

**Features**

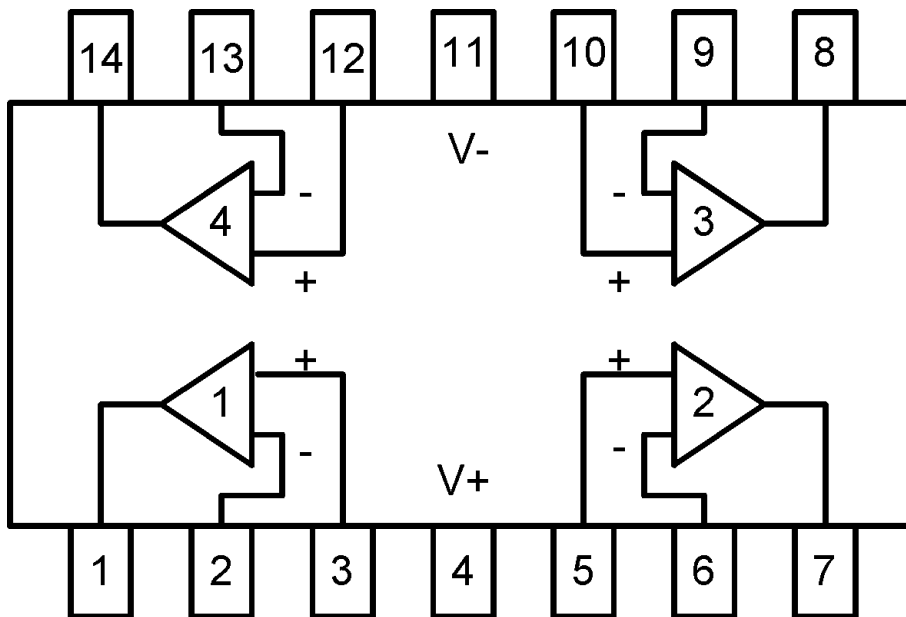
- Operating Voltage :  $\pm 2.5 \sim \pm 9V$  or  $5 \sim 18V$
- Large DC Voltage Gain: 100 dB
- High input Resistance :  $1M\Omega$
- Functional Compatible with 4558
- Bipolar Technology

**Description**

The AT5558 consists of four independent, high gain, internally compensated amplifiers which were designed specifically to operate from a single or split power supply.

Application areas include transducer amplifier, DC gain blocks and all the conventional operational amplifier circuits.

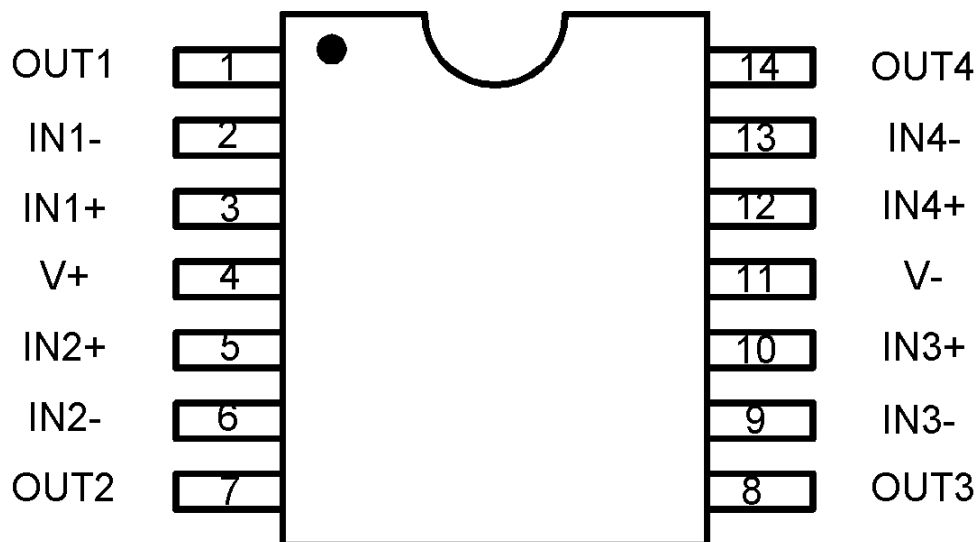
**Block Diagram**



**Pin Descriptions**

Pin No.	Pin name	Function
1	OUT1	Output 1
2	IN1-	Negative input 1
3	IN1+	Positive input 1
4	V+	Positive Power Supply
5	IN2+	Positive input 2
6	IN2-	Negative input 2
7	OUT2	Output 2
8	OUT3	Output 3
9	IN3-	Negative input 3
10	IN3+	Positive input 3
11	V-	Negative Power Supply
12	IN4+	Positive input 4
13	IN4-	Negative input 4
14	OUT4	Output 4

**PinOut**



**Absolute maximum ratings (Ta = 25°C)**

Parameter	Symbol	Limits	unit
Power supply voltage	V+/V-	±9	V
Differential Input Voltage	V <sub>ID</sub>	±8	V
Power Dissipation	P <sub>D</sub>	500	mW
Operating temperature	T <sub>opr</sub>	-30~+85	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

\*Stresses beyond those listed under “ absolute maximum ratings” may cause permanent damage to the device. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

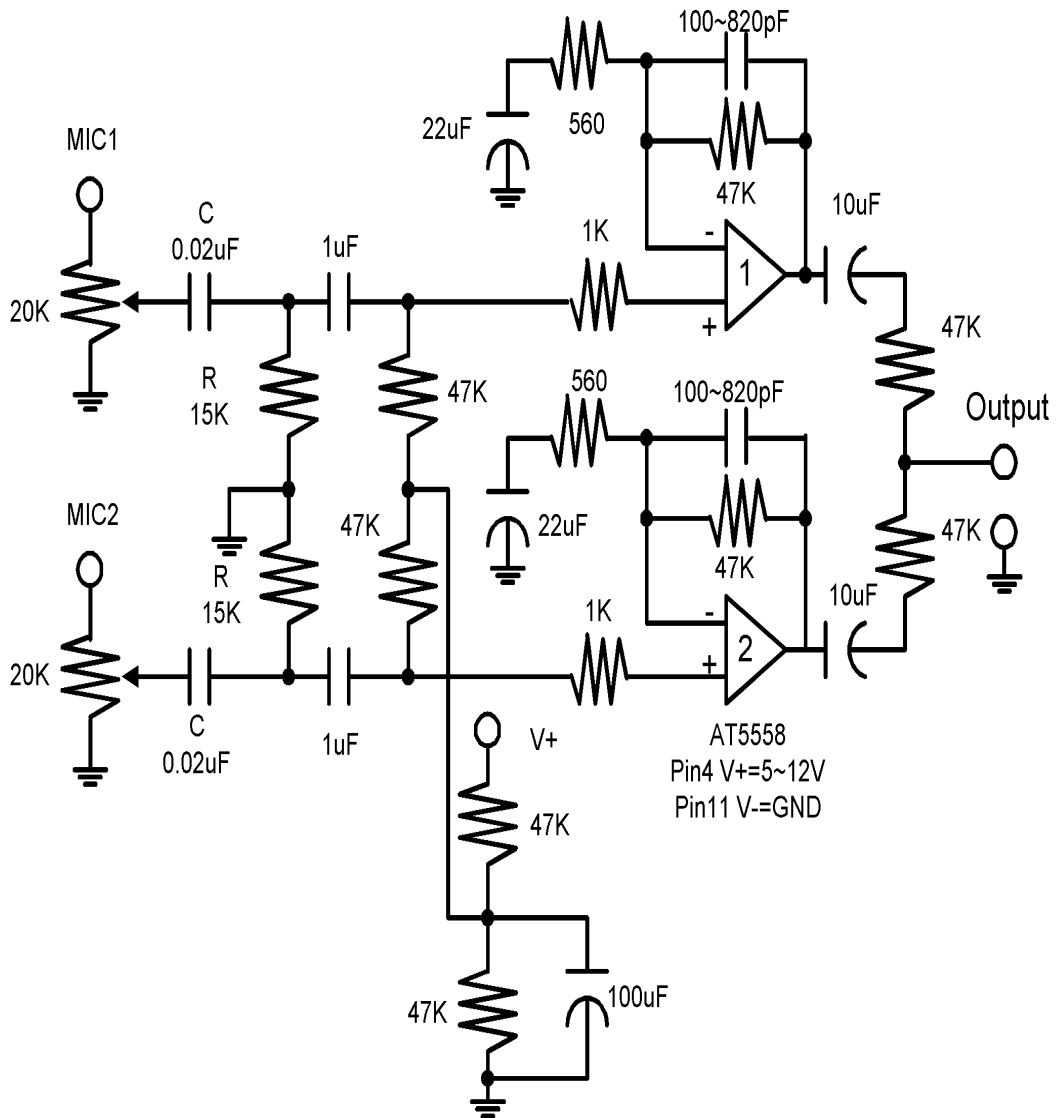
**Electrical characteristics (unless otherwise noted, Ta = 25°C, V+ = 6V, V- = -6V)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input Offset Voltage	V <sub>IO</sub>	-	0.7	-	mV	R <sub>s</sub> ≤ 10KΩ
Input Offset Current	I <sub>IO</sub>	-	5	200	nA	
Input Bias Current	I <sub>B</sub>	-	70	500	nA	
Input Resistance	R <sub>IN</sub>	0.5	0.8	-	mΩ	
Input Voltage Range	V <sub>in</sub>	-	-	±5	V	
Large Signal Voltage Gain	A <sub>v</sub>	-	100	-	dB	
Gain Bandwidth	GBW	-	3	-	MHz	
Phase Margin	θ <sub>m</sub>	-	60	-	deg.	
Output Voltage Swing	V <sub>sw</sub>	-	+5.09/ -4.86	-	V	R <sub>L</sub> = 10KΩ
DC common mode Rejection ratio	CMRR	-	98	-	dB	
Power supply rejection Ratio	PSRR	-	95	-	dB	
Slew rate	SR	1.0	1.3	-	V/μS	R <sub>L</sub> = 2KΩ C <sub>L</sub> = 100pF
Input Noise Voltage	V <sub>noise</sub>	-	1.94	-	uV <sub>rms</sub>	
Output Resistance	R <sub>o</sub>	-	75	-	Ω	
Output Short-Circuit Current	I <sub>os</sub>	-	100	-	mA	*
Channel separation	α	-	100	-	dB	f = 1KHz~20KHz
Rise Time	T <sub>r</sub>	-	55	-	ns	
Operating Current	I <sub>cc</sub>	-	5.5	10	mA	

\*1 Due to power dissipation issue, it is not allowed for both channels to operate at this condition at the same moment.

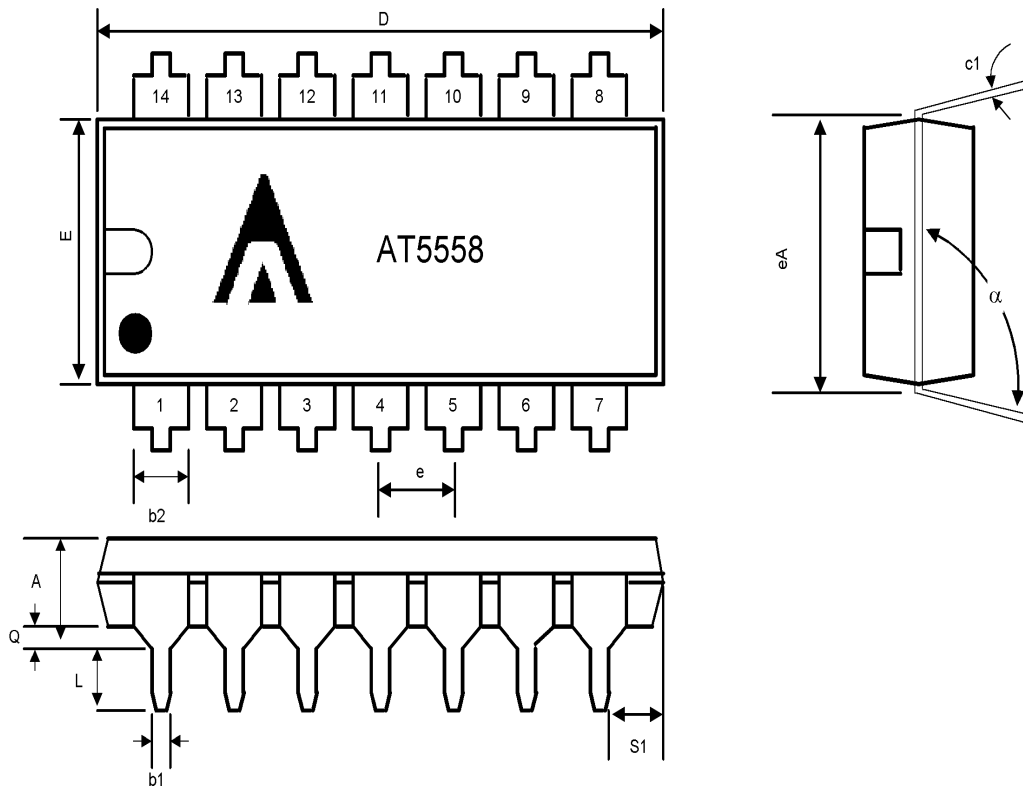
**Application Circuit**

**MIC Pre-Amp circuit for ECHO Application**



- Change the value of the R and C to adjust the cutoff frequency of the high pass filter as you like.
- The output is connected to the input point of the echo application circuit.

**Package Outlines (units:mm): DIP-14**



SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	-	0.200	-	5.08	-
b1	0.014	0.023	0.36	0.58	-
b2	0.045	0.065	1.14	1.65	-
c1	0.008	0.015	0.20	0.38	-
D	-	0.785	-	19.94	-
E	0.220	0.310	5.59	7.87	-
e	0.100 BSC		2.54 BSC		-
eA	0.300 BSC		7.62 BSC		-
L	0.125	0.200	3.18	5.08	-
Q	0.015	0.060	0.38	1.52	-
s1	0.005	-	0.13	-	-
$\alpha$	90 <sup>0</sup>	105 <sup>0</sup>	90 <sup>0</sup>	105 <sup>0</sup>	-