

# AN7112

## 0.5W Audio Power Amplifier

### ■ Description

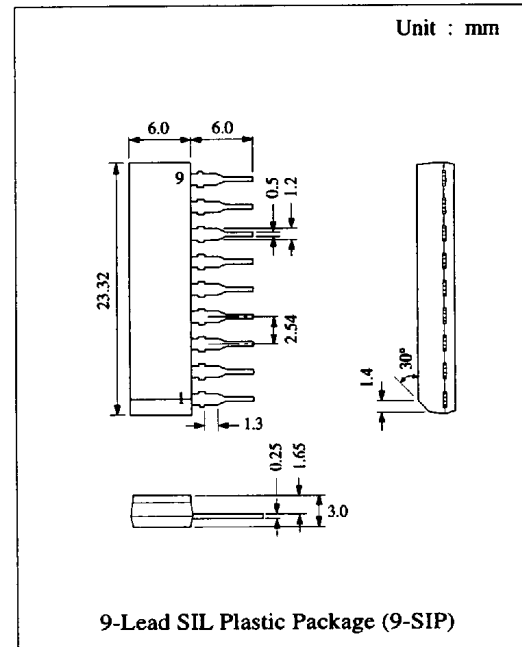
The AN7112 is a monolithic integrated circuit designed for 0.5W audio power amplifier.

### ■ Features

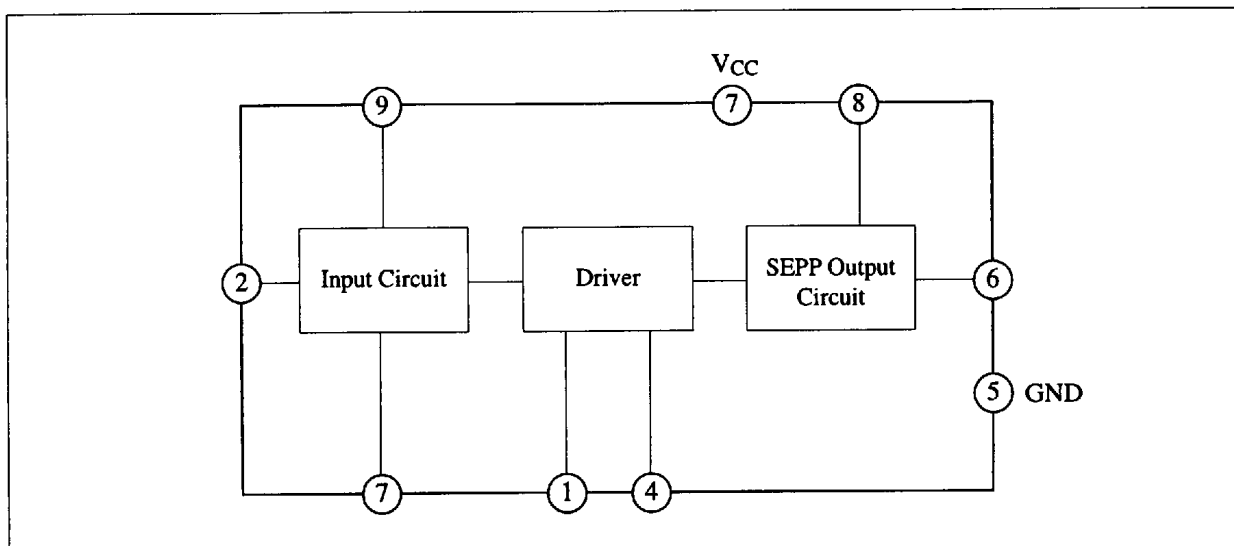
- Wide operating supply voltage range:  $V_{CC} = 4V \sim 14V$
- Low quiescent current:  $I_{CQ} = 15mA$   
(at  $V_{CC} = 6V, R_L = 8\Omega$ )

### ■ Pin

Pin No.	Pin Name
1	Phase Compensation
2	Input
3	N.F.B.
4	Phase Compensation
5	GND
6	Output
7	V <sub>CC</sub>
8	Bootstrap
9	Ripple Filter



### ■ Block Diagram



### ■ Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

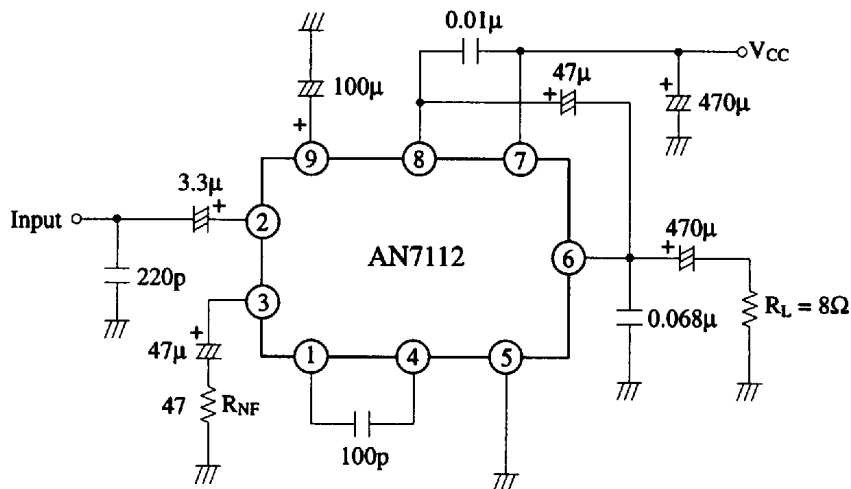
Item	Symbol	Rating	Unit
Supply Voltage	$V_{CC}$	14	V
Supply Current	$I_{CC(\text{peak})}$	500	mA
Power Dissipation	$P_D$	1	W
Operating Ambient Temperature	$T_{opr}$	-25 ~ +75	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

Operating Supply Voltage Range:  $V_{CC} = 4.0\text{V} \sim 14.0\text{V}$

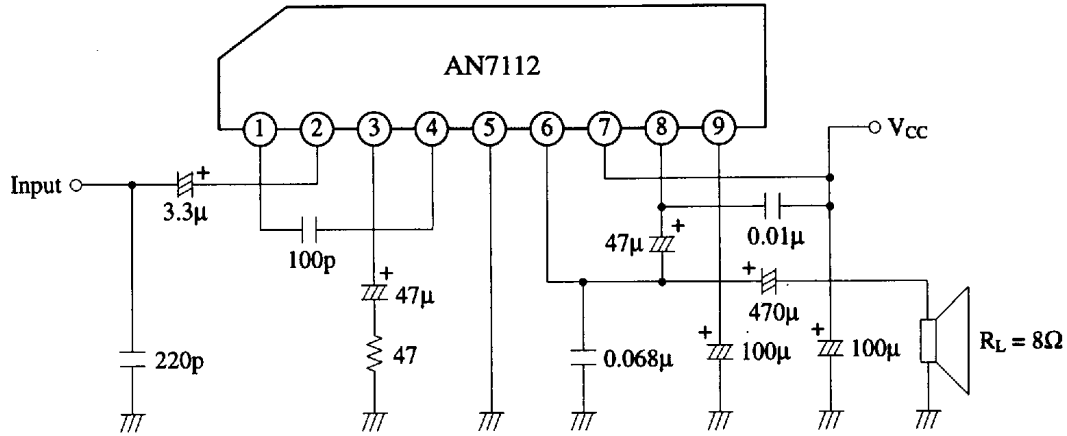
### ■ Electrical Characteristics ( $V_{CC}=6\text{V}$ , $R_L=8\Omega$ , $f=1\text{kHz}$ , $T_a=25^\circ\text{C}$ )

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

### Test Circuit



■ Application Circuit



■ Characteristics Curve

