

# AN7116

## 1W Audio Power Amplifier Circuit

### ■ Description

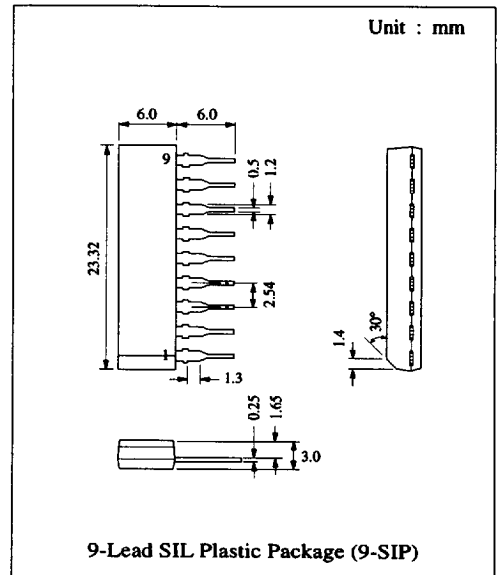
The AN7116 is a monolithic integrated circuit designed for 1W audio power amplifier.

### ■ Features

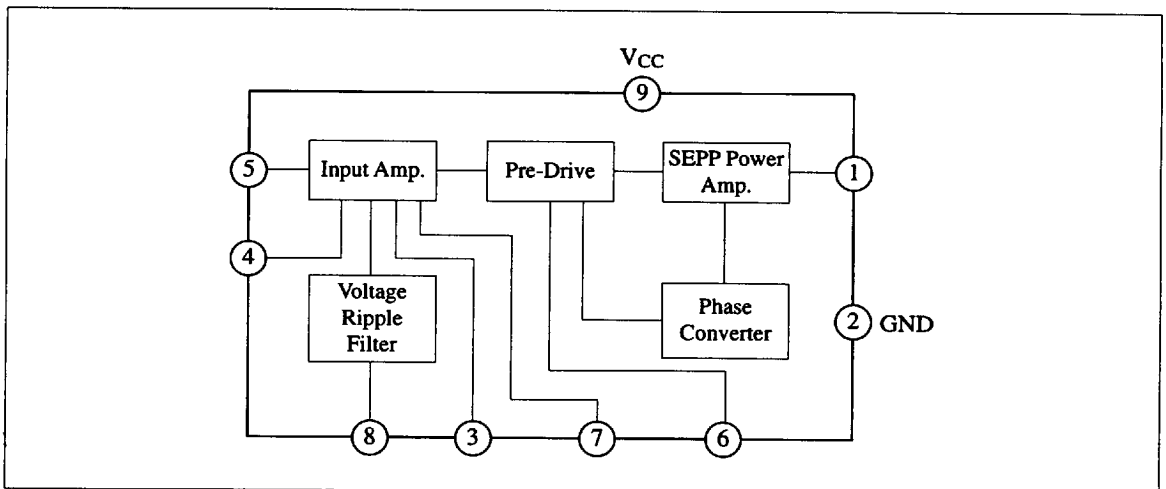
- Low quiescent current:  $I_{CQ} = 13\text{mA}$  typ.  
(at  $V_{CC} = 6\text{V}$ ,  $R_L = 4\Omega$ )
- Low voltage operation:  $V_{CC} = 3 \sim 9\text{V}$ .

### ■ Pin

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



### ■ Block Diagram



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

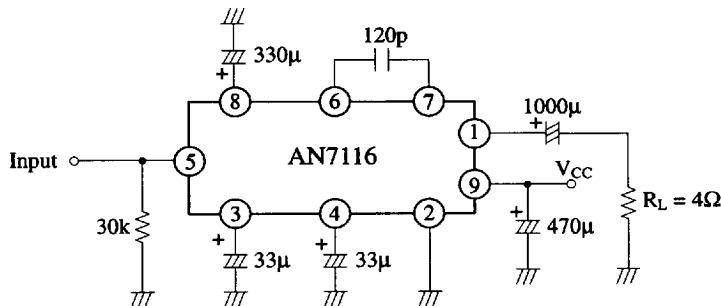
Item	Symbol	Rating	Unit
Supply Voltage	$V_{CC}$	9	V
Supply Current	$I_{CC}$	2	A
Power Dissipation	$P_D$	1	W
Operating Ambient Temperature	$T_{opr}$	-20 ~ +75	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

Operating Supply Voltage Range:  $V_{CC} = 3.0\text{V} \sim 9.0\text{V}$

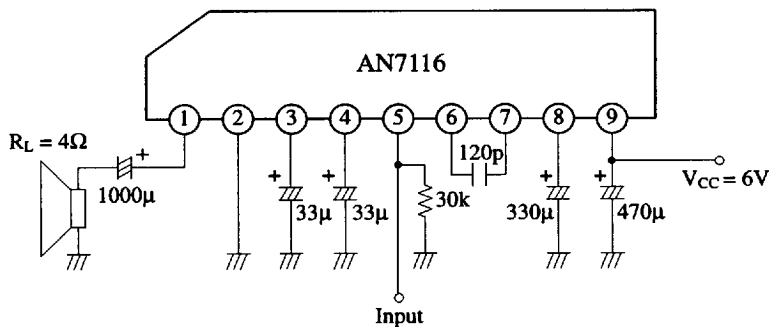
## ■ Electrical Characteristics ( $V_{CC}=6\text{V}$ , $R_L=4\Omega$ , $f=1\text{kHz}$ , $T_a=25\pm 2^\circ\text{C}$ )

Item	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Current	$I_{CQ}$	$V_{in} = 0\text{mV}$		13	23	mA
Voltage Gain	$G_V$	$V_{in} = 3\text{mV}$	48	50	52	dB
Output Power	$P_O$	THD = 10%	700	770		mW
Output Power	$P_O$	$R_L = 8\Omega$ , THD = 10%		450		mW
Total Harmonic Distortion	THD	$V_{in} = 2\text{mV}$		0.6	1.5	%
Output Noise	$V_{no}$	$R_g = 10\text{k}\Omega$		0.7	2	mV
Input Resistance	$R_{in}$			30		$\text{k}\Omega$
Ripple Rejection	RR			40		dB

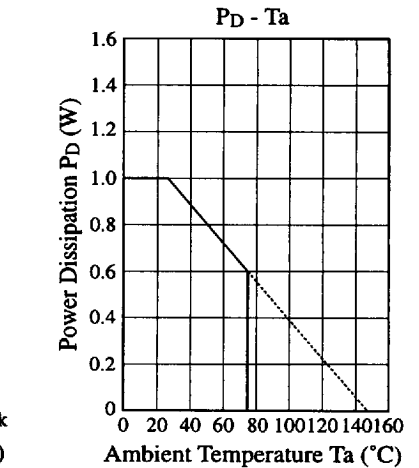
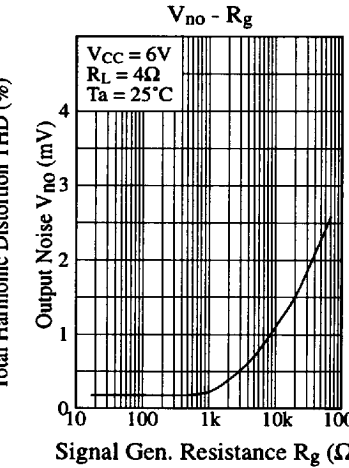
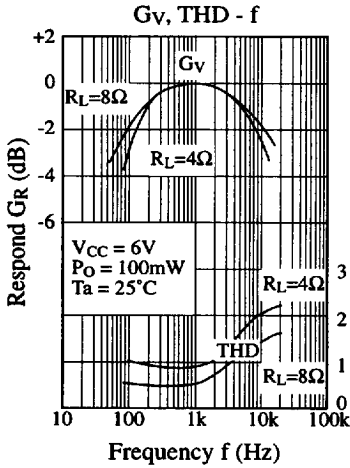
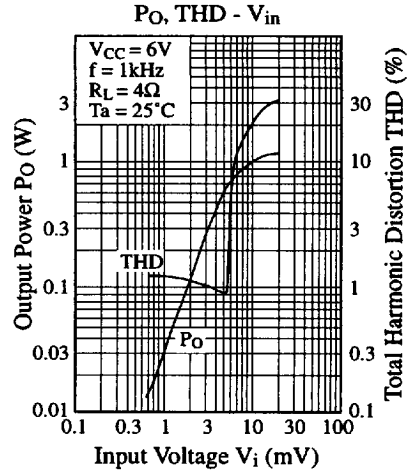
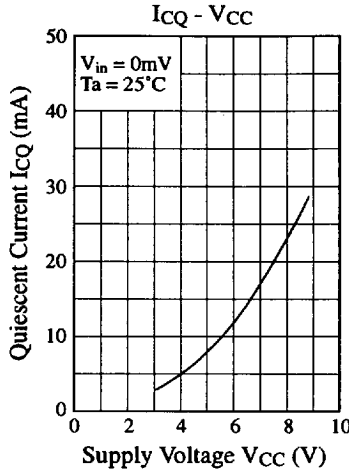
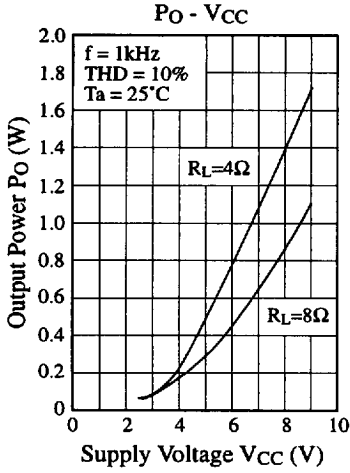
## Test Circuit



## ■ Application Circuit



■ Characteristics Curve



■ Printed Circuit Board Layout (Scale: 1:1)

