AN7112

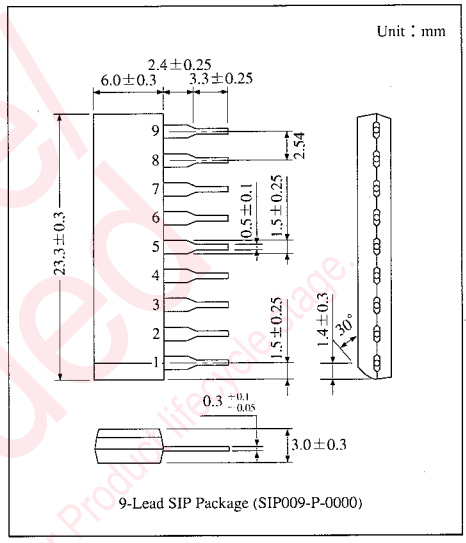
0.5W Audio Power Amplifier Circuit

■ Overview

The AN7112 is an integrated circuit designed for 0.5W audio power amplifier.

■ Features

- Wide operating supply voltage range : V_{CC}=4V~14V
- Low quiescent current : I_{CQ}=15mA (at V_{CC}=6V, R_L=8 Ω)

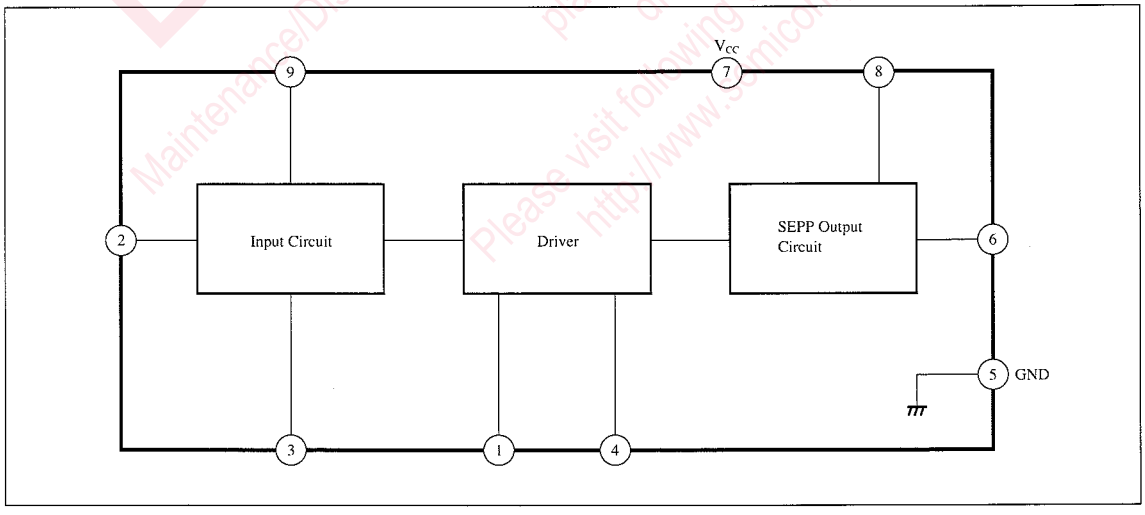


9-Lead SIP Package (SIP009-P-0000)

■ Pin Descriptions

Pin No.	Pin Name
1	Phase Compensation
2	Input
3	Negative Feedback
4	Phase Compensation
5	GND
6	Output
7	V_{CC}
8	Bootstrap
9	Ripple Filter

■ Block Diagram



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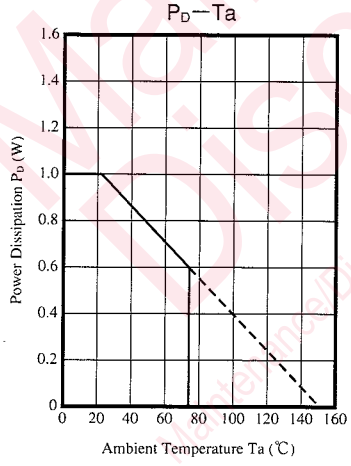
■ Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{CC}	14	V
Total Supply Current	$I_{CC\ (peak)}$	500	mA
Power Dissipation	P_D	1	W
Operating Ambient Temperature	T_{opr}	−25 ~ +75	℃
Storage Temperature	T_{stg}	−55 ~ +150	℃

■ Electrical Characteristics (V_{CC}=6V, R_L=8Ω, f=1kHz, Ta=25℃)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Circuit Current	I_{CQ}	V_{CC}=4V, V_i=0mV	5	—	—	mA
	I_{CQ}	V_{CC}=6V, V_i=0mV	—	15	20	mA
	I_{CQ}	V_{CC}=9V, V_i=0mV	—	17	23	mA
Open Circuit Voltage Gain	G_{VO}	P_O=100mW, R_{NF}=0Ω	65	71	—	dB
Closed Circuit Voltage Gain	G_{VC}	P_O=100mW, R_{NF}=47Ω	47	50	52	dB
Maximum Output Power	P_O	V_{CC}=6V, THD=10%	0.45	0.5	—	W
	P_O	V_{CC}=9V, R_L=16Ω, THD=10%	—	0.7	—	W
Total Harmonic Distortion	THD	P_O=100mW	—	0.3	1.0	%
Input Resistance	R_i		—	15	—	kΩ
Output Noise Voltage	V_{no}	BW=50Hz~20kHz, R_g=10kΩ	—	0.4	1.0	mV



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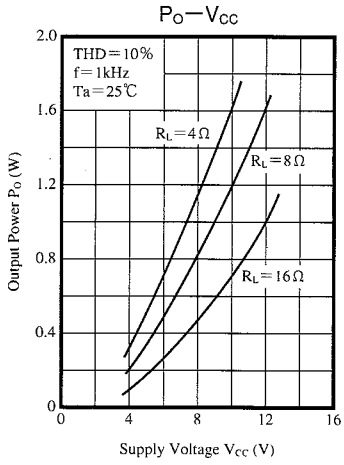
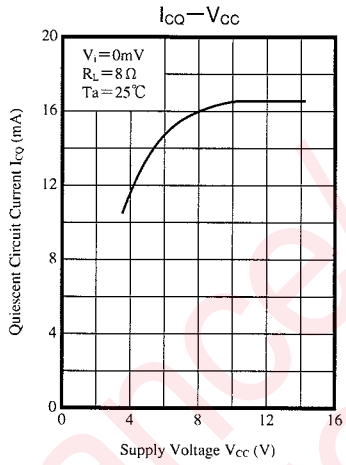
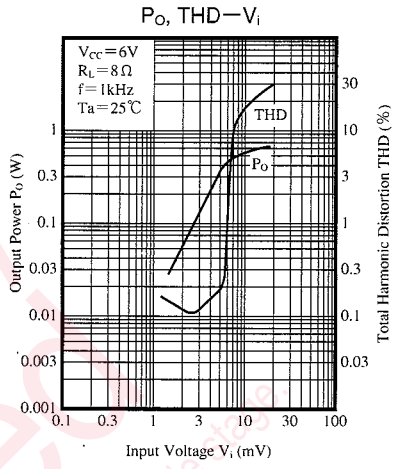
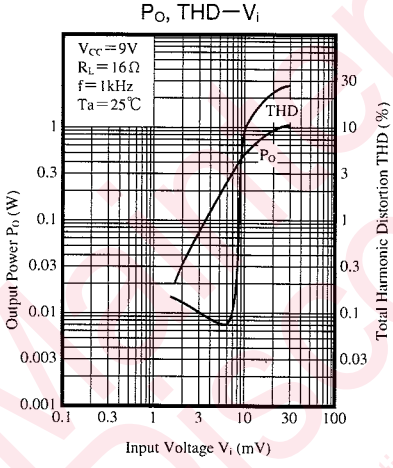
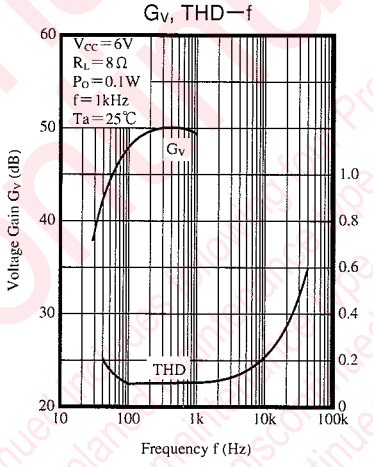
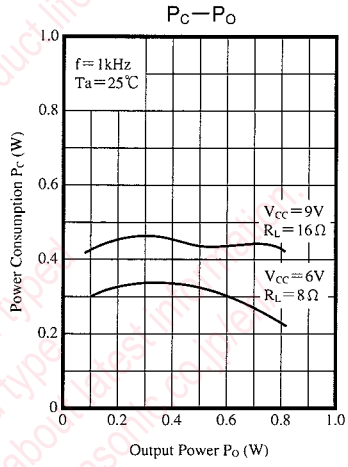




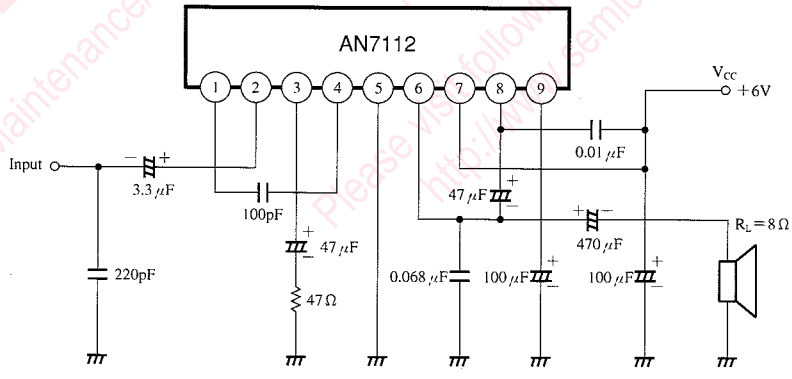




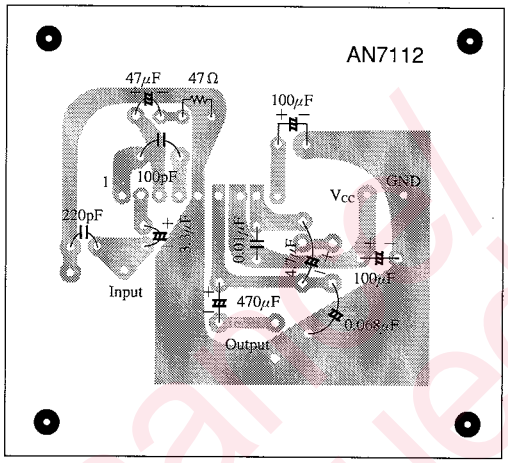




■ Application Circuit



■ Printed Circuit Board Layout



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