

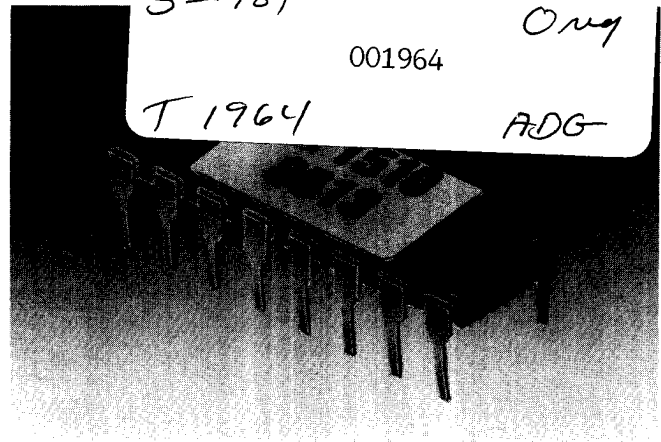
Preliminary Data Sheet

### Features:

- 150 MHz, unity gain stable, operation
- 70 dB ( $A_v = 3000$ ) open loop gain
- 30ns settling time
- 500 V/ $\mu$ s slew rate
- FET inputs
- GaAs monolithic chip for use in hybrids

### Applications:

- very high speed A/D & D/A conversion
- high speed fiber optic systems & LANs
- baseband and video communications
- radar & IF processors
- high speed sample/hold circuits
- high speed disk drives



### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ , $R_L = 1\text{k}\Omega$ , $V_S = \pm 9\text{V}$ )

Parameter	Test Conditions	Min	Typ	Max	Units
<b>DC Characteristics</b>					
Open Loop Gain			70		dB
Input Current			100		nA
Input Offset Voltage Initial <sup>1</sup> vs Ambient Temperature <sup>2</sup> vs Power Supply Voltage	-20°C to +85°C $V_S = \pm 8\text{V to } \pm 10\text{V}$		60 100 5	200	mV $\mu\text{V}/^\circ\text{C}$ mV/V
Input Common Mode Range		$\pm 3$	$\pm 4$		V
Input Resistance		$10^8$			$\Omega$
Input Capacitance <sup>3</sup>			3		pF
Output Voltage Swing		$\pm 6$			V
Output Current <sup>4</sup> Source Sink		20 -7			mA mA
Output Resistance			50		$\Omega$
<b>AC Characteristics</b>					
Gain Bandwidth Product <sup>5</sup>			150		MHz
Full Power Bandwidth	5V p-p Output Voltage Swing		35		MHz
Slew Rate		500	750		V/ $\mu$ s
Settling Time	to 1%; $R_S = R_F = 1\text{k}\Omega$		30		ns
Phase Margin			70		degrees
Common Mode Rejection Ratio		45			dB
Input Noise Voltage <sup>2,6</sup>				0.9	mV (rms)
<b>Power Requirements</b>					
Voltage Range		$\pm 8$	$\pm 9$	$\pm 10$	V
Supply Current			39	42	mA

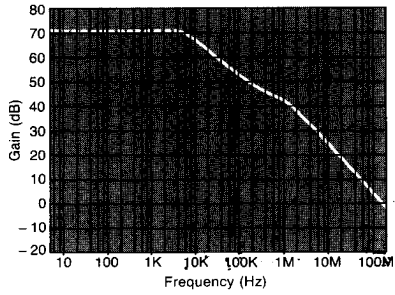
1. Initial input offset voltage can be externally nulled.  
 2. Using the AOP1510 in a composite amplifier with a low frequency precision op amp can significantly improve offset drift and noise performance.  
 3. Input capacitance of chip only, is 0.2 pF  
 4. The AOP1510 is short circuit protected for continuous output shorts to ground. Output shorts to either supply will destroy the device.  
 5. The AOP1510 is internally compensated, and requires no external compensation for unity gain operation.  
 6. Refer to equivalent input noise graph.

# AOP1510

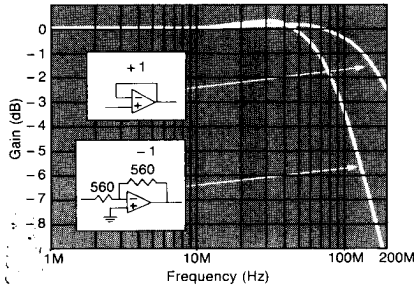
## Maximum Ratings

Supply Voltage (Vs)	$\pm 11\text{ V}$
Power Dissipation	0.9 W
Common Mode Input Voltage	$\pm V_s$
Differential Input Voltage	$\pm 8\text{ V}$
Operating Case Temperature	$-55^\circ\text{C}$ to $+110^\circ\text{C}$
Storage Temperature	$-65^\circ\text{C}$ to $+150^\circ\text{C}$

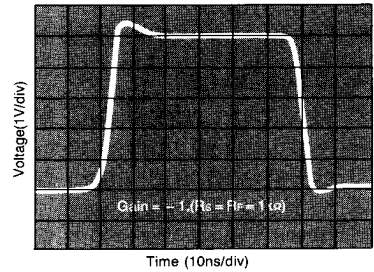
Open Loop Response



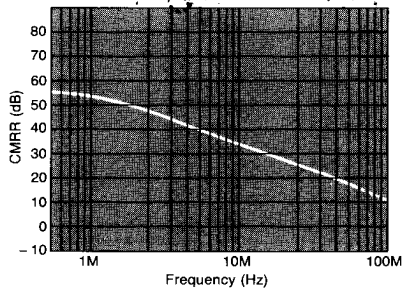
Inverter/Non Inverter Responses



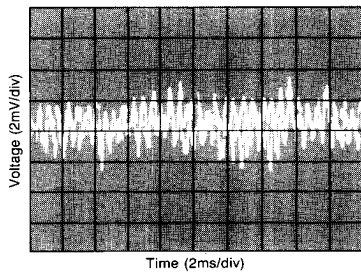
Pulse Response



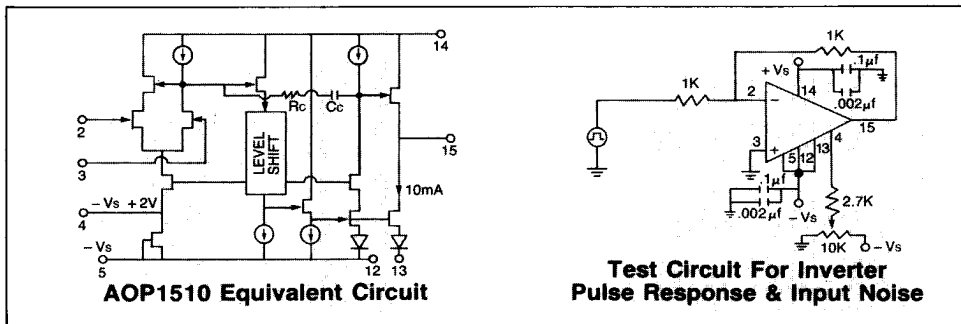
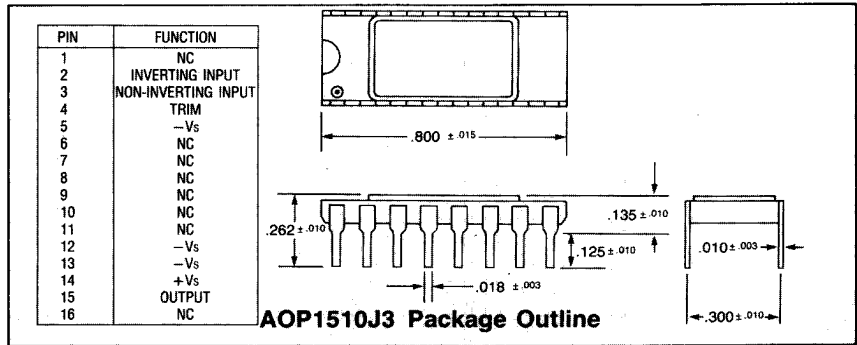
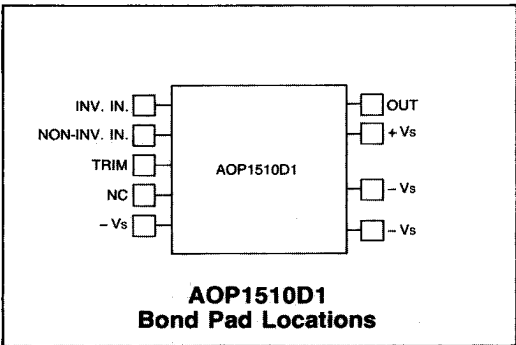
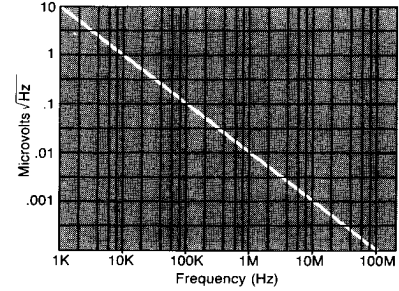
CMRR VS. Frequency



Equivalent Input Noise



Equivalent Input Noise VS. Frequency



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