

Advanced Product Information

ATA30010

2.4 GHz TRANSIMPEDANCE AMPLIFIER

Features:

- o 2500 Ohm transresistance
- o 0-2.4 GHz analog bandwidth
- o 3.0 Gbit/sec NRZ operation
- o 50 Ohm output impedance
- o Good sensitivity at high bit rates¹
- o +5 V supply, 65 mA

Applications:

- o long haul communications
- o high speed broadband video
- o parallel to serial data links
- o local area networks

Electrical Specifications (Ta = 25°C, Vs = +5 V)

<u>AC Characteristics</u>	<u>Test Conditions</u>	<u>Typ</u>	<u>Units</u>
Input transresistance	fin = 1.0 GHz	2500	Ohms
Output voltage	fin = 1.0 GHz	1.4	V p-p
Output impedance	fin = 1.0 GHz	50	Ohms
Input noise spectral density	fin = 10 MHz	6.0	pA/√Hz
Input noise current	BW = 10 MHz - 2 GHz	360	nA RMS

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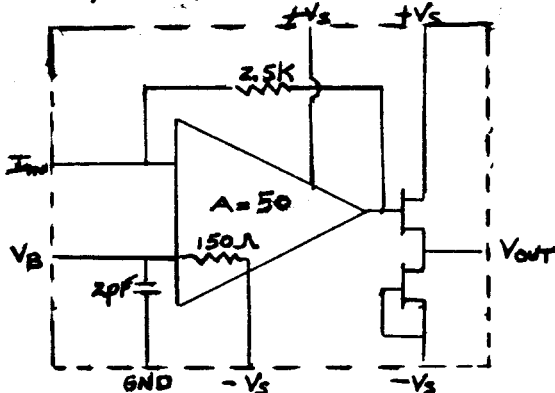
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Power Requirements

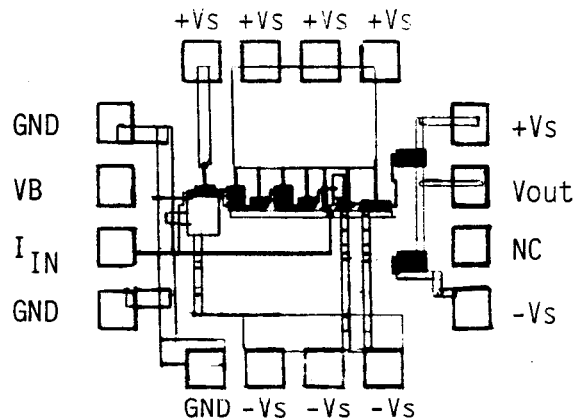
Supply voltage	+4 to +6	V
	-3.5 to -5	V
Quiescent current	65	mA
Operating Temperature Range ²	-55 to +125	°C

(1) With 1 Gb/s NRZ code at -27 dBm optical power into a 0.8 mA/mW photodiode, (C=0.8 pF), this device provides a 10⁻⁹ bit error rate (BER).

(2) It is recommended that the ATA30010 be attached to a thermally and electrically conducting ground plane. θ_j to an infinite heat sink = 70°C/Watt



ATA30010 Equivalent Circuit
200pF Chip Caps Recommended
for +Vs and -Vs Bypass



ATA30010 Bond Pad Locations
Die Size: .042 x .048
Bond Pads: .004 x .004

Anadigics reserves the right to make changes in specifications without notice.

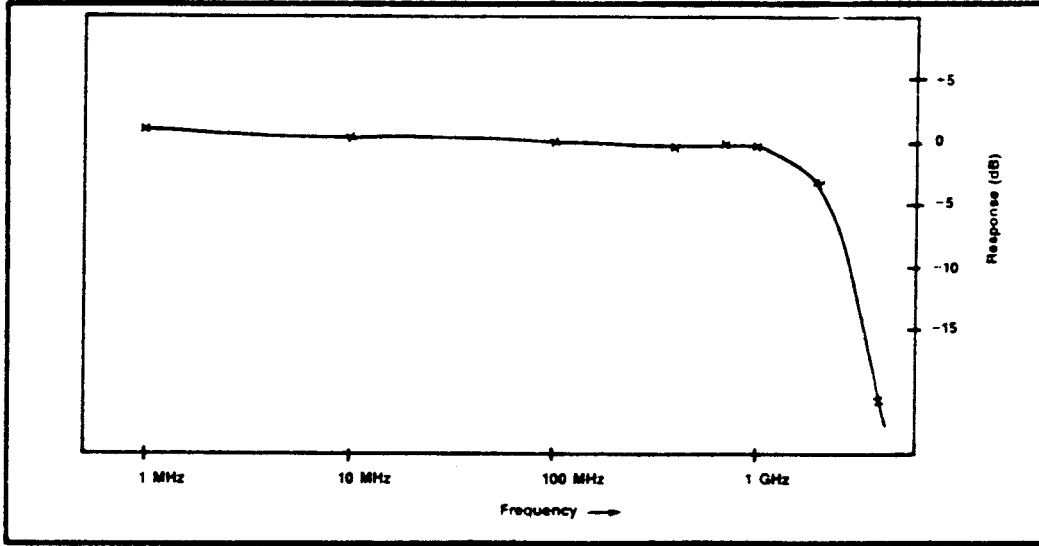


Figure 1. ATA 30010 analog bandwidth.

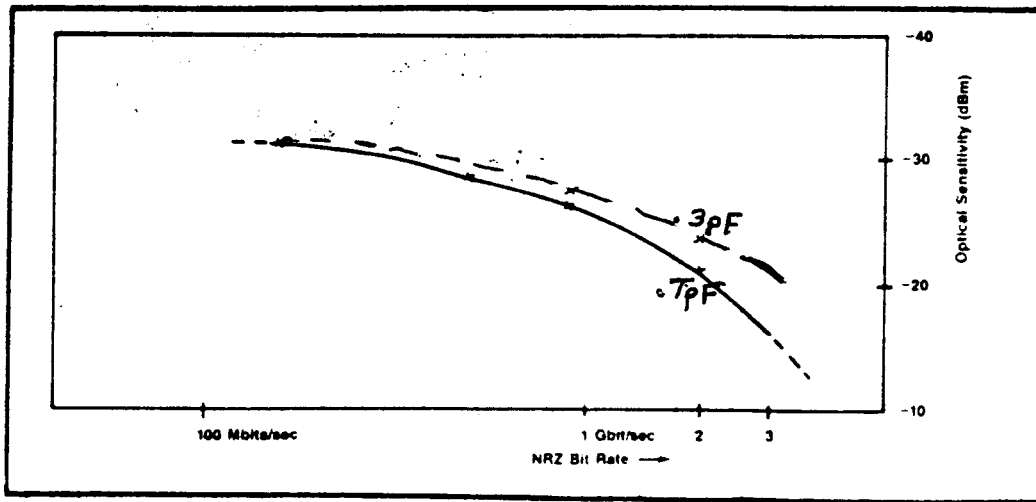


Figure 2. Sensitivity curve.

Sensitivity to 10^{-9} BER was calculated using measured input noise current.

Photodiode responsivity was assumed to be 0.8 mA/mW and photodiode capacitance was 0.3 pF or 0.7 pF

A sensitivity of -30 dBm corresponds to an input noise current of 134 nA rms.