

INTRODUCTION

The S1A0386A01 is a power amplifier designed for use in low voltage consumer applications. The gain is internally set to 20 to keep the external part count low, but the addition of an external resistor and Capacitor between Pin 1 and 8 will increase the gain to any value up to 200.

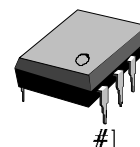
FEATURES

- Battery operation
- Minimum external parts
- Wide supply voltage range:
4V – 12V (S1A0386A01-D0B0)
4V – 9V (S1A0386A01-S0B0)
- Low quiescent current drain (4mA)
- Voltage gains: 20 – 200dB
- Ground referenced Input
- Self-centering output quiescent voltage
- Low distortion

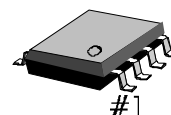
ORDERING INFORMATION

Device	Package	Operating Temperature
S1A0386A01-D0B0	8-DIP-300	-20°C – + 70°C
S1A0386A01-S0B0	8-SOP-225	

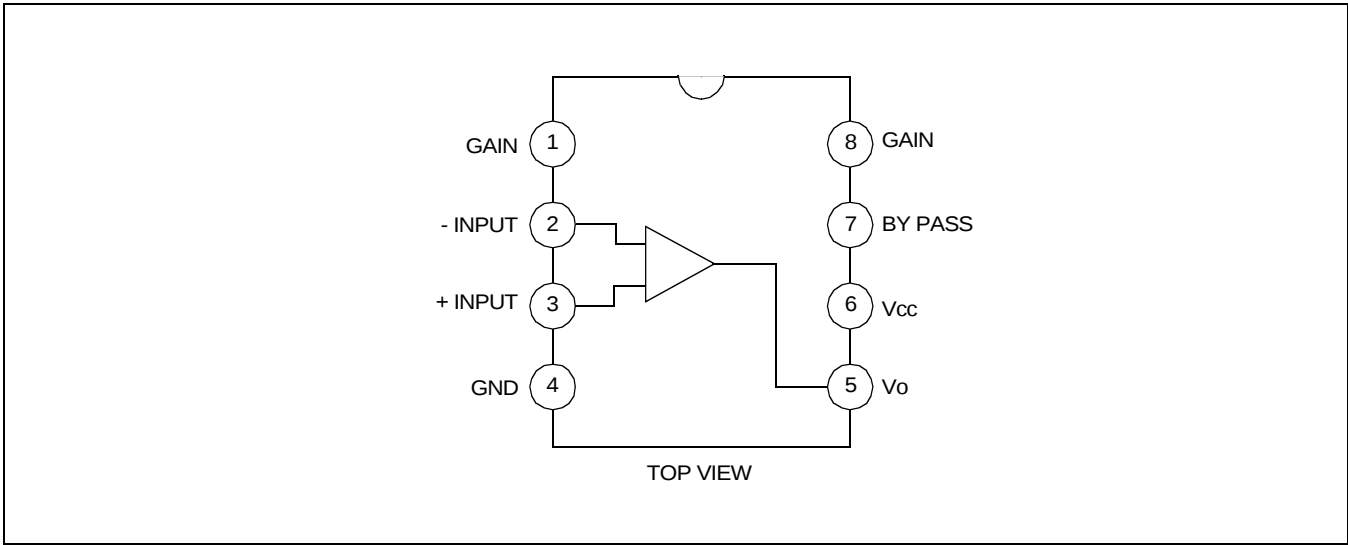
8-DIP-300



8-SOP-225



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic		Symbol	Value	Unit
Supply Voltage		V _{CC}	15	V
Power Dissipation	S1A0386A01-D0B0	P _D	660	mW
	S1A0386A01-S0B0		300	
Input Voltage		V _I	± 0.4	V
Operating Temperature		T _{OPR}	-20 — +70	°C
Storage Temperature		T _{STG}	-40 — + 125	°C

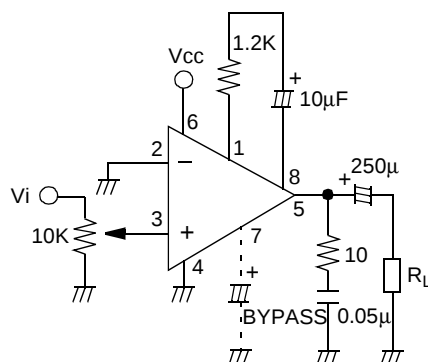
ELECTRICAL CHARACTERISTICS

($T_a = 25^\circ\text{C}$, $V_{CC} = 6\text{V}$, $R_L = 8\Omega$, $f = 1\text{kHz}$, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current	I_{CCQ}	$V_I = 0$	—	4	8	mA
Output Power	P_O	$V_{CC} = 6\text{V}$, THD = 10% $V_{CC} = 9\text{V}$, THD = 10%	250 500	325 200	—	mW mW
Voltage Gain	G_V	Pins 1 and 8 Open 10F from Pin 1 to 8	—	26 46	—	dB
Bandwidth	BW	Pins 1 and 8 Open 10 μF from Pin 1 to 8	—	300 60	—	kHz
Total Harmonic Distortion (D-Type)	THD	$P_O = 125\text{mW}$, Pins 1 and 8 Open	—	0.2	—	%
Input Resistance	R_I	—	—	50	—	k Ω
Input Bias Current	I_{BIAS}	Pins 1 and 8 Open	—	250	—	nA

APPLICATION CIRCUIT

Amplifier with Gain = 50 (34 dB)



NOTES