



Laser Diode Incorporated

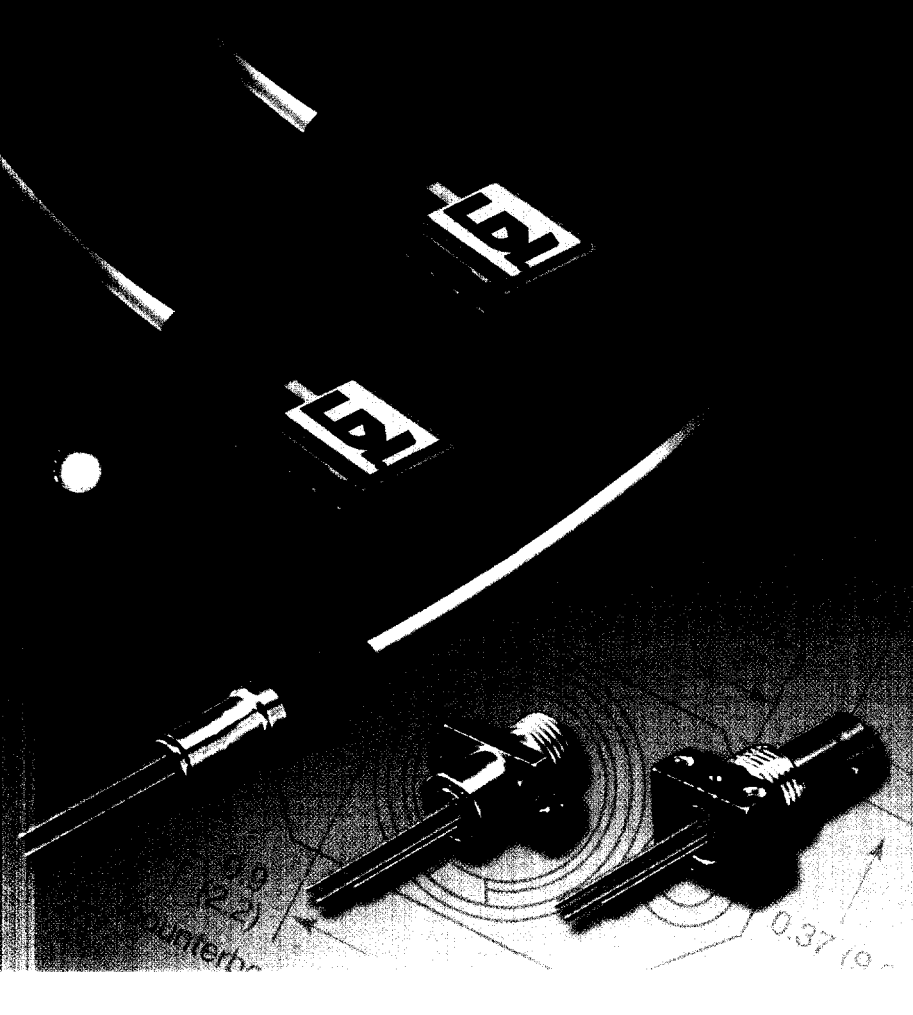
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PINAMP Optical Receiver Modules



**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 or Differential Output

Applications:

- Long haul transmission networks
- Short haul transmission networks
- DWDM transponders
- SDH/SONET single mode applications
- Instrumentation & testing
- Data communications
- Gigabit Ethernet

Laser Diode's PINAMP Product line provides a low cost, high performance miniature optical receiver module integrating our high responsivity, low leakage current and high speed InGaAs photodiode with a GaAs transimpedance amplifier. The transimpedance amplifier incorporates automatic gain control which provides high optical overload performance. The receiver package offers high reliability capable of satisfying Bellcore TA-NWT-00983 specifications.

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

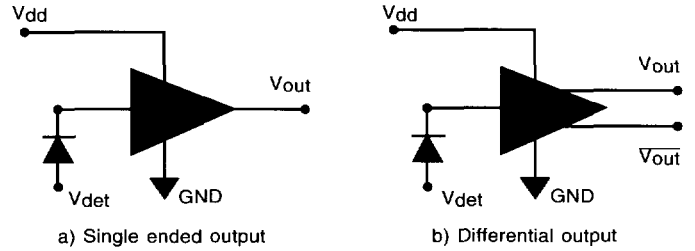
The Laser Diode Inc. range of PINAMP receivers has been designed to meet the requirements of synchronous SONET, SDH and Gbit Ethernet systems operating up to 1.0 Gbit/sec.

These cost effective solutions are available in a wide range of coaxial, receptacle and mini DIL packages – one sure to provide the ideal solution for your receiver design.

Maximum Ratings:

	Min	Typ	Max	Units
Forward Voltage			0.5	V
Reverse Voltage			20	V
Reverse Current			10	mA
Forward Current			10	mA
Supply Voltage	-4.5		+5.5	V

Circuit Diagram

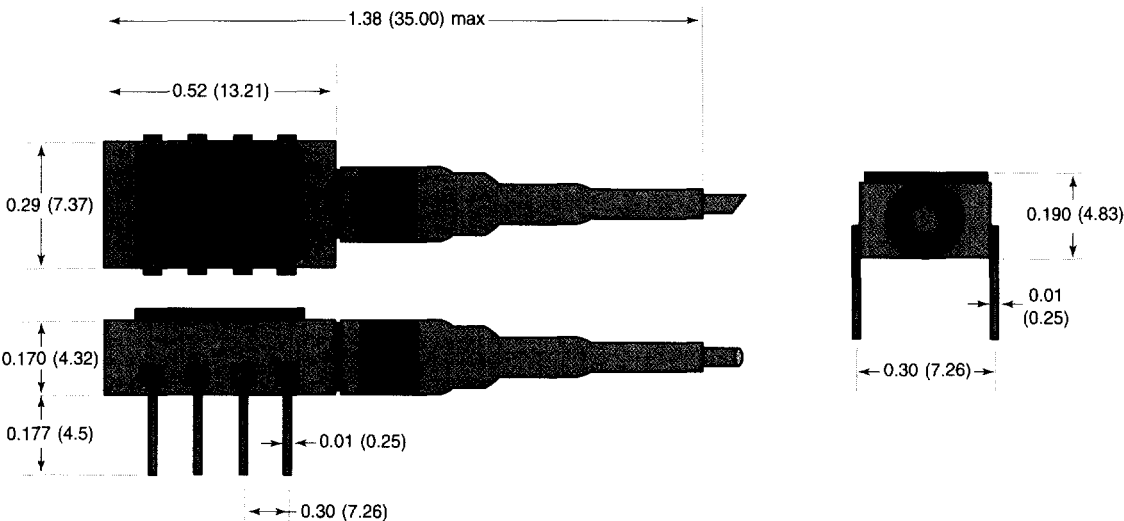


Mini-DIL PINAMPs

PARAMETER	UNIT	LPAD 0052 52 Mb/s			LPAD 0155 155 Mb/s			LPAD 0622 662 Mb/s			LPAD 1000 1 Gb/s		
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max
Data Rate	Mb/s		52		155		622		1000				
Sensitivity	dBm	-41	-43		-37	-39		-31	-34			-27	
Overload	dBm		0			0			0				0
Gain													
@1310nm	V/W		17K		12K		4K		4K*				
Dark Current	nA			5		5		5				5	
Responsivity	A/W												
@1310nm			0.85		0.85		0.85		0.85			0.85	
@1550nm			0.95		0.95		0.95		0.95			0.95	
Output Impedance	Ω	30		60	30		60	30		60		50	
Operating Temperature	°C	-40		+85	-40		+85	-40		+85		0	70
Storage Temperature	°C	-40		+85	-40		+85	-40		+85		-40	+85
Supply Voltage	V	4.75		5.25	4.75		5.25	4.75		5.25		+4.5	

* Differential

Mini DIL Receiver



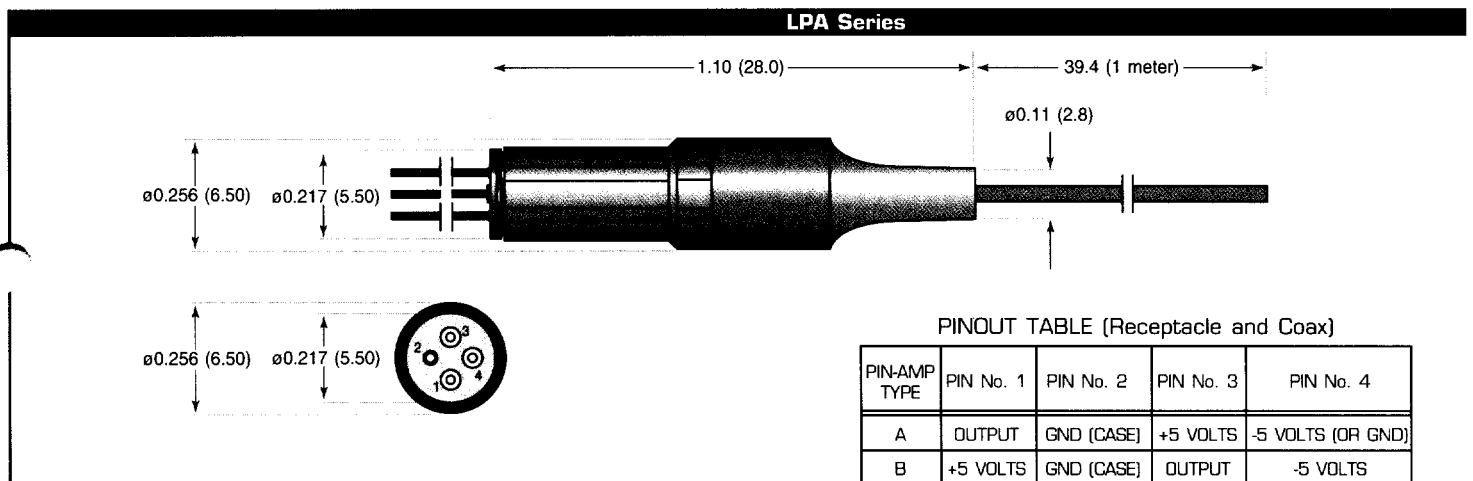
PIN ASSIGNMENT

PIN No.	DESCRIPTION
1	-5 VOLTS
2	GND
3	GND
4	OUTPUT
5	GND
6	GND
7	+5 VOLTS
8	GND

Coaxial PINAMPs and Receptacles

PARAMETER	UNIT	LD FC/ST 0052 LPA 0052PT OC-1 PINAMP			LD FC/ST 0155 LPA 0155PT OC-3/STM-1 PINAMP			LD FC/ST 0622 LPA 0622PT OC-12/STM-4 PINAMP			LD FC/ST 1000 LPA 1000PT Gigabit Ethernet PINAMP (NEW)		
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max
Data Rate	Mb/s		52			155			622			1000	
Sensitivity	dBm	-41	-43		-37	-39		-31	-34			-27	
Overload	dBm		0			0			0			0	
Gain													
@ 1310nm	V/W		17K			12K			4K			4K*	
Dark Current	nA			5			5			5			
Responsivity	A/W												
@ 1310nm			0.85			0.85			0.85			0.85	
@ 1550nm			0.95			0.95			0.95			0.95	
Output Impedance	Ω	30		60	30		60	30		60		50	
Operating Temperature	$^{\circ}\text{C}$	-40		+85	-40		+85	-40		+85		0	
Storage Temperature	$^{\circ}\text{C}$	-40		+85	-40		+85	-40		+85		-40	
Supply Voltage	V	4.75		5.25	4.75		5.25	4.75		5.25		+4.5	

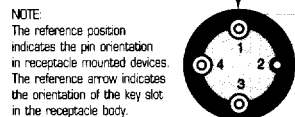
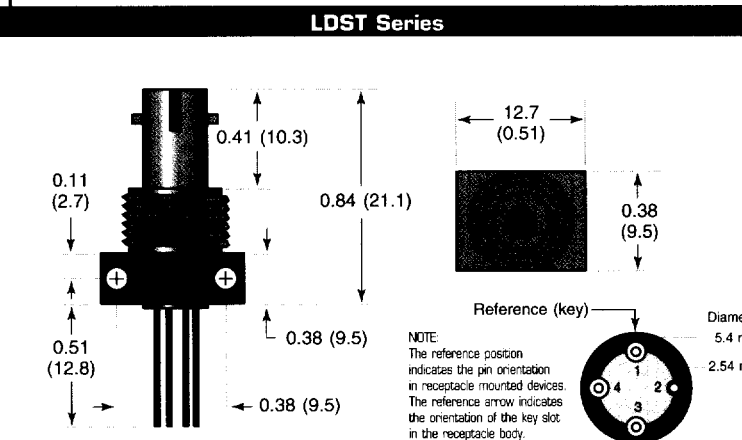
* Differential



PINOUT TABLE (Receptacle and Coax)

PIN-AMP 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 PINOUT AVAILABLE PER CUSTOMER REQUEST.
2. DIMENSIONS IN INCHES (MILLIMETERS).

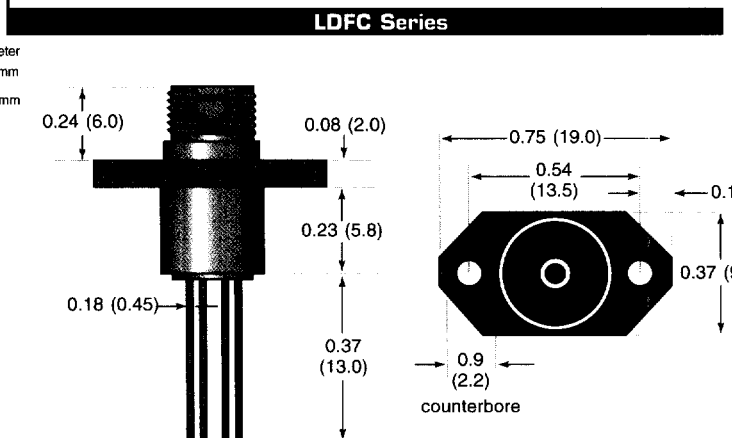


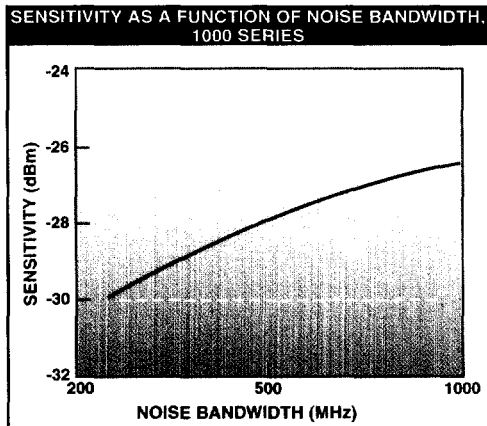
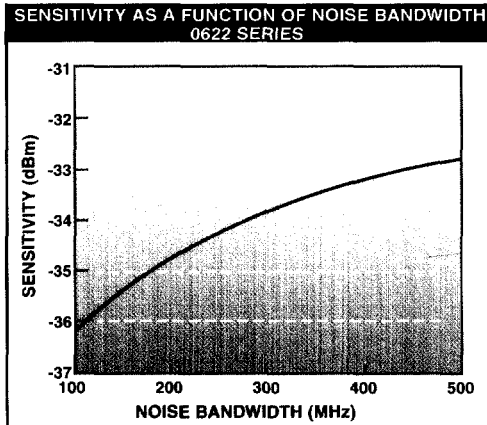
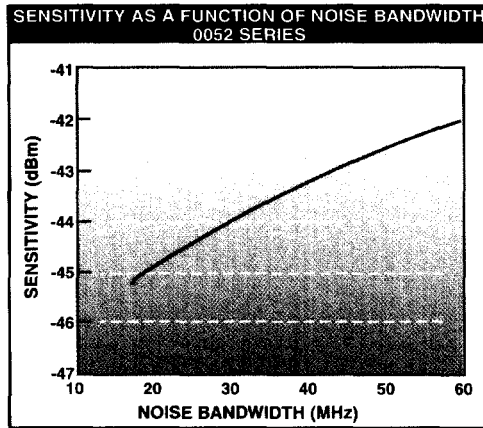
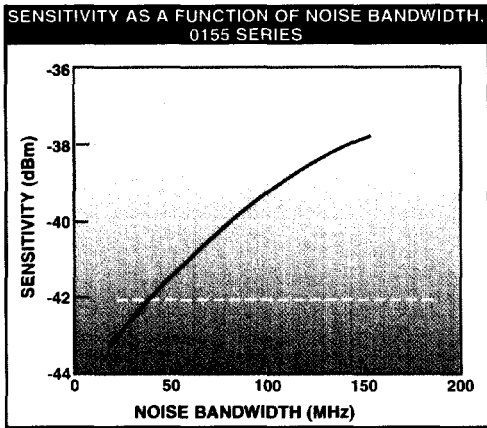
NOTE: The reference position indicates the pin orientation in receptacle mounted devices. The reference arrow indicates the orientation of the key slot in the receptacle body.

PINOUT TABLE (Receptacle and Coax)

PIN-AMP 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 PINOUT AVAILABLE PER CUSTOMER REQUEST.
2. DIMENSIONS IN INCHES (MILLIMETERS).





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.

Special orders

Some products can be supplied with performance characteristics that will meet special customer requirements and that are different from those indicated herein. Contact the Laser Diode Sales Department or your local Laser Diode distributor to discuss your requirements.

Ordering

Products can be ordered directly from Laser Diode, Inc. or from its distributors. Refer to the following ordering information.

Ordering Information

Mini-DIL PINAMPs

LPAD XXXX - XX

Package Type Data Rate Connector Type

Coaxial Pigtailed PINAMPs

LPA XXXXPT X - XX

Package Type Data Rate Pin Out Connector Type

LDFC XXXX X

Receptacle PINAMPs

Package Type Data Rate Pin Out

LDST XXXX X

Package Type Data Rate Pin Out

EXAMPLE: **LPAD 0622-FC**
Mini-DIL PINAMP at 622 Mb/sec with FC connector

Pigtail connector termination designations:

- Use **OO** to indicate no connector.
- Use **FC** to indicate an FC/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 AT&T



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