

1.2W AUDIO POWER AMP

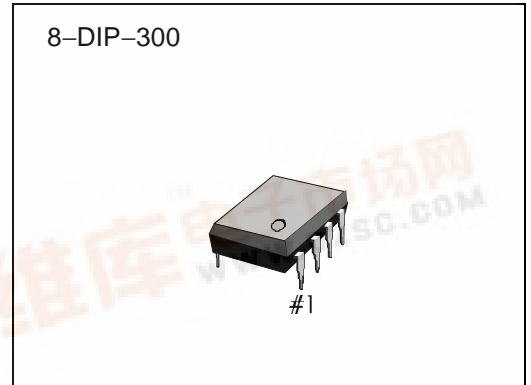
S1A2201X01

INTRODUCTION

The S1A2201X01 is a monolithic integrated audio amplifier. It is designed for the audio frequency class B amplifier.

FEATURES

- Wide range of operating supply voltage:
 $V_{CC} = 3V - 14V$
- Medium output power
- $P_O = 1.2W$ at $V_{CC} = 9V$, $R_L = 8\Omega$, THD = 10%
- Low quiescent circuit current ($I_{CCQ} = 4mA$: Typ)
- Good ripple rejection
- Minimum number of external parts required



ORDERING INFORMATION

Device	Package	Operating Temperature
S1A2201X01-D0B0	8-DIP-300	-20°C - + 70°C

BLOCK DIAGRAM

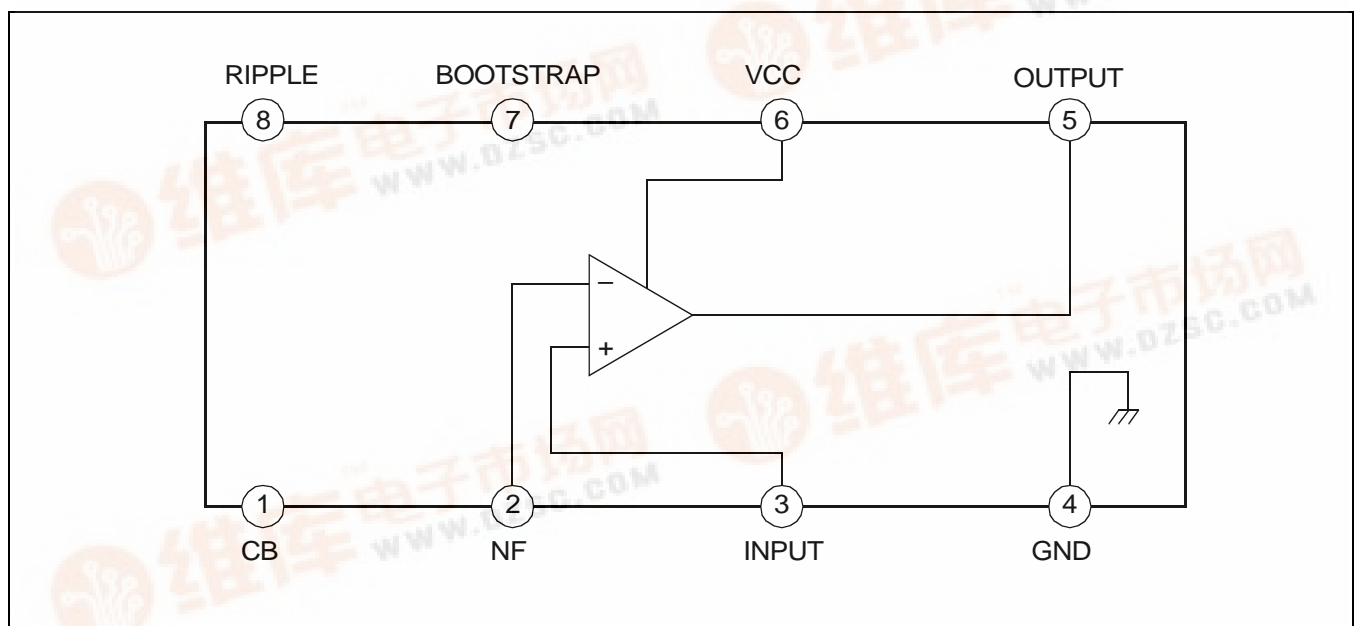


Figure 1.

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Output Peak Current	I_{PK}	1.5	A
Power Dissipation	P_D	1.25	W
Operating Temperature	T_{OPR}	- 20 — + 70	°C
Storage Temperature	T_{STG}	- 40 — + 150	°C

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V_{CC} = 9V, f = 1kHz, R_G = 600Ω, R_F = 120Ω, R_L = 8Ω, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current	I_{CCQ}	$V_I = 0$	-	4	12	mA
Output Power	P_O	$V_{CC} = 9V, R_L = 4\Omega, THD = 10\%$	-	1.6	-	W
		$V_{CC} = 9V, R_L = 8\Omega, THD = 10\%$	0.9	1.2	-	
		$V_{CC} = 6V, R_L = 4\Omega, THD = 10\%$	-	0.75	-	
		$V_{CC} = 6V, R_L = 8\Omega, THD = 10\%$	0.4	0.5	-	
		$V_{CC} = 12V, R_L = 8\Omega, THD = 10\%$	-	2	-	
Total Harmonic Distortion	THD	$P_O = 500mW$	-	0.3	1.0	%
Open Loop Voltage Gain	G_{VO}	$R_F = 0\Omega$	-	75	-	dB
Closed Loop Voltage Gain	G_{VC}	$R_F = 120\Omega$	33	36	39	dB
Input Resistance	R_I	-	-	5	-	MΩ
Output Noise Voltage	V_{NO}	$R_G = 10k\Omega$ BW (-3dB) = 50Hz - 20kHz	-	0.3	1.0	mV

TEST CIRCUIT

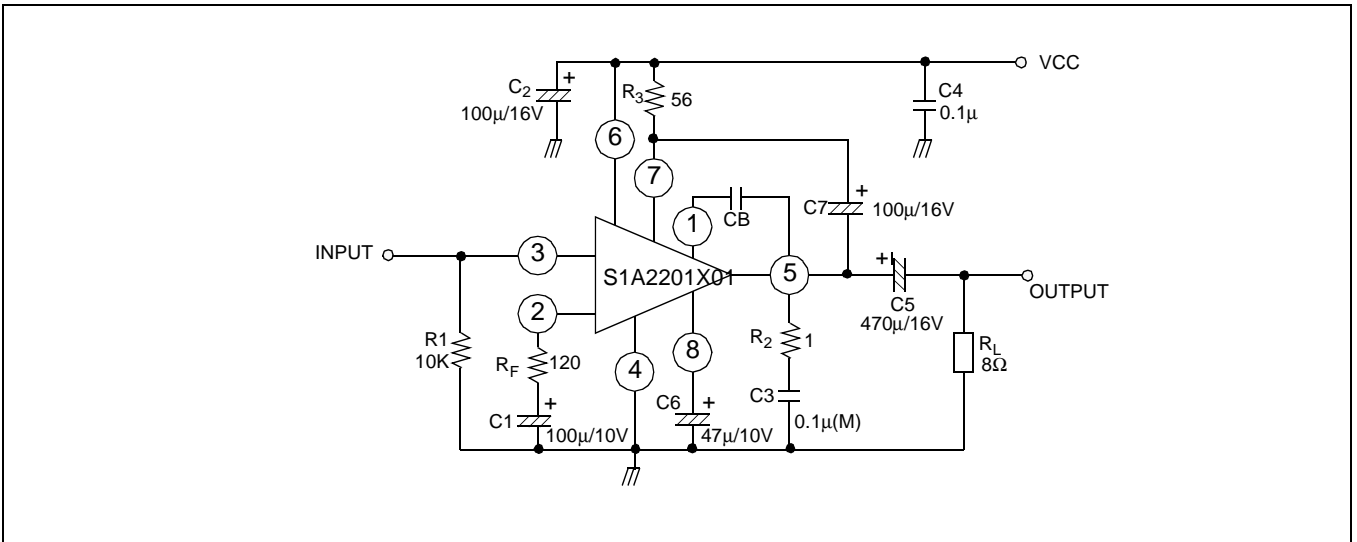
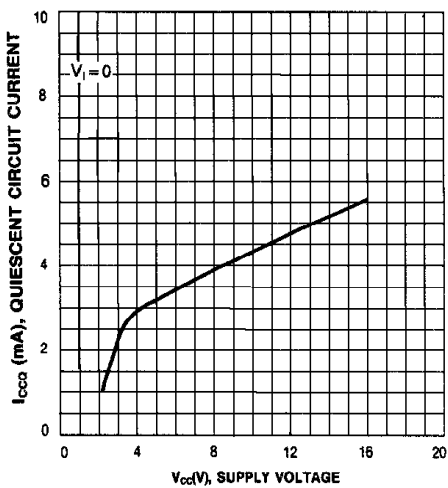
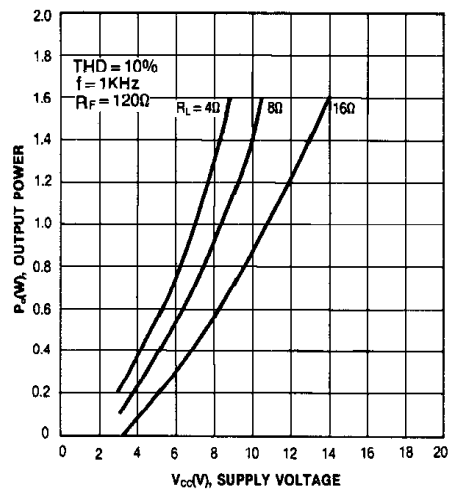


Figure 2.

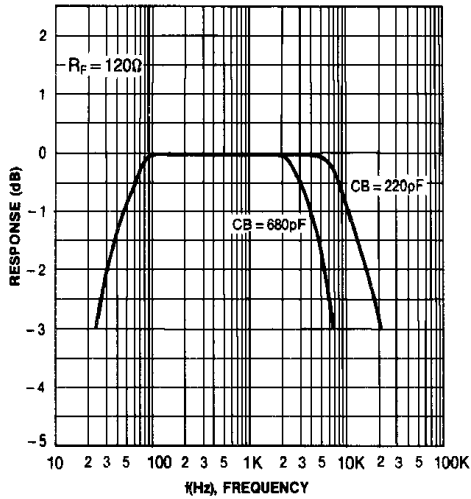
QUIESCENT CIRCUIT CURRENT—SUPPLY VOLTAGE



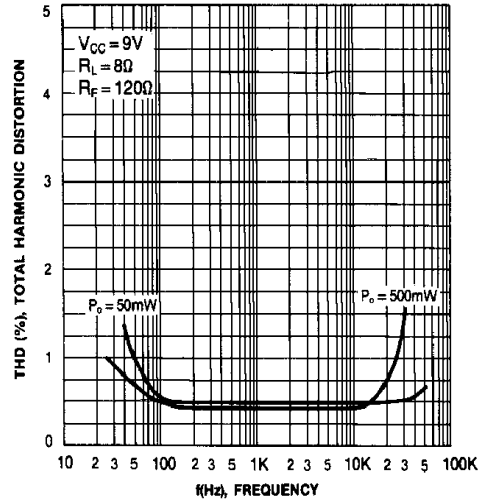
OUTPUT POWER—SUPPLY VOLTAGE



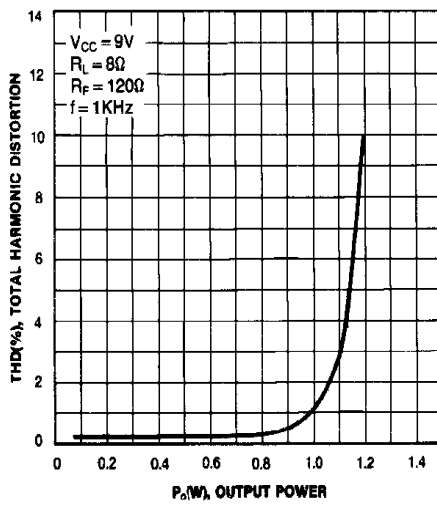
FREQUENCY RESPONSE



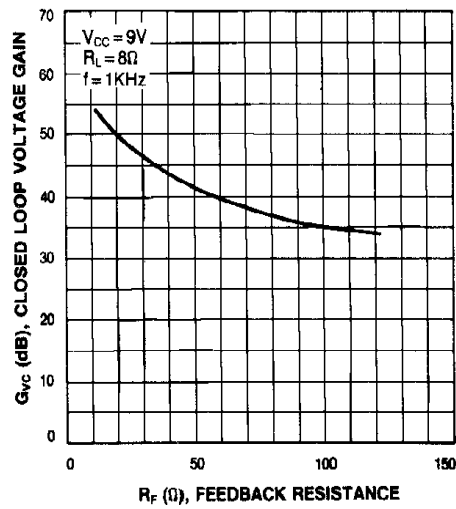
TOTAL HARMONIC DISTORTION-FREQUENCY



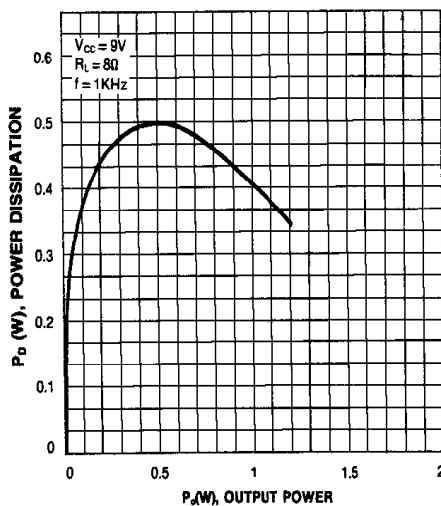
TOTAL HARMONIC DISTORTION-OUTPUT POWER



VOLTAGE GAIN-FEEDBACK RESISTANCE



POWER DISSIPATION-OUTPUT POWER



POWER DISSIPATION-SUPPLY VOLTAGE

