

PR-20-D



20 GHz Photoreceiver, Differential Out

The Optilab PR-20-D is a high gain receiver with 20 GHz electro-optical bandwidth. Hermetically sealed in a 14-pin mini-DIL package, PR-20-D features dual GPPO connector for differential RF output. It contains a PIN-photodiode (PD) and a Trans-Impedance Amplifier (TIA) / limiting amplifier to provide a high conversion gain up to 2000 V/W and differential output voltage swing up to 500 mV peak to peak. PR-20-D also provides a DCA input to adjust eye crossing and a RSSI output as an accurate indicator of the received signal strength. PR-20-D is ideal for digital system operation up to 23 Gbit/s or analog transmission subsystem to RF over Fiber beyond 23 GHz.

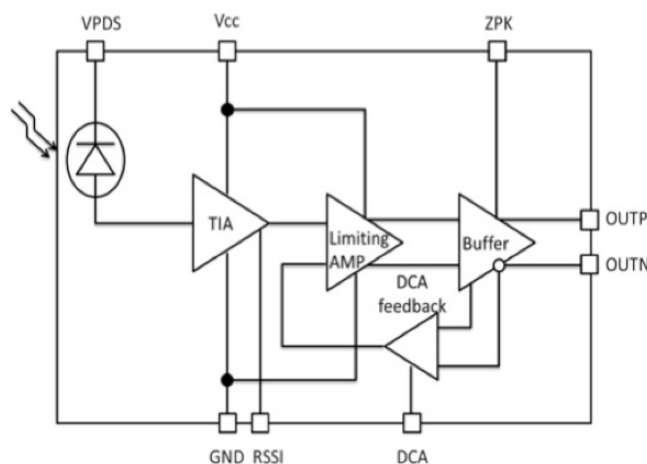
Features

- Integrated single TIA / LIA
- High differential conversion gain up to 2000 V/W
- 500 mVpp differential RF output amplitude
- Dual GPPO connectors
- Eye crossing adjust
- Input level monitoring via RSSI
- Hermetically sealable 14-pin mini-DIL package

Applications

- 24 Gbit/s digital transponder
- 20 GHz analog RF over Fiber
- 20 GHz photonics subsystem
- Picosecond detector

Functional Diagram



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OPTIONS

PR-20-D-xx

xx FA: FC/APC

Other connection type available upon request.

TECHNICAL INFO

For technical info and support:

sales@optilab.com

www.optilab.com

WEB ORDER

To order, please visit OEQuest.com.



Optilab Advantage

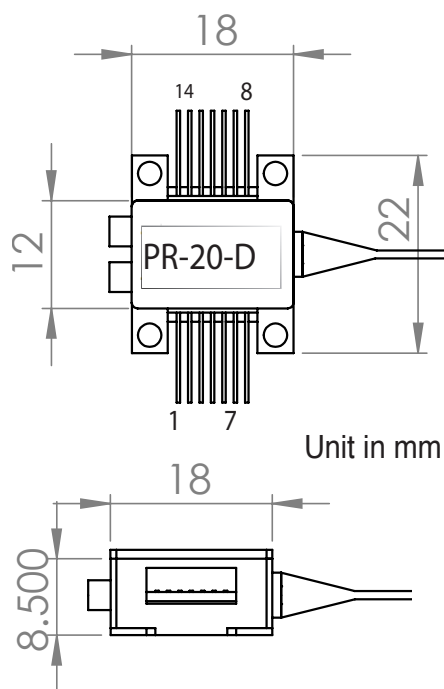
- Innovation
- Performance
- Quality
- Customization
- Warranty

General Specifications	
Optimized Operating Wavelength	1260 nm to 1600 nm
Optical Input Level	-13 dBm to 3 dBm
S21 3 dB Bandwidth	20 GHz min.
Small Signal Conversion Gain	2000 V/W typ.
PD Dark Current @ 25° C, 3 V reverse bias	2 nA typ., 10 nA max.
Optical PDL @ 1550 nm	0.6 dB max.
Optical Connector	FC/APC, other type available upon request.
Differential Output Range	500 mVpp typ.
Impedance	50 Ω
Coupling*	DC Coupled Out
Power Supply	3.3 V typ.
Supply Current	51 mA typ., 62 mA max
Eye Crossing Adjust Range	45% to 55% typ.
RF Output Return Loss	10 dB @ 11 GHz; 7 dB @ 20 GHz
Digital Bit Rate	>24 Gbit/s
Equivalent input noise	25 pA/√Hz
Mechanical Specifications	
Operating Temperature	0° C to +45° C
Storage Temperature	-40° C to +85° C
Operating Humidity	85% max.
Package type	14-pin butterfly package
Housing Dimensions	18 mm x 22 mm x 8.5 mm
Absolute Maximum Ratings	
Power Supply Voltage	4.5 V
PD Reverse Bias Voltage	7 V
Output / Control Voltage	4.5 V
Optical Input Power	5 mW
Soldering Temperature	260° C

* Optilab recommends to use DC blocks externally for AC coupling.

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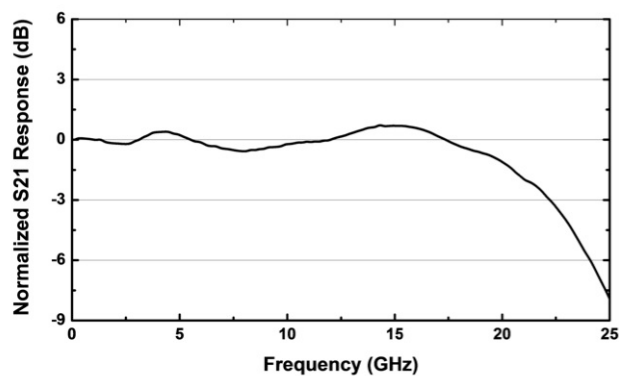
PR-20-D Mechanical Drawing



Pin	Value	Note
1, 3	Vcc	+2.8 to 3.3V; current < 62mA
2	ZPK	Bandwidth Adjust. Floating, Ground or Vcc Max BW with Vcc and peaking adjust
5	VPDS	Photodiode Cathode Supply (reverse bias voltage)
6, 9	GND	Ground
12	DCA	Duty Cycle Adjust, +1 to +2V
13	RSSI	Receiving signal strength indicators
4, 7, 8, 10, 11 and 14		Not connected

S21 Frequency Response

Typical S21



Diff. Conversion Gain

