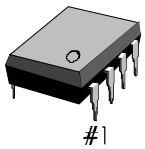
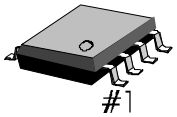
INTRODUCTION

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.

8–DIP–300



8–SOP–225



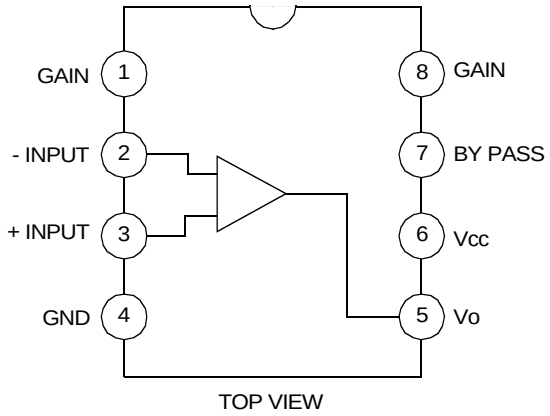
FEATURES

- 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	

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

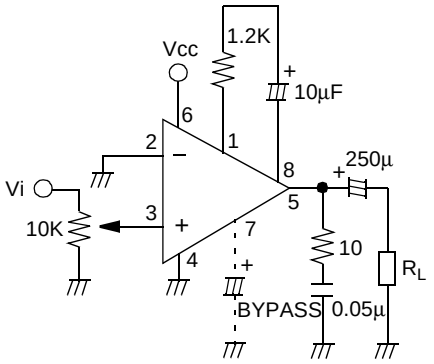
ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V_{CC} = 6V, R_L = 8Ω, f = 1kHz, 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 V, THD = 10% V_{CC} = 9 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 10μF from Pin 1 to 8	–	300 60	–	kHz
Total Harmonic Distortion (D-Type)	THD	P_O = 125 mW, Pins 1 and 8 Open	–	0.2	–	%
Input Resistance	R_I	–	–	50	–	kΩ
Input Bias Current	I_{BIAS}	Pins 1 and 8 Open	–	250	–	nA

APPLICATION CIRCUIT

Amplifier with Gain = 50 (34 dB)



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