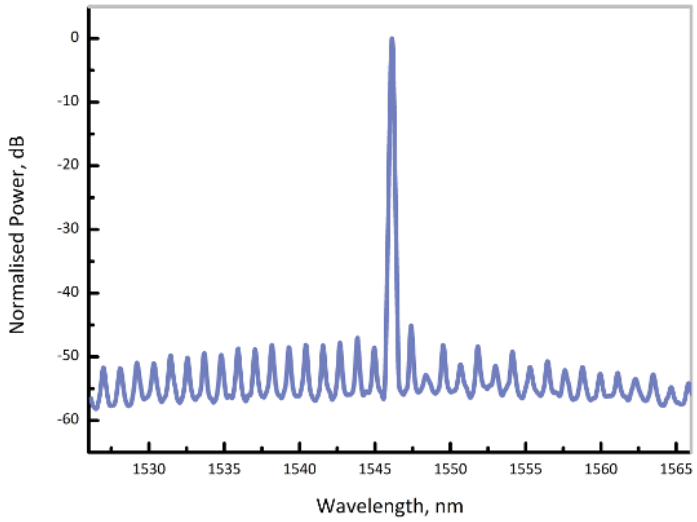
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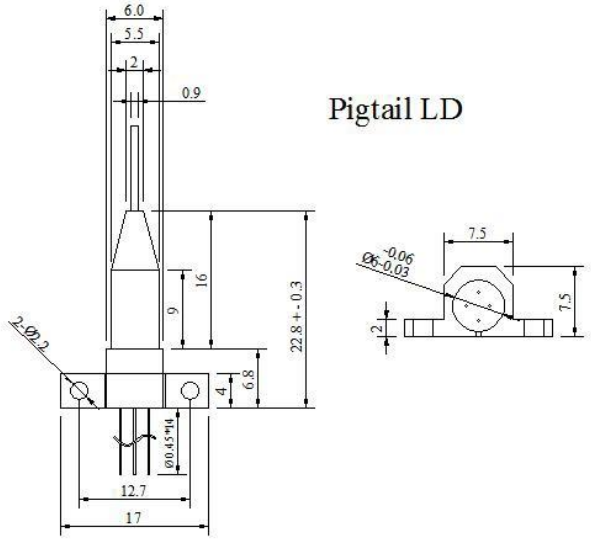
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Typical Spectrum

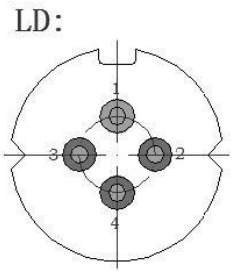


Mechanical Dimension (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

PIN assignment



Type A:
【1】LD + /CASE
【2】LD −
【3】PD +
【4】PD −

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Ordering Information (Part Number)

	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Wavelength**	**Power**	**Bandwidth**	**Isolator**	**Monitor**	**TEC Cooling**	**Package**	**Fiber Type**	**Fiber Buffer**	**Fiber Length**	**Connector** [1]
DFBD-	1550nm = 55	≥60mW = G	2.5Gb/s = 2	One Stage = 1 Dual Stage = 2 None = N	Yes = 1 No = 2	No = 1 Yes = 2	Type A = A	SM28 = 1 PM1550 = 5 PM1310= 3 Special = 0	0.9mm Tube = 3 Special = 0	0.5m = 2 0.25m = 1 1.0 m = 3 1.5 m = 5 Special = 0	FC/APC = 3 FC/PC = 2 Non = 1 SC/PC = 4 SC/APC = 5 LC/PC = 7 LC/UPC = U Special = 0

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.
The default PM fiber connector is **2.0 mm narrow key, with the fiber slow axis aligned to the key**.

Caution Electrostatic Sensitivity



- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots





Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 µm.

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
*IEC is a registered trademark of the International Electrotechnical Commission.

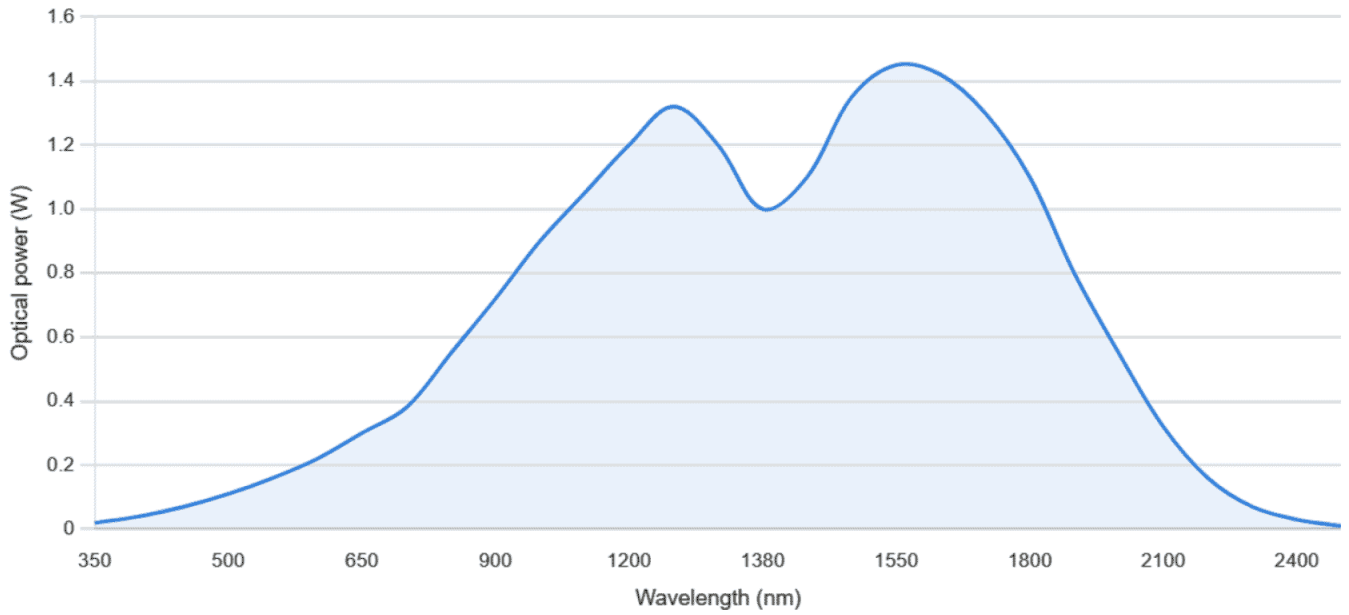
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Regular Single Mode / Polarization Maintaining Fiber Optical Power Handing vs Wavelength



Single mode fiber optical power is limited by nonlinear effects in addition to absorption that increase loss and generate heat. The curve shows the approximate safe CW power envelope for standard single-mode fiber. Actual limits depend on fiber design, core size, length, and laser characteristics. Specialty fibers can significantly increase the power limit.

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