

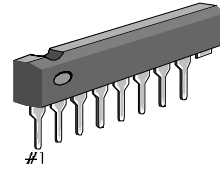
INTRODUCTION

The S1A2221A02 is a monolithic integrated circuit consisting of a 2-channel pre-amplifier in a 8-pin plastic single in line package. The minimum operating voltage is 2.5V, Making it suitable for low voltage application.

FEATURES

- Wide operating supply voltage: $V_{DD} = 2.5V - 6V$
- Low noise ($V_{HI} = 1.0\mu V$: Typ)
- High channel separation
- Good ripple rejection ratio
- Minimum number of external parts required

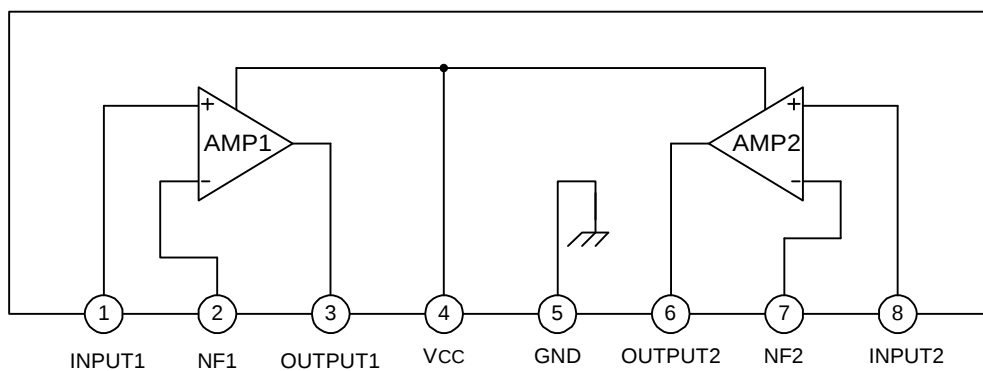
8-SIP



ORDERING INFORMATION

Device	Package	Operating Temperature
S1A2221A02-I0U0	8-SIP	-20°C – +70°C

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

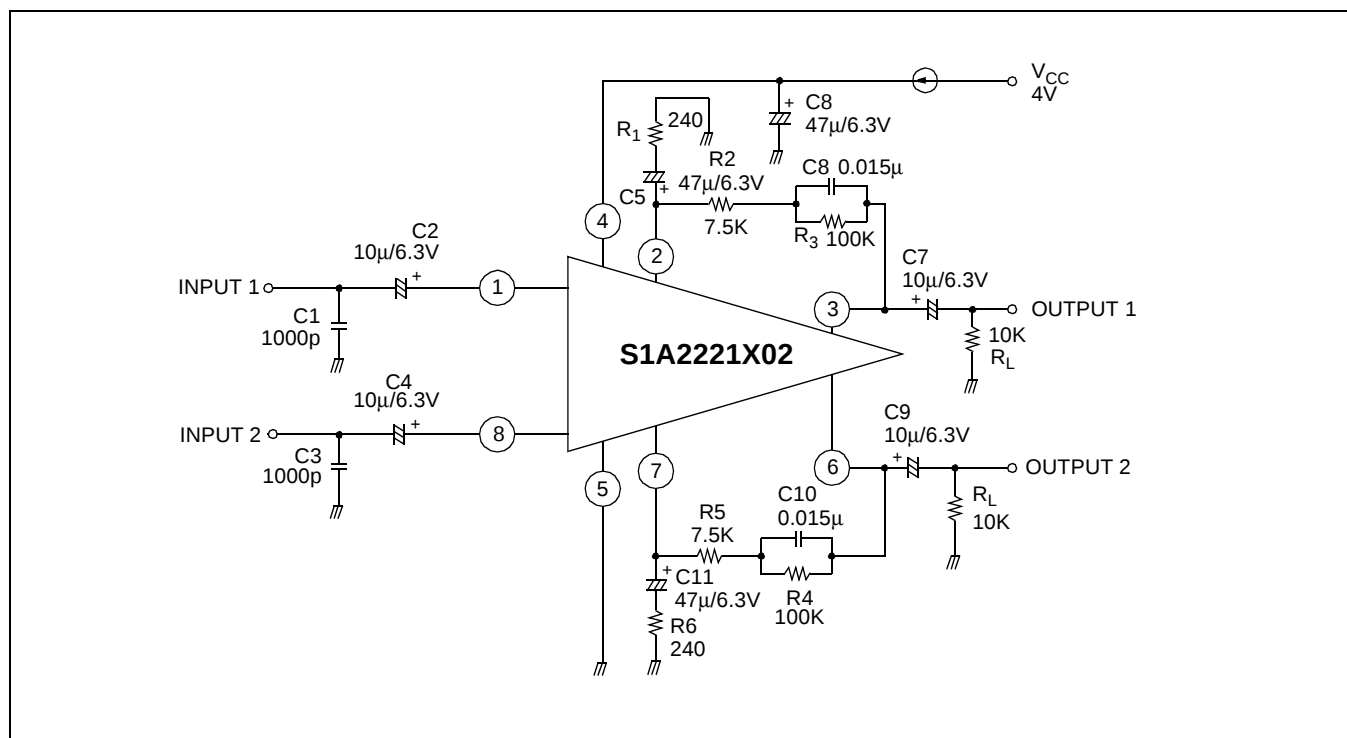
Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	7.5	V
Power Dissipation	P_D	200	mW
Operating Temperature	T_{OPR}	- 20 – +70	°C
Storage Temperature	T_{STG}	- 40 – +125	°C

ELECTRICAL CHARACTERISTICS

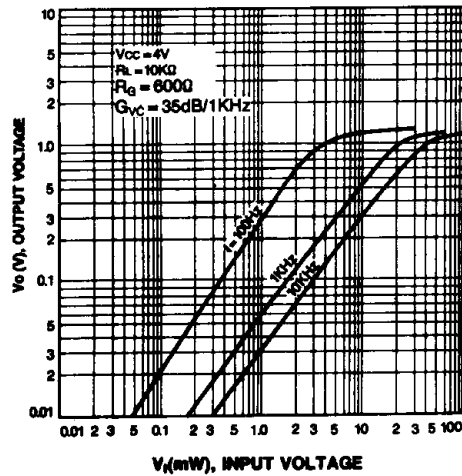
(Ta = 25°C, V_{CC} = 4V, R_L = 10k Ω , R_G = 600 Ω , f = 1kHz, NAB, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current	I_{CCQ}	$V_I = 0$	–	2.0	6.0	mA
Open Loop Voltage Gain	G_{VO}	–	65	80	–	dB
Closed Loop Voltage Gain	G_{VC}	$V_O = 0.2V$	33	35	37	dB
Output Voltage	V_O	THD = 1%	0.4	0.7	–	V
Total Harmonic Distortion	THD	$V_O = 0.2V$	–	0.1	0.3	%
Input Resistance	R_I	–	–	150	–	k Ω
Equivalent Input Noise Voltage	V_{NI}	$R_G = 2.2k\Omega$ BW (–3dB) = 15Hz – 30kHz	–	1.0	2.0	V
Cross Talk	CT	$R_G = 2.2k\Omega$	50	65	–	dB

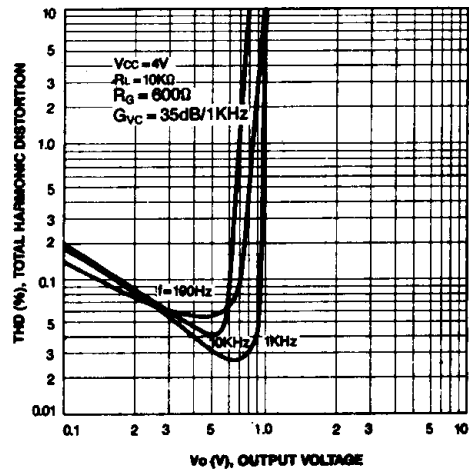
TEST CIRCUIT



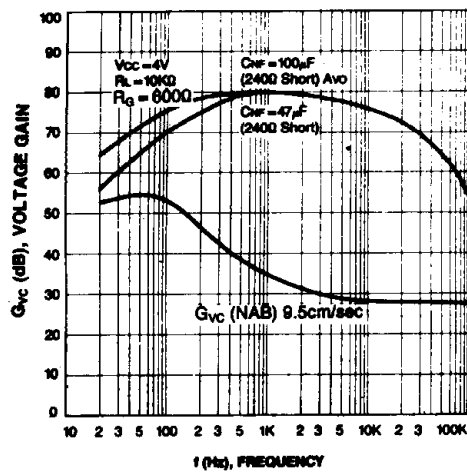
OUTPUT VOLTAGE-INPUT VOLTAGE



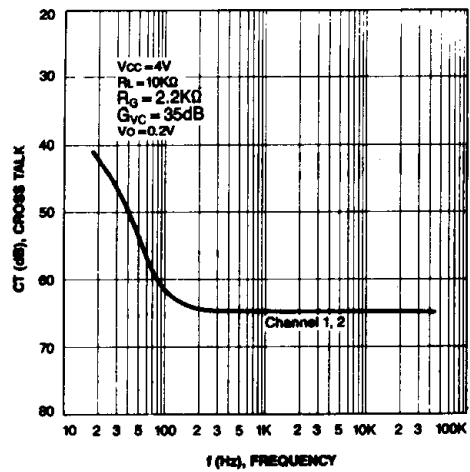
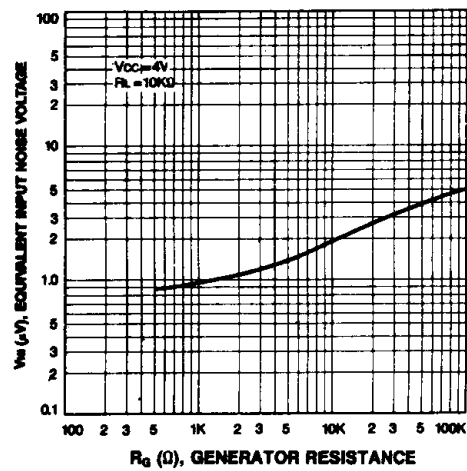
TOTAL HARMONIC DISTORTION-OUTPUT VOLTAGE



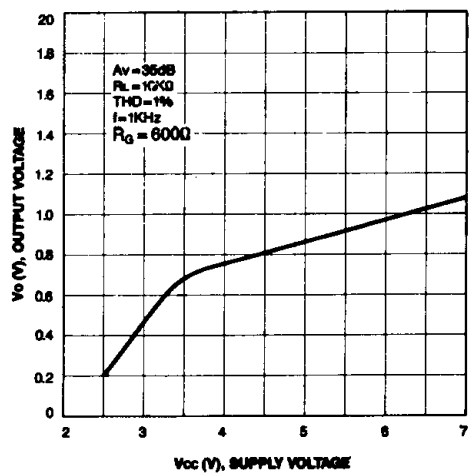
VOLTAGE GAIN-FREQUENCY

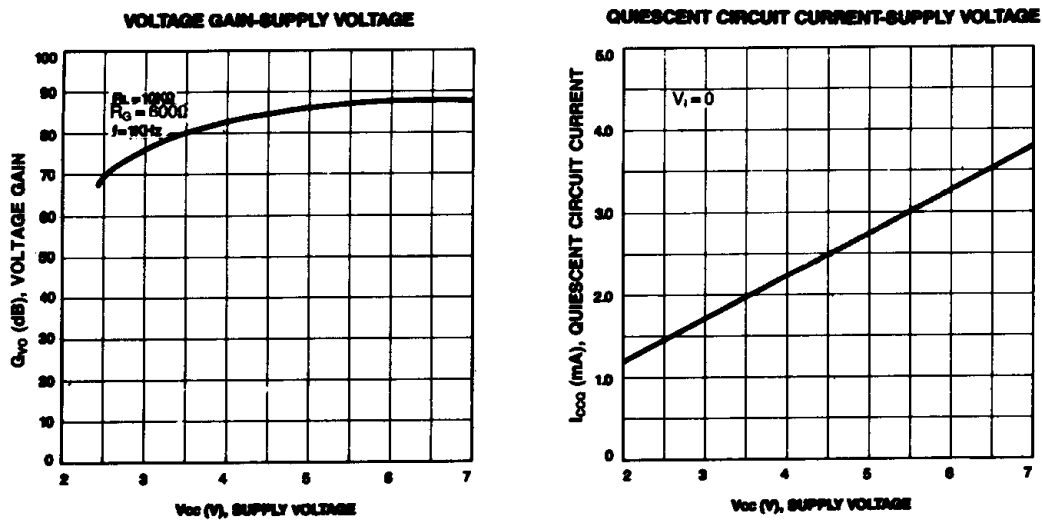


CROSS TALK-FREQUENCY

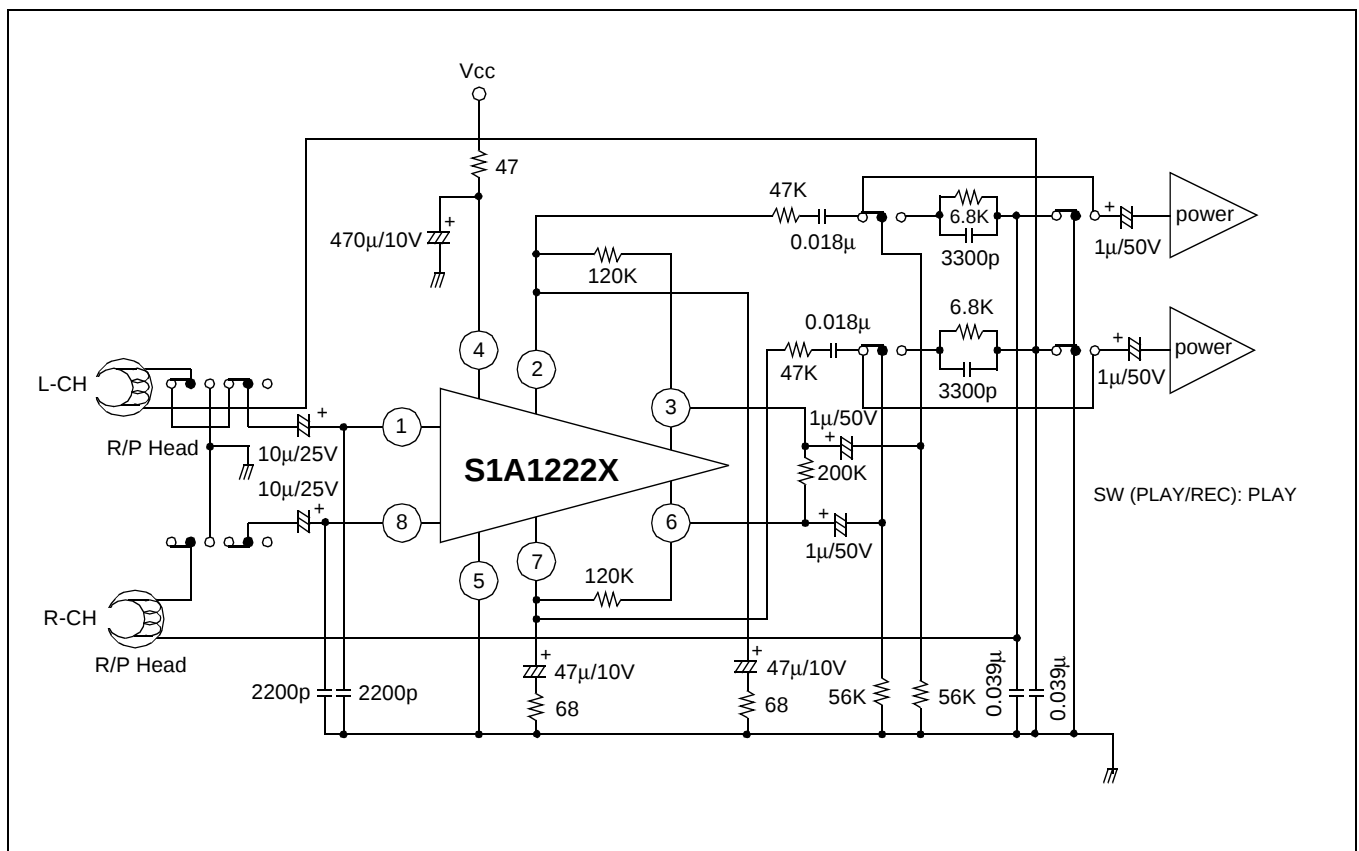
EQUIVALENT INPUT NOISE VOLTAGE
GENERATOR RESISTANCE

OUTPUT VOLTAGE-SUPPLY VOLTAGE





APPLICATION CIRCUIT



NOTES