

## LM4871 Boomer Audio Power Amplifier Series

### 1.1W Audio Power Amplifier with Shutdown Mode

#### ● Features

THD at 1 kHz at 1W continuous

average output power into 8Ω @ 0.5%

Output power at 10% THD+N at 1 kHz into 8Ω @ 1.5W

Shutdown Current 0.6 μA

#### ● General Description

The LM4871 is a bridge-connected audio power amplifier capable

of delivering typically 1.1W of continuous average power to an 8Ω @  $\dot{A}_{oad}$  with 0.5% (THD) from a 5V power supply.

Boomer audio power amplifiers were designed specifically to provide high quality output power with a minimal amount of

external components. Since the LM4871 does not require output PT PT

coupling capacitors, bootstrap capacitors, or snubber networks, it is optionally suited for low-power portable systems.

The LM4871 features an externally controlled, low-power consumption shutdown mode, as well as an internal thermal shutdown protection mechanism.

The unity-gain stable LM4871 can be configured by external gain-setting resistors.

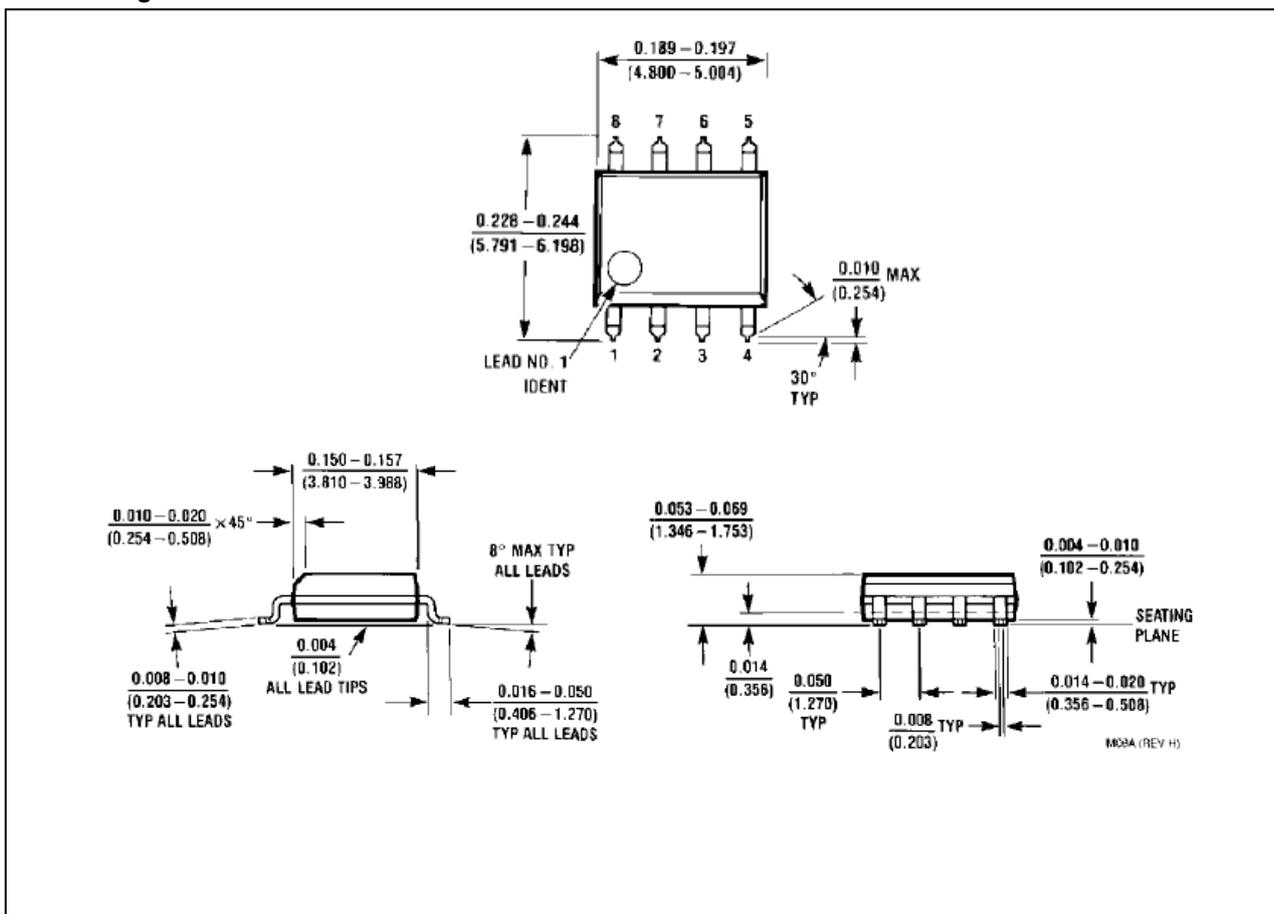
#### ● Applications

Portable Computers

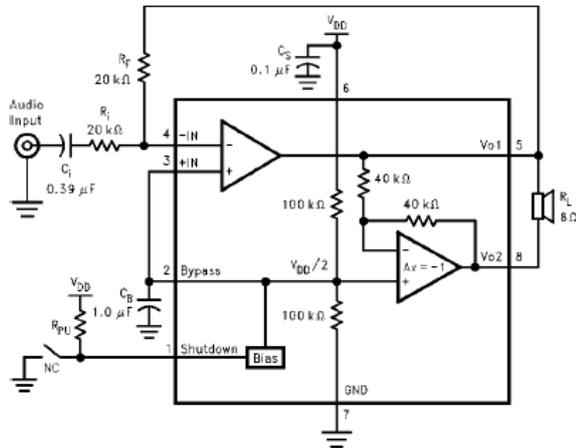
Desktop Computers

Low Voltage Audio Systems

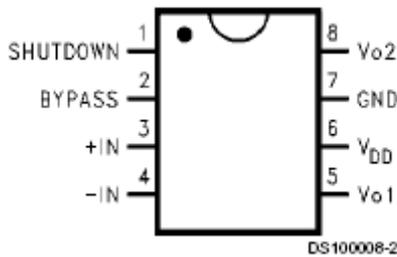
#### ● Package Information



● **Typical Application**



● **PIN CONFIGURATION**



● **Absolute Maximum Ratings** @ $T_A = 25^\circ\text{C}$  unless otherwise noted

- Supply Voltage -----6.0V
- Storage Temperature ----- $-65^\circ\text{C}$  to  $+150^\circ\text{C}$
- Input Voltage ----- $-0.3\text{V}$  to  $V_{DD} + 0.3\text{V}$
- Power Dissipation ----- Internally Limited
- ESD Susceptibility-----5000V
- Junction Temperature ----- $150^\circ\text{C}$

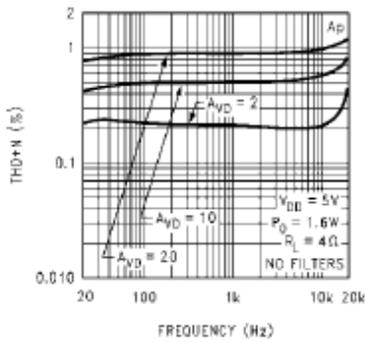
● **Electrical Characteristics**

The following specifications apply for  $V_{DD} = 5\text{V}$  unless otherwise specified. Limits apply for  $T_A = 25^\circ\text{C}$ .

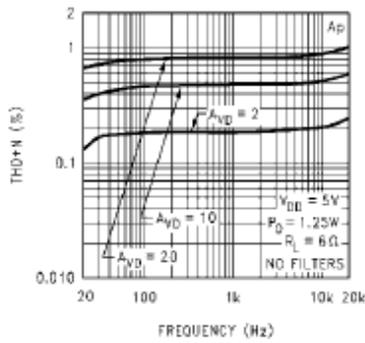
Symbol	Parameter	Conditions	Typical	Limit	Units
VDD	Supply Voltage			2.0-5.5	V
IDD	Quiescent Power Supply Current	$V_{IN} = 0\text{V}$ , $I_o = 0\text{A}$	6.5	10	mA
ISD	Shutdown Current	$V_{PIN1} = V_{DD}$	0.6	2	uA
VOS	Output Offset Voltage	$V_{IN} = 0\text{V}$	5	50	mV
Po	Output Power	THD = 0.5% (max); f = 1 kHz	1.1	1	W
		THD+N = 10%; f = 1 kHz	1.5		W
THD+N	Total Harmonic Distortion+Noise	$P_o = 1\text{ Wrms}$ ; AVD = 2; 20 Hz < f < 20 kHz	0.25		%
PSRR	Power Supply Rejection Ratio	$V_{DD} = 4.9\text{V}$ to $5.1\text{V}$	65		dB

● Typical Performance Characteristics

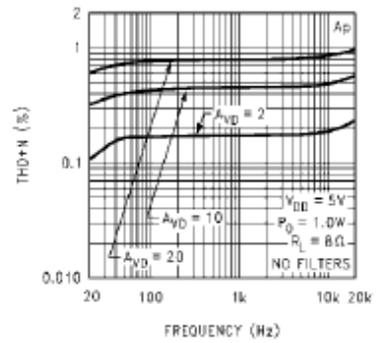
THD+N vs Frequency



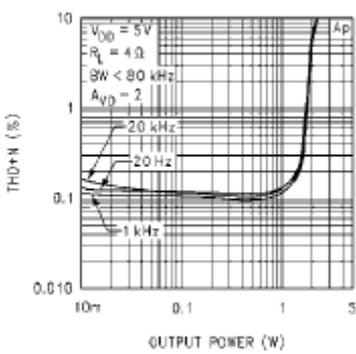
THD+N vs Frequency



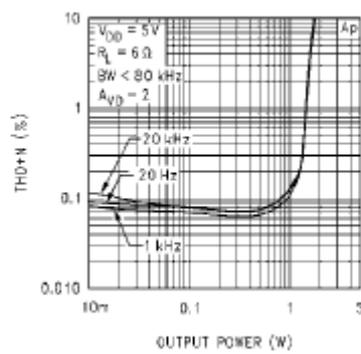
THD+N vs Frequency



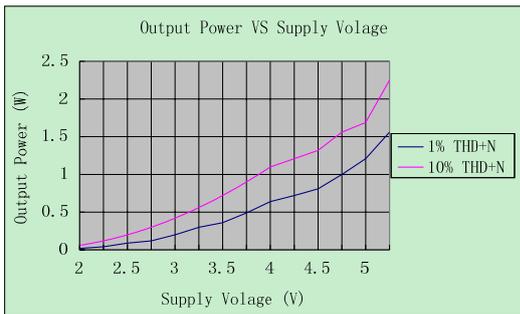
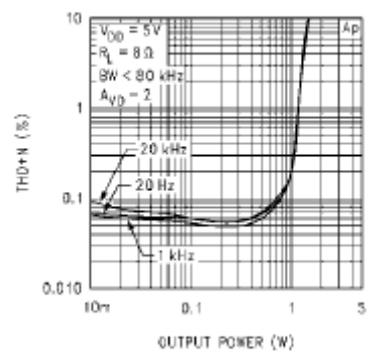
THD+N vs Output Power



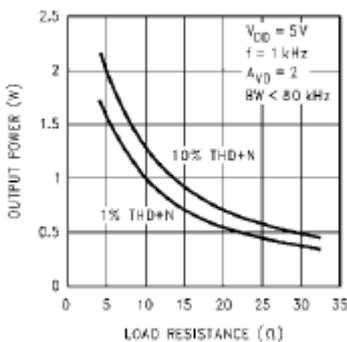
THD+N vs Output Power



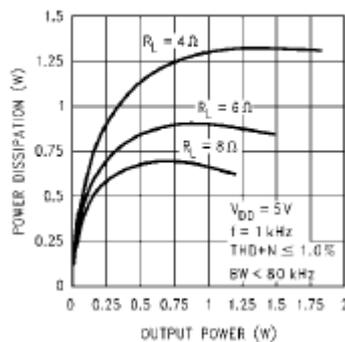
THD+N vs Output Power



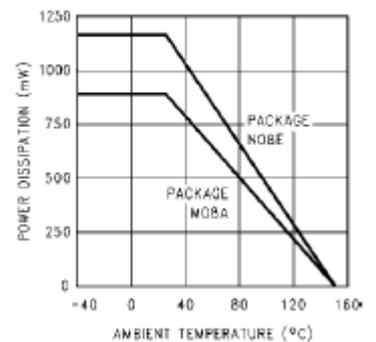
Output Power vs Load Resistance



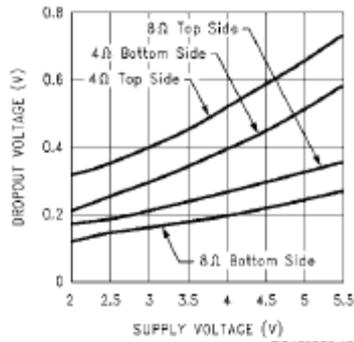
Power Dissipation vs Output Power



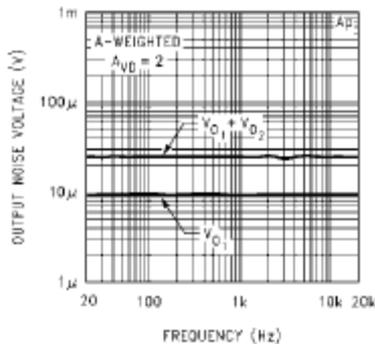
Power Derating Curve



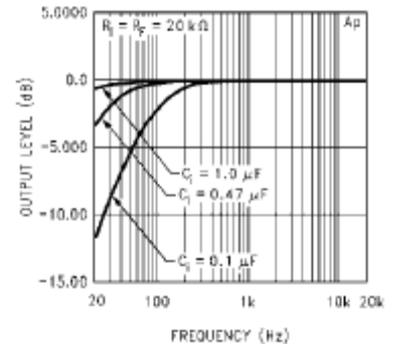
**Clipping Voltage vs Supply Voltage**



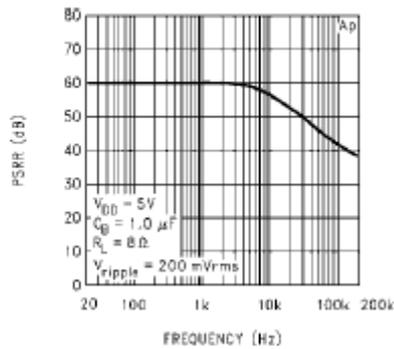
**Noise Floor**



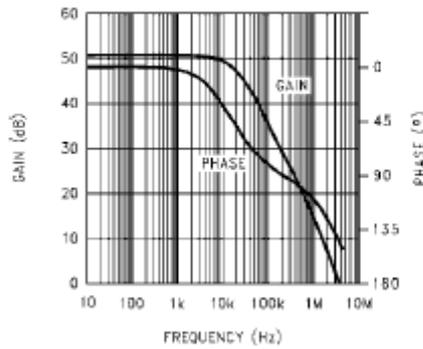
**Frequency Response vs Input Capacitor Size**



**Power Supply Rejection Ratio**



**Open Loop Frequency Response**



**Supply Current vs Supply Voltage**

