Parameter		Conditions	AS258N			Units
			Min	Typ	Max	
Short Circuit to Ground		V^+ =15 V, T_A=25^{0}C		40	60	mA
Input Offset Voltage		V^+ =5 V to 30V			±7	mV
Input Offset Voltage Drift		R_S=0 Ω		7		µV/^{0}C
Input Offset Current		$I_{IN(+)}$ - $I_{IN(-)}$, T_A= -45^{0}C to 85^{0}C			±100	nA
Input Offset Current Drift		R_S=0 Ω		10		pA/^{0}C
Input Bias Current		$I_{IN(+)}$ or $I_{IN(-)}$, T_A= -45^{0}C to 85^{0}C		40	300	nA
Input Common-Mode Voltage Range		V^+=+30 V	0		V^+ -2	V
Large Signal Voltage Gain		V^+=+15 V (V_0Swing=1 V to 11 V) R_L≥2 kΩ	25			V/mV
Otput Voltage Swing	V_{OH}	V^+=+30 V, R_L=2 kΩ	26			V
		R_L>=10 kΩ	27	28		
	V_{OL}	V^+=5 V, R_L≥10 kΩ		5	20	mV
Output Current	Source	V_0=2 V V_{IN}^+=+1 V_{DC}, V_{IN}^-=0 V, V^+=15 V	10	20		mA
	Sink	V_{IN}^+=0 V, V_{IN}^-=+1 V, V^+=15 V	5	8		

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AS258N

Low Power Dual Operational Amplifier

General Description

The AS258N series consists of two independent, high gain, internally frequency compensated operational amplifiers which were designed specifically to operate from a single power supply over a wide range of voltages. Operation from split power supplies is also possible and the low power supply current drain is independent of the magnitude of the power supply voltage.
Application areas include transducer amplifiers, dc gain blocks and all the conventional op amp circuits which now can be more easily implemented in single power supply systems. For example, the AS258N series can be directly operated off of the standard +5 V_{DC} power supply voltage which is used in digital systems and will easily provide the required interface electronics without requiring the additional ±15 V_{DC} power supplies.

Unique Characteristics

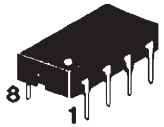
- In the linear mode the input common-mode voltage range includes ground and the output voltage can also swing to ground, even though operated from only a single power supply voltage.
- The unity gain cross frequency is temperature compensated.
- The input bias current is also temperature compensated.

Advantages

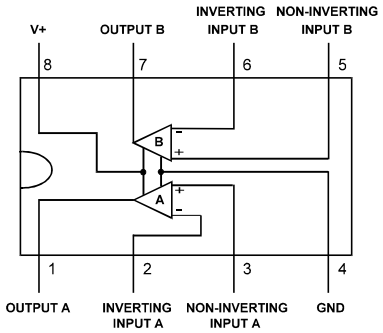
- Eliminates need for dual supplies.
- Two internally compensated op amps in a single package.
- Allows directly sensing near GND and V_{OUT} also goes to GND.
- Compatible with all forms of logic.
- Power drain suitable for battery operation.

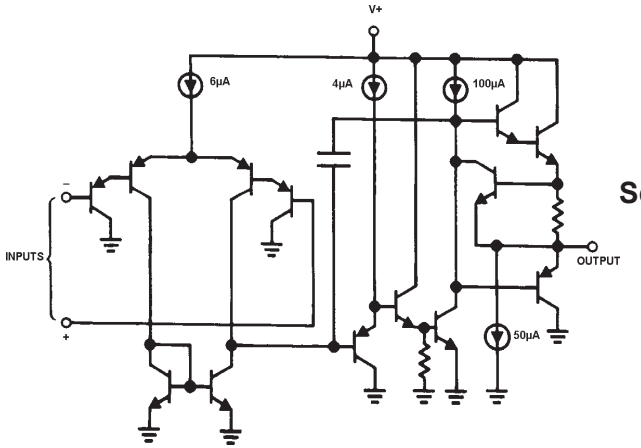
Features

- Internally frequency compensated for unity gain.
- Large dc voltage gain 100 dB
- Wide bandwidth (unity gain) 1 MHz (temperature compensated)
- Wide power supply range:
  Single supply 3 V to 32 V
  or dual supplies ±1,5 V to ±16 V
- Very low supply current drain (500 µA) - essentially independent of supply voltage.
- Low input bias current 40 nA (temperature compensated)
- Low input offset voltage 2 mV
  and offset current 5 nA
- Input common-mode voltage range includes ground.
- Differential input voltage range equal to the power supply voltage.
- Large output voltage swing 0 V to V^+ - 1,5 V



Connection Diagram
Dual-in-Line Packege





Schematic Diagram
(Each Amplifier)

Absolute Maximum Ratings

Supply Voltage, V^+	32 V or ±16 V
Differential Input Voltage	32 V
Input Voltage	-0,3 V to +32 V
Input Current (V_{IN} <-0,3 V_{DC})	50 mA
Power Dissipation	830 mW
Output Short-Circuit to GND (One Amplifier)	
$V^+ \leq 15$ V and $T_A = 25^0C$	Continuous
Operating Temperature Range	-40^0C to 85^0C
Storage Temperature Range	-65^0C to $+150^0C$
Lead Temperature (Soldering, 10 seconds)	260^0C

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AS258N

Electrical Characteristics

$V^+ = +5,0\ V_{DC}$, unless otherwise stated

Parameter		Conditions	AS258N Min	AS258N Typ	AS258N Max	Units
Input Offset Voltage		$T_A=25^0C$		±2	±5	mV_{DC}
Input Bias Current		$I_{IN(+)}$ or $I_{IN(-)}$, $V_{CM}=0$ V, $T_A=25^0C$		45	150	nA_{DC}
Input Offset Current		$I_{IN(+)} - I_{IN(-)}$, $V_{CM}=0$ V, $T_A=25^0C$		±3	±30	nA_{DC}
Input Common-Mode Voltage Range		$V^+=30\ V_{DC}$, $T_A=25^0C$	0		$U^+ -1.5$	V
Supply Current		Over Full Temperature Range $R_L = \frac{n}{k}$ on All Op Amps $V^+=30$ V $V^+=5$ V		1,0 0,5	2 1.2	mA
Large Signal Voltage Gain		$V^+=15$ V, $R_L \geq 2$ kΩ ($V_0=1$ V to 11 V), $T_A=25^0C$	50	100		V/mV
Common-Mode Rejection Ratio		DC, $V_{CM}=0$ V to $V^+ -1.5$ V $T_A=25^0C$	70	85		dB
Power Supply Rejection Ratio		DC, $V^+=5$ V to 30 V $T_A=25^0C$	65	100		dB
Amplifier-to-Amplifier Coupling		f=1kHz to 20 kHz, $T_A=25^0C$ (Input Referred)		-120		dB
Output Current	Source	$V_{IN}^+=1$ V, $V_{IN}^-=0$ V, $V^+=15$ V, $V_0=2$ V, $T_A=25^0C$	20	40		mA
	Sink	$V_{IN}^+=0\ V_{DC}$, $V_{IN}^-=1$ V, $V^+=15$ V, $V_0=2$ V, $T_A=25^0C$	10	20		mA
		$V_{IN}^+=0$ V, $V_{IN}^-=1$ V, $T_A=25^0C$, $V^+=15$ V, $V_0=200$ mV	12	50		µA