



50 MHz AGC TRANSIMPEDANCE AMPLIFIER

ADVANCED PRODUCT INFORMATION

Rev. 2

FEATURES	APPLICATIONS
<ul style="list-style-type: none"> ■ Single + 5 V Supply ■ 55 k Ohm Transresistance ■ Low Noise : 1 pA/√Hz ■ 70 MHz Analog Bandwidth ■ Wide Dynamic Range: 80 dB Electrical ■ Automatic Gain Control (AGC) ■ - 43 dBm Sensitivity ■ Low Pulse Width Distortion 	<ul style="list-style-type: none"> ■ Sonet OC1 Receiver ■ Ethernet Fiber LAN ■ Wideband Gain Block ■ Low Noise RF Amplifier

ELECTRICAL SPEC. ($T_A = 25^\circ\text{C}$, $V_{DD} = +5V \pm 10\%$, $C_{DIODE} + C_{STRAY} = 0.4 \text{ pF}$ Responsivity = 0.7 A/W (PIN))

DC CHARACTERISTICS	MIN	TYP	MAX	UNITS
Transresistance ($R_L = \infty$, $I_{DC} < 300 \text{ nA}$)		55		K Ohms
Input Impedance		1500		Ohms
Input FET Leakage Current		10		nA
Supply Current I_{DD}	15	35	45	mA
AGC Threshold (Input Current)		10		μA
Output Drive Current Source/Sink		5		mA
Output Offset Voltage	+ 1.3	+1.8	+ 2.2	V
Offset Voltage Drift		± 1		mV/ $^\circ\text{C}$
Input Bias Voltage	+ 1.5	+ 1.7	+ 2.4	V
Operating Temperature Range	- 40		+ 85	$^\circ\text{C}$
Operating Voltage Range V_{DD}	+ 4.5	+ 5.0	+ 6.0	V

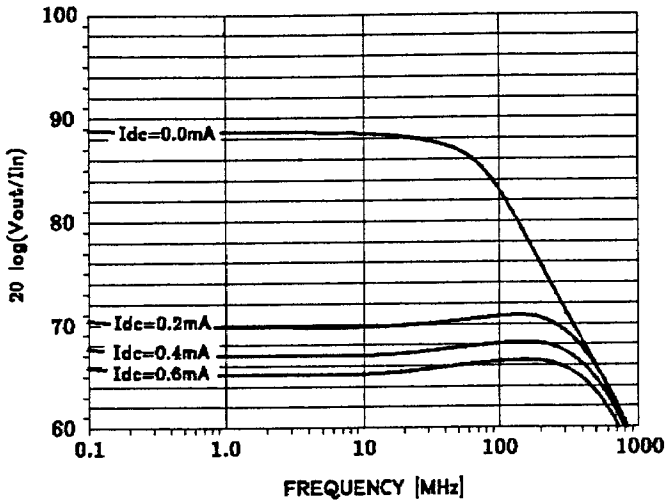
AC CHARACTERISTICS	MIN	TYP	MAX	UNITS
Transresistance $R_L = 50$, $f = 25 \text{ MHz}$	15	28		k Ohms
Input Capacitance - Die ATA00500D1C		0.4		pF
Bandwidth - 3dB	50	70		MHz
Optical Overload *	- 6	- 3		dBm
Output Impedance	30	50	65	Ohms
Input Noise Spectral Density, 1 MHz - 50 MHz		1		pA/√Hz
Input Noise Current, 10 KHz - 100 MHz		7		nA RMS
Optical Sensitivity @ 52Mb/s	- 40	- 43		dBm
AGC Time Constant, $T_{DC} = .1 \text{ mA Step}$ $C_{AGC} = .1 \mu\text{F}$		10		mS

* Other values available

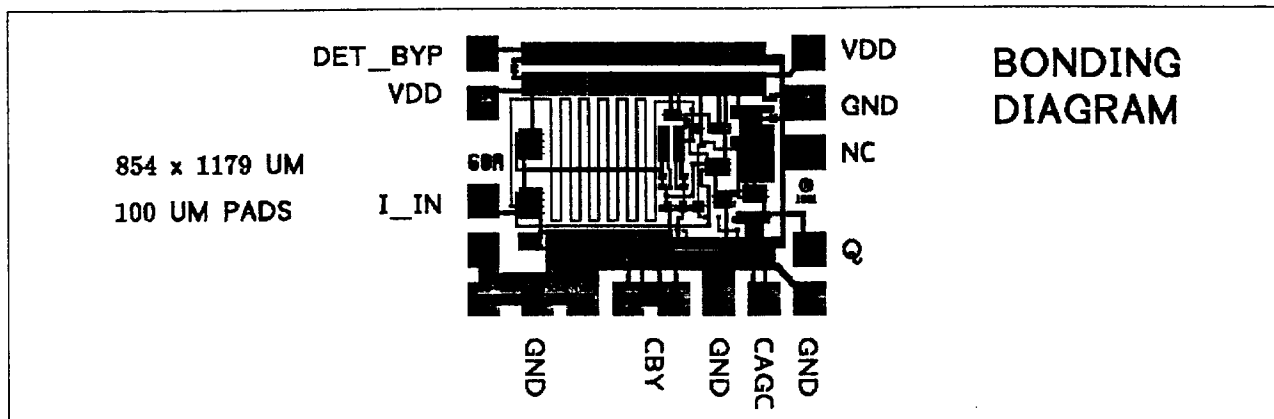
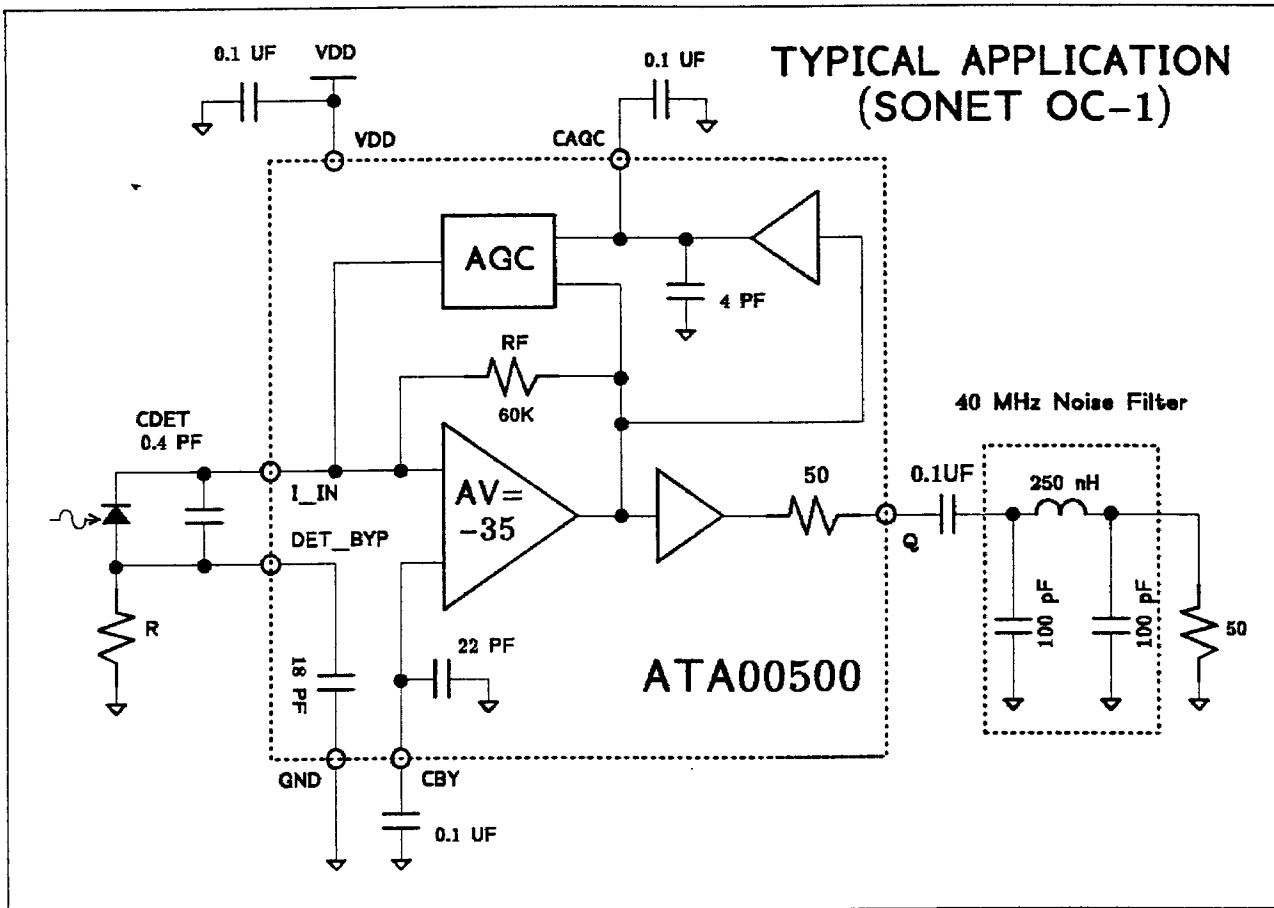
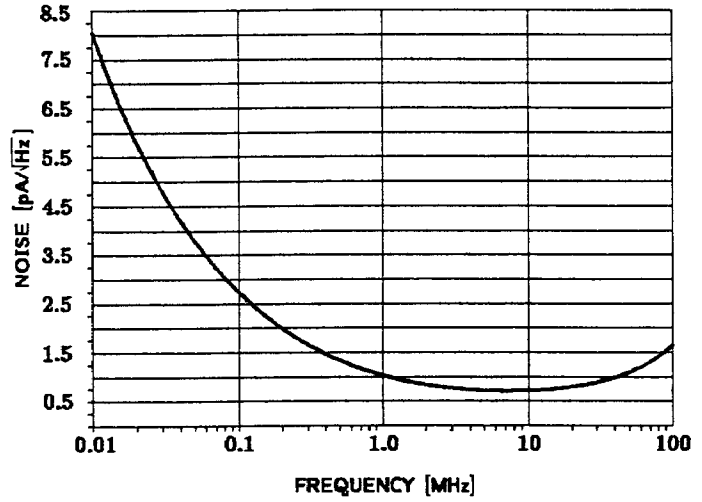
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Anadigics reserves the right to make changes in specifications without notice.

TRANSIMPEDANCE *



NOISE SPECTRAL DENSITY *



*RL=50 OHMS, NO NOISE FILTER

** I_{dc} is the average value of photodiode current I_{in}