



BPR-22-M



DEVICE

22 GHz Balanced Photoreceiver Module

OVERVIEW

The Optilab BPR-22-M is a 22 GHz balanced photo receiver module. This cost-effective receiver module operates under a single +5V power supply and can provide users with a turn key solution for applications such as balanced photo detection and 43 Gbit/s DQPSK receiver. With a single, differential linear trans-impedance/ variable gain amplifier (TIA/VGA), BPR-22-M offers two gain control modes: manual and automatic. In manual mode, BPR-22-M provides a linear conversion gain of 1500 V/A. In automatic mode, the gain is automatically adjusted to deliver a constant differential output voltage up to 1200 mV. It also includes a peak detector output for closed loop control of a front-end optical demodulator. An excellent electrical and optical phase propagation is achieved by a total skew of lower than 5 ps between the balanced signal paths.

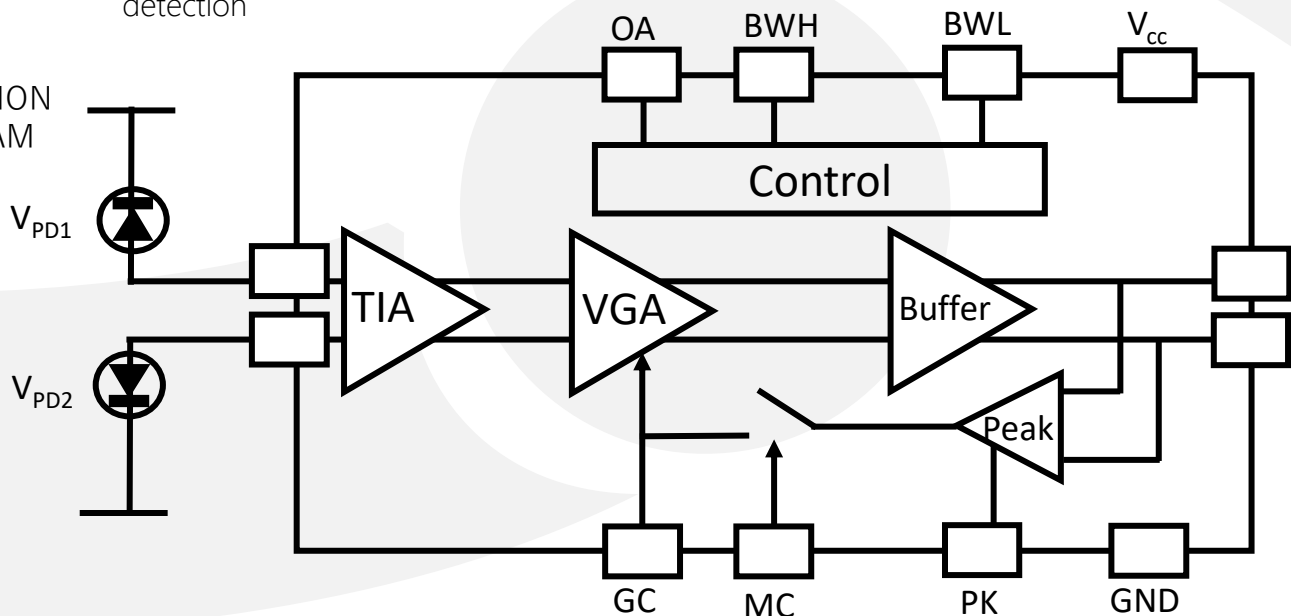
FEATURES

- Dual optical input balanced photodiode
- Differential RF output, Linear high gain TIA
- Built-in DC block for AC coupling
- Near ideal matching response
- High common mode rejection ratio
- Very low skew
- Auto/Manual gain control mode
- Input Protection

USE IN

- Balanced linear receiver up to 22 GHz
- Low noise analog heterodyne detection
- 22 G analog RF link
- 43 Gbit/s DQPSK receiver

FUNCTION DIAGRAM





BPR-22-M

SPECIFICATIONS

Optimized Operating Wavelength	1480 nm to 1620 nm
Optical Input Level	-10 to +4 dBm
S21 3 dB Bandwidth	22 GHz typ., 19 GHz min.
Conversion Gain	1500 V/W typ., 1300 V/W min.
Optical Return Loss	30 dB typ.
Optical PDL	0.5 dB max.
PD Reverse Bias Voltage	3.3 V
Output Return Loss	10 dB up to 11 GHz, 7 dB up to 20 GHz
Operation Mode	MGC with fixed gain and AGC with adjustable output amplitude
Differential Voltage Swing	1200 mVpp
Coupling	AC-Coupled
Pulse Width	22 ps typ., 25 ps max.
Skew	10ps max.
Noise Equivalent Power (NEP)	25 pW/√Hz @ 1GHz

GENERAL

Operating Temperature	0°C to +60 °C
Storage Temperature	-40 °C to +85 °C
Operating Humidity	85% max.
Power Supply	5 V
Power Consumption	500 mW typ.
Housing Dimensions	162mm x 112mm x 33mm
Fiber Connector	FC/APC or LC/APC
Optical Fiber	SMF-28
RF Output Connector	SMA, differential

MECHANICAL

TYPICAL S21 CHARACTERISTICS

