

PINAMP

optical receiver modules



4 Mb/s, 52 Mb/s, 155 Mb/s, 622 Mb/s,
and 1 Gb/s data rates

High responsivity and low dark current
InGaAs pin detector

High sensitivity

Wide dynamic range

Single supply operation

Hermetic package

Single ended

Differential output (1 Gb/s only)

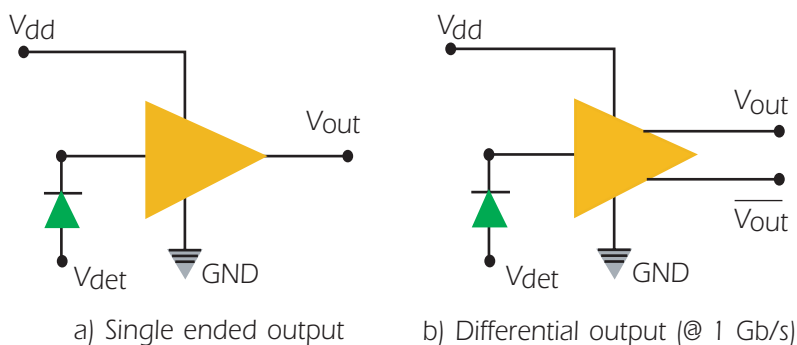
Applications:

- Supervisory channel
- Long haul transmission networks
- Short haul transmission networks
- DWDM transponders
- SDH/SONET single mode applications
- Instrumentation and testing
- Data communications
- Gigabit ethernet

Laser Diode Incorporated PINAMPs provide a low cost, high performance miniature optical receiver module integrating a high speed, high responsivity, low leakage current InGaAs photodiode with a GaAs transimpedance amplifier. The transimpedance amplifier incorporates automatic gain control providing high optical overload performance. The receiver package offers high reliability satisfying Telcordia GR-468-CORE specifications.

The pigtailed receivers are available with industry standard FC, LC, SC, and ST[®] connectors. Custom connectors are also available.

Circuit Diagram



Absolute Maximum Ratings

	Units	Max
Detector Reverse Voltage	V	20
Detector Reverse Current	mA	10
Module Supply Voltage	V	+5.5

Performance @ 25° C (+/- 5.0VDC)

PARAMETER	UNIT	4 Mb/s			52 Mb/s			155 Mb/s			622 Mb/s			LPA 1000PTD 1 Gb/s		
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max
Data Rate	Mb/s	4			52			155			622			1000		
Sensitivity @ 10 ⁻⁹ (BER) **	dBm	-48	-50		-41	-43		37	-39		-31	-33		-24	-27	
Overload @ -5 VDC	dBm	-4			0			0			0			0		
Transfer Gain																
@1310	V/W	40K			25K			12K			4K			4K*		
Dark Current @ -5 VDC	nA	0.5			0.5			0.5			0.5			0.5		
Responsivity @ -5 VDC																
@1310	A/W	0.85			0.85			0.85			0.85			0.85		
@1550		0.9			0.9			0.9			0.9			0.9		
Output Impedance	Ohms	30	60		30	60		30	60		30	60		30	60	
Operating Temperature	°C	-40	85		-40	85		-40	85		-40	85		0	70	
Storage Temperature	°C	-40	85		-40	85		-40	85		-40	85		-40	85	
Supply Voltage	V	4.75	5.25		4.75	5.25		4.75	5.25		4.75	5.25		4.75	5.25	
Supply Current	mA	30			30			30			30			30		

* Differential

** Sensitivity is calculated using the noise voltage measured at 25°C at the output of a 3-pole Butterworth filter. Sensitivity is specified as the average optical power in dBm measured at 1310nm and T_a = 25°C for a BER of 10⁻⁹.

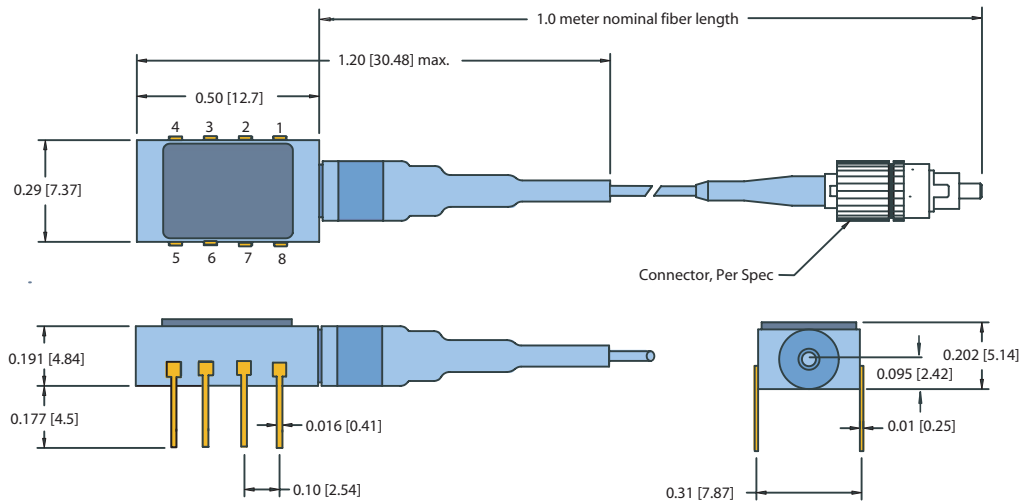
Fiber Specifications

Fibertype	Index Profile	N/A	Nominal Size (um)	Cladding Tolerance	900 um Buffer Material	Fiber Yield Strength (N)	Fiber Bend Radius min. (mm)
Multimode tight buffer	Graded	0.2	50/125/245/900	125 +/-2.0 um	Hytrel	10	30

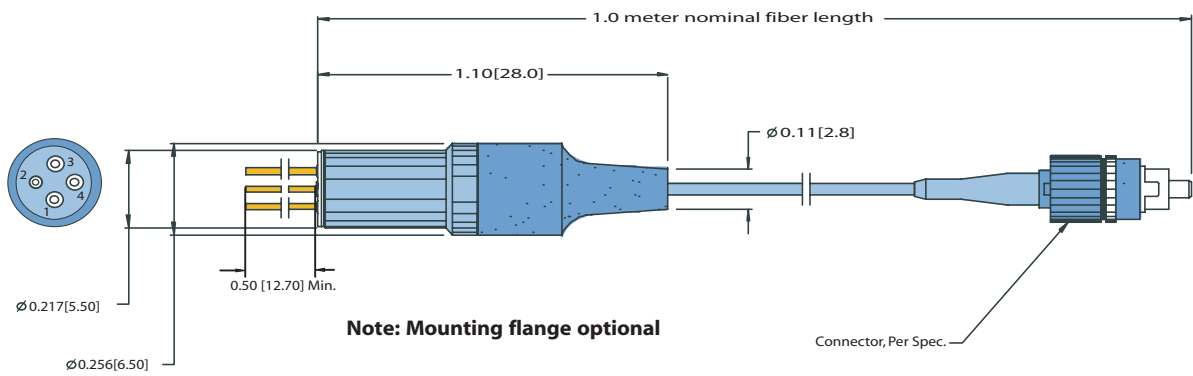
Other fiber types are available. Please contact the Laser Diode Sales Department or your local Laser Diode representative.

Mini-DIL Receiver

PIN ASSIGNMENT	
PIN No.	Description
1	-5 Volts
2,3,5,6,8	Gnd
4	Output
7	+5 Volts

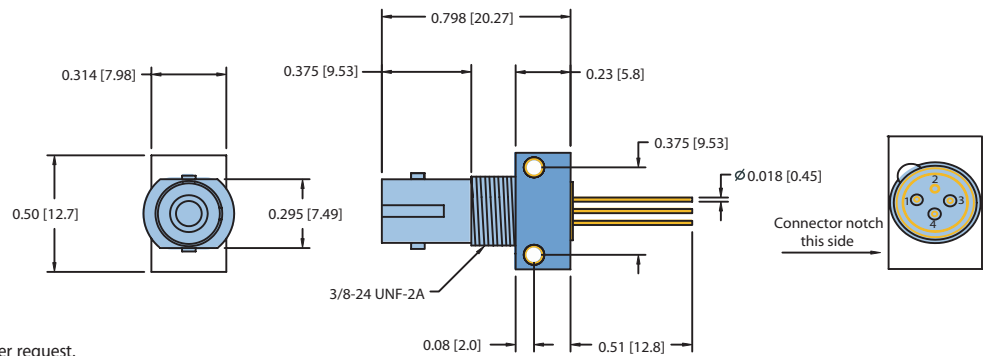


LPA Series - Coax



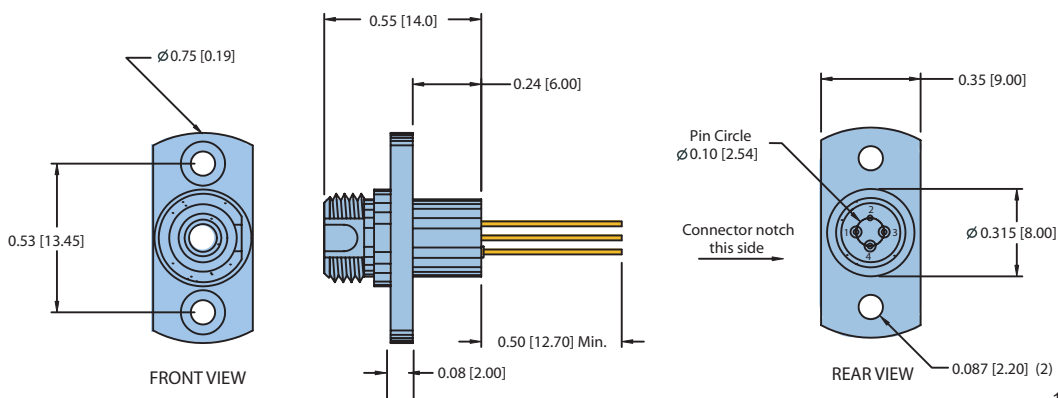
LDST Series - Receptacle

PINOUT TABLE (Receptacle and Coax)				
PINAMP Type	PIN No. 1	PIN No. 2	PIN No. 3	PIN No. 4
A	Output	Gnd (case)	+5 Volts	-5 Volts (or Gnd)
B	+5 Volts	Gnd (case)	Output	-5 Volts
C	Output	Gnd (case)	+5 Volts	Ground
D	Output	Gnd (case)	Output	+5 Volts



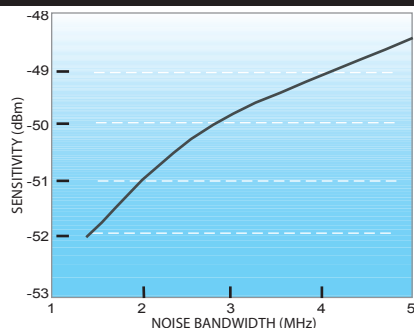
- NOTE: 1. Other pin orientations for receptacles available per customer request.
 2. Dimensions in inches [millimeters].
 3. A, B, C for 4 Mb/s, 52 Mb/s, 155 Mb/s, 622 Mb/s only.
 4. D for LPA 1000 PTD only.

LDFC Series - Receptacle

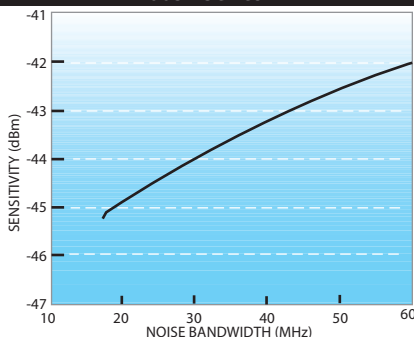


Sensitivity as a Function of Noise Bandwidth (@ 25°C Typical)

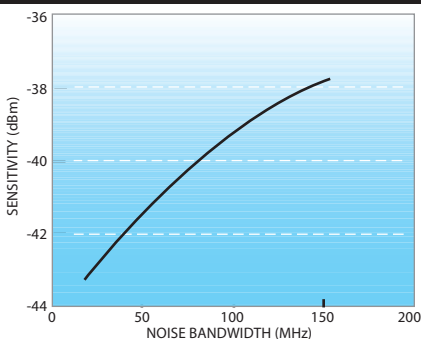
0004 Series



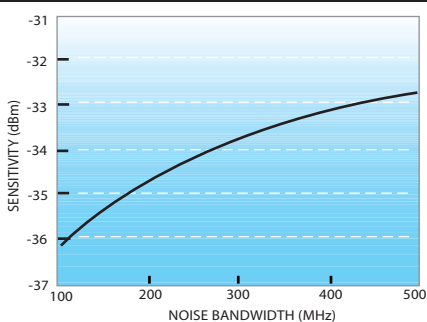
0052 Series



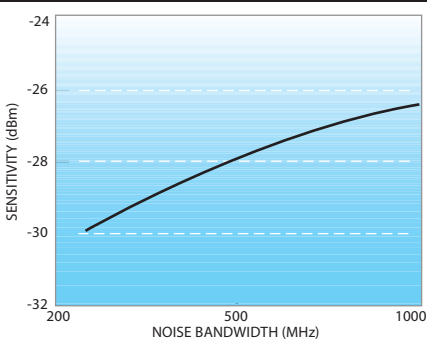
0155 Series



0622 Series



1000 Series



Product Changes

Laser Diode Incorporated reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application.

Handling Precautions

Handle optical fiber with normal care, avoiding stretch, tension, twist, kink, or bend abuse. Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload.

Ordering

Products can be ordered directly from Laser Diode Incorporated or its representatives. When ordering, refer to the information below. For a complete listing of representatives, visit our website at www.laserdiode.com.

Special Orders

Some products can be supplied with performance characteristics to meet unique customer requirements. Contact the Laser Diode Incorporated Sales Department or your local representative to discuss your individual requirements. For a complete listing of representatives, visit our website at www.laserdiode.com.

Ordering Information

Mini-DIL PINAMPs

4 Mb/s, 52 Mb/s,
155 Mb/s, 622 Mb/s

LPAD

Package Type

OXXX

Data Rate

- XX

Connector Type

Coaxial Pigtailed PINAMPs

4 Mb/s, 52 Mb/s, 155 Mb/s,
622 Mb/s, 1000 Mb/s

LPA

Package Type

XXXXPT

Data Rate

X - XX

Pin Out

Connector Type

Receptacle PINAMPs

4 Mb/s, 52 Mb/s,
155 Mb/s, 622 Mb/s
NOTE: No suffix digit = C Pin Out

LDFC

Package Type

OXXX

Data Rate

X

Pin Out

LDST

Package Type

OXXX

Data Rate

X

Pin Out

EXAMPLE: LPAD 0622-FC

Mini-DIL PINAMP at 622 Mb/s with FC connector

Pigtail connector termination designations:

Use FC to indicate an FC/PC type connector
Use LC to indicate an LC/PC type connector
Use SC to indicate an SC/PC type connector
Use ST to indicate an ST® type connector

ST is a trademark of Lucent Technologies Inc.



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