

AN7116

1W Audio Power Amplifier Circuit

■ Description

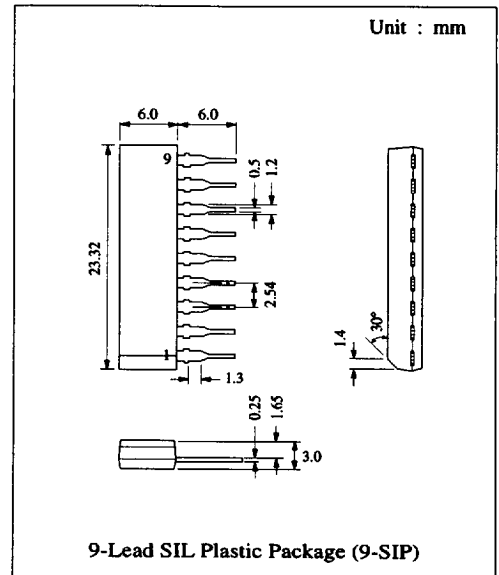
The AN7116 is a monolithic integrated circuit designed for 1W audio power amplifier.

■ Features

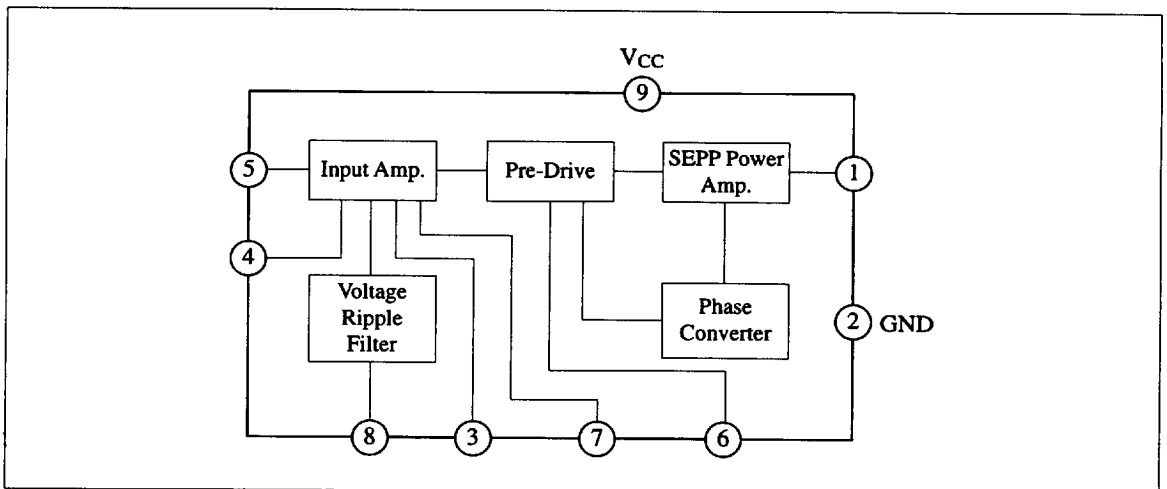
- Low quiescent current: $I_{CQ} = 13\text{mA}$ typ. (at $V_{CC} = 6\text{V}$, $R_L = 4\Omega$)
- Low voltage operation: $V_{CC} = 3 \sim 9\text{V}$.

■ 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 ($T_a=25^\circ\text{C}$)

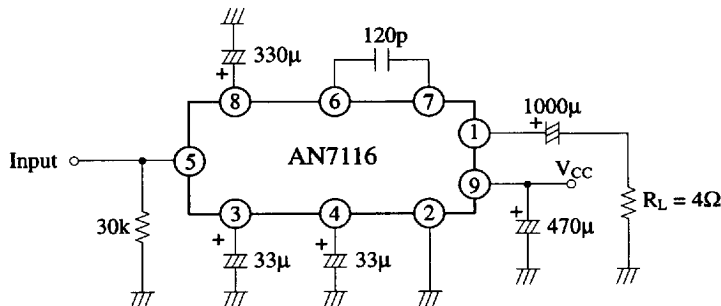
| Item | Symbol | Rating | Unit |
|-------------------------------|-----------|------------|------------------|
| Supply Voltage | V_{CC} | 9 | V |
| Supply Current | I_{CC} | 2 | A |
| Power Dissipation | P_D | 1 | W |
| Operating Ambient Temperature | T_{opr} | -20 ~ +75 | $^\circ\text{C}$ |
| Storage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

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

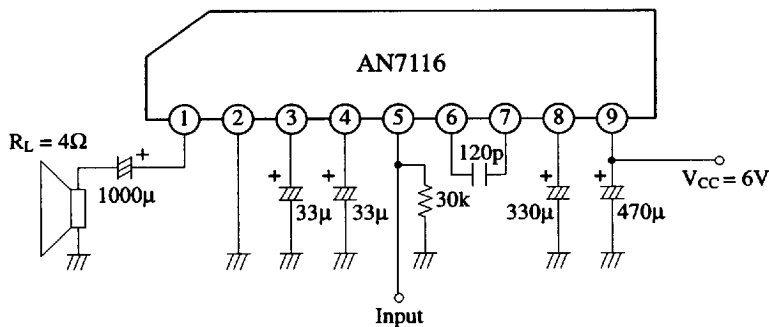
■ Electrical Characteristics ($V_{CC}=6\text{V}$, $R_L=4\Omega$, $f=1\text{kHz}$, $T_a=25\pm 2^\circ\text{C}$)

| 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



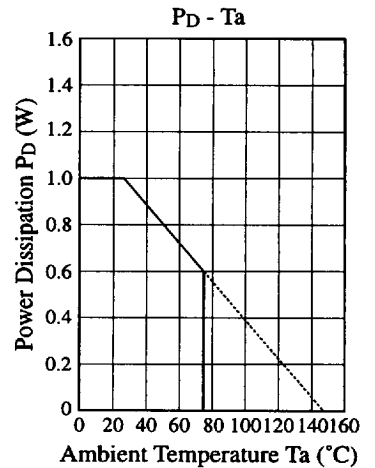
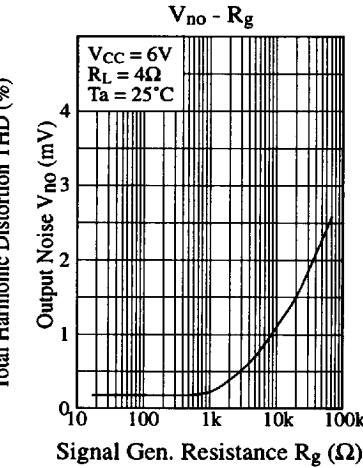
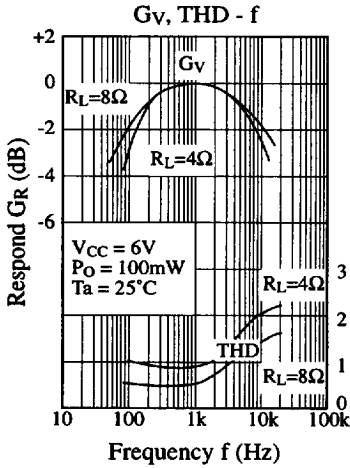
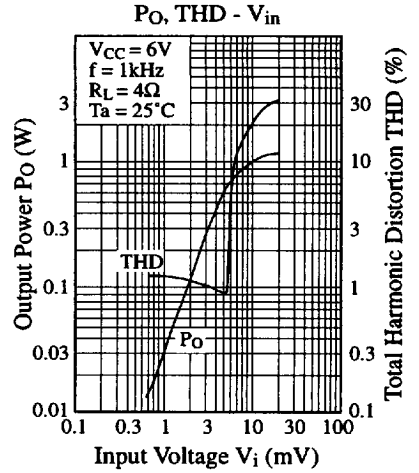
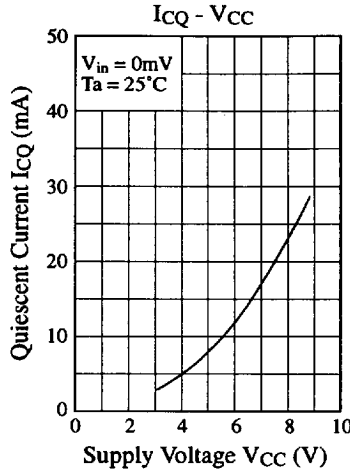
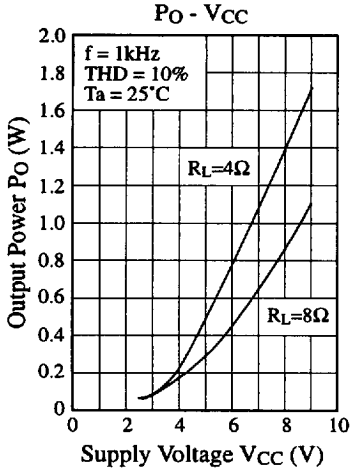
■ Application Circuit



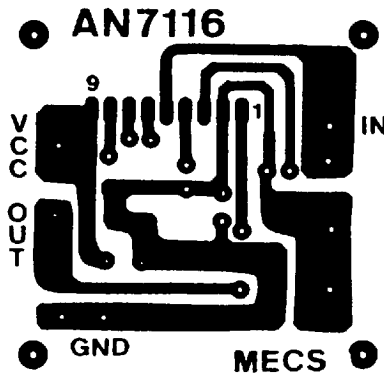
■ 6932852 0013760 347 ■

Panasonic

■ Characteristics Curve



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



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