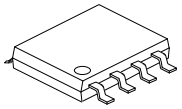
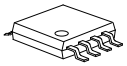
PA4871

CMOS IC

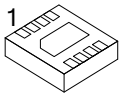
1.1W AUDIO POWER AMPLIFIER WITH SHUTDOWN MODE



SOP-8



MSOP-8



DFN3030-8

■ DESCRIPTION

As a mono bridged power amplifier which is operating on a single 5V supply, the UTC **PA4871** is capable of delivering 1.1W of output power per channel into 8Ω loads with less than 0.5% THD+N.

The UTC **PA4871** is optimally suited for low-power portable applications because of the it do not require output coupling capacitors, bootstrap capacitors or snubber networks.

By using external gain-setting resistors, the closed loop response of the unity-gain stable **PA4871** can be configured.

■ FEATURES

* Output power at 0.5% THD+N
  Supply voltage:5V
  Delivering 1.1W into a 8Ω load
* With shutdown mode
* Stable unity-gain.

■ ORDERING INFORMATION

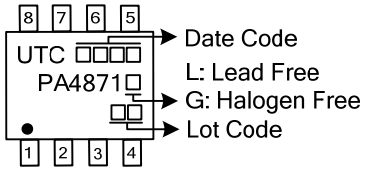
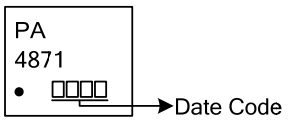
Ordering Number		Package	Packing
Lead Free	Halogen Free		
PA4871L-S08-R	PA4871G-S08-R	SOP-8	Tape Reel
PA4871L-SM1-R	PA4871G-SM1-R	MSOP-8	Tape Reel
PA4871L-K08-3030-R	PA4871G-K08-3030-R	DFN3030-8	Tape Reel

PA4871G-S08-R

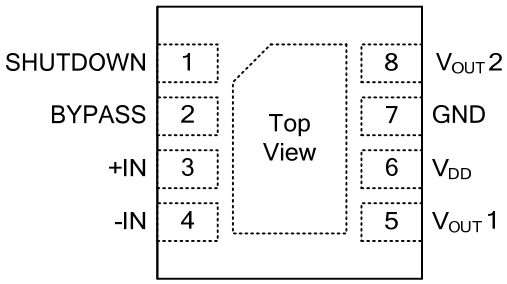
(1) Packing Type
(2) Package Type
(3) Green Package

(1) R: Tape Reel, T: Tube
(2) S08: SOP-8, SM1: MSOP-8,
K08-3030:DFN3030-8
(3) G: Halogen Free and Lead Free, L: Lead Free

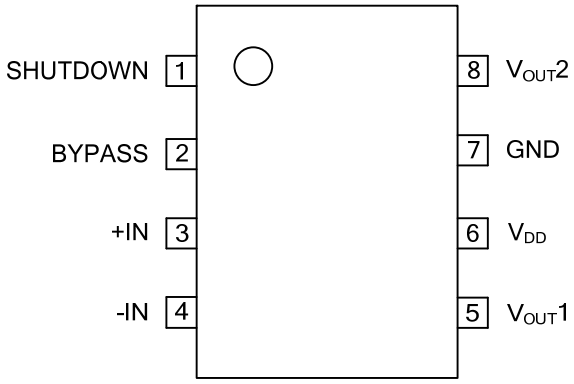
■ MARKING

SOP-8 / MSOP-8	DFN3030-8
	

■ PIN CONFIGURATION



DFN3030-8

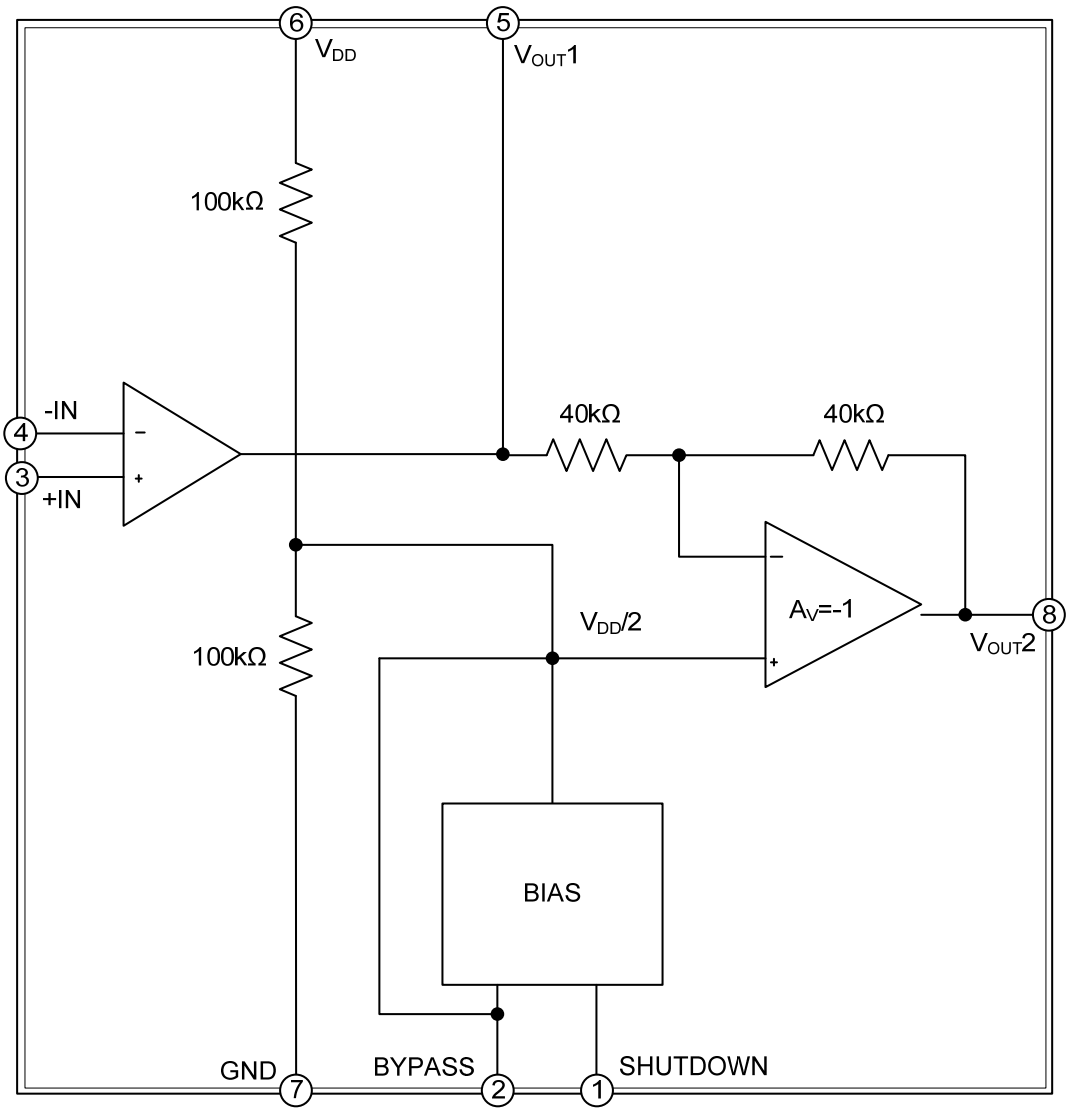


SOP-8 / MSOP-8

■ PIN DESCRIPTION

PIN NO	PIN NAME	DESCRIPTION
1	SHUTDOWN	Shutdown control input pin.
2	BYPASS	Connected to a bypass capacitor.
3	+IN	+ pin of input signal.
4	-IN	- pin of input signal.
5	V_{OUT1}	Output pin1
6	V_{DD}	Supply voltage
7	GND	GND
8	V_{OUT2}	Output pin2

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	6	V
Input Voltage	V_{IN}	-0.3 ~ V_{DD}+0.3	V
Power Dissipation	P_D	Internally Limited	W
Junction Temperature	T_J	150	°C
Operating Temperature	T_{OPR}	-40 ~ +85	°C
Storage Temperature	T_{STG}	-65 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

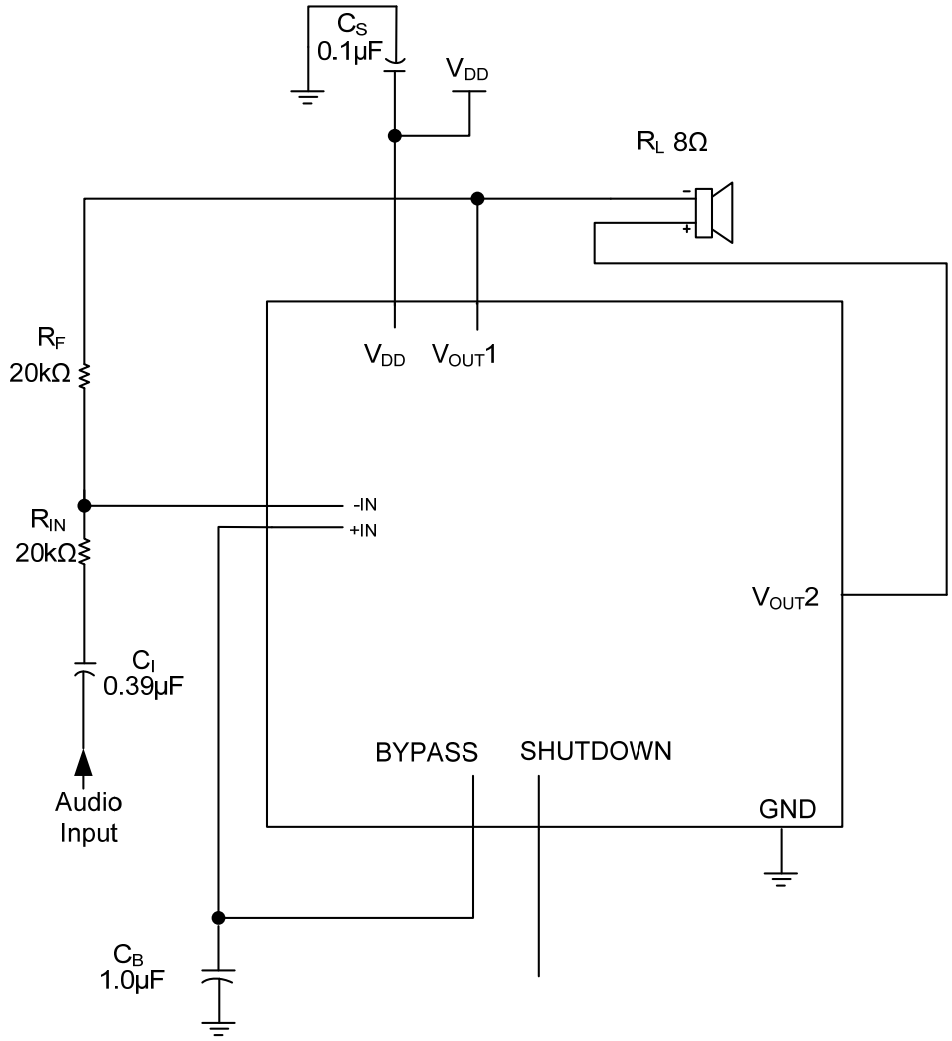
PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOP-8	θ_{JA}	140	°C/W
	MSOP-8		210	°C/W
	DFN3030-8		59	°C/W
Junction to Case	SOP-8	θ_{JC}	35	°C/W
	MSOP-8		56	°C/W
	DFN3030-8		4.3 (Note)	°C/W

Note: Surface mounted on 1 in ^{2} copper pad of FR4 board

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, V_{DD}=5V, R_L=8Ω, unless otherwise specified)

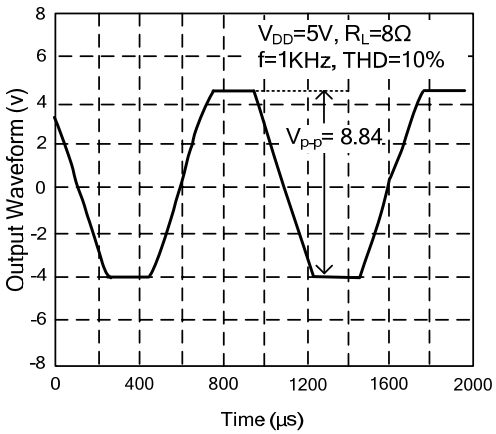
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
DC ELECTRICAL CHARACTERISTICS							
Supply Voltage		V_{DD}		2.0	5	5.5	V
DC Differential Output Voltage		$V_{OUT(DIFF)}$	V_{IN}=0V		5	50	mV
Supply Current	Mute Mode	I_{DD}	V_{IN}=0V,I_{OUT}=0A		6.5	10.0	mA
	Shutdown Mode		V_{PIN1}=V_{DD}		0.6	2	μA
Output Power		P_{OUT}	THD=0.5%, f_{IN}=1kHz	1.0	1.10		W
			THD=10%, f_{IN}=1kHz		1.5		W
Total Harmonic Distortion+Noise		THD+N	P_{OUT}=1W_{RMS}, 20Hz<f_{IN}<20kHz, G=2V/V		0.25		%
Power Supply Ripple Rejection		PSRR	V_{DD}=4.9V to 5.1V		65		dB

■ TYPICAL APPLICATION CIRCUIT

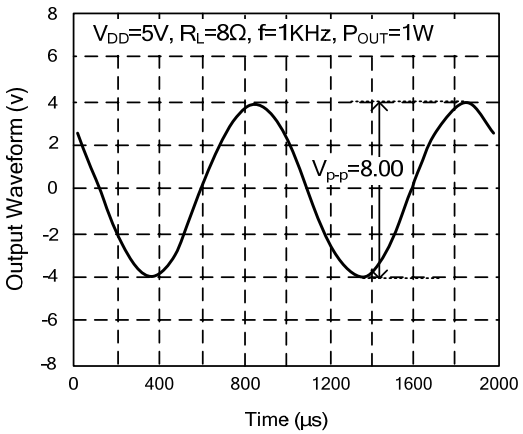


■ TYPICAL CHARACTERISTICS

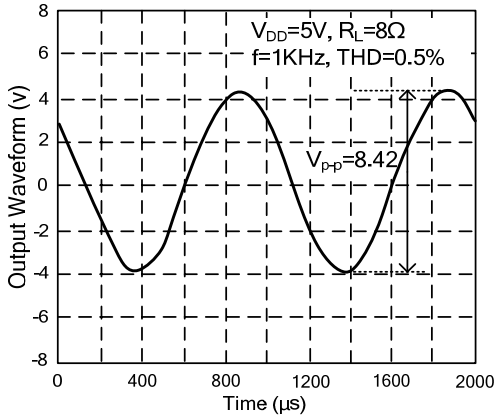
Output Waveform



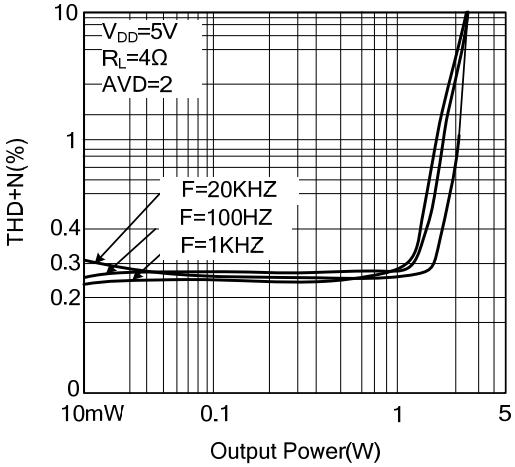
Output Waveform



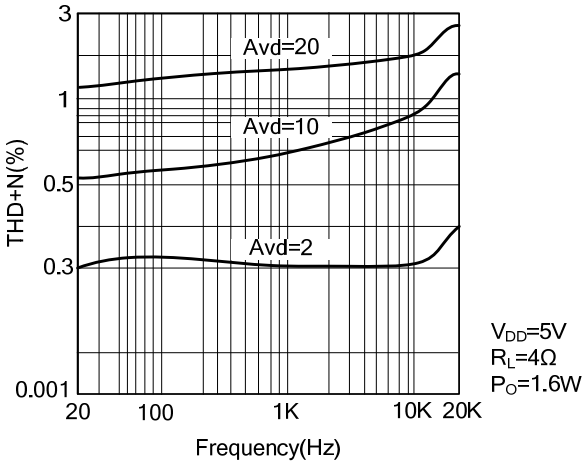
Output Waveform



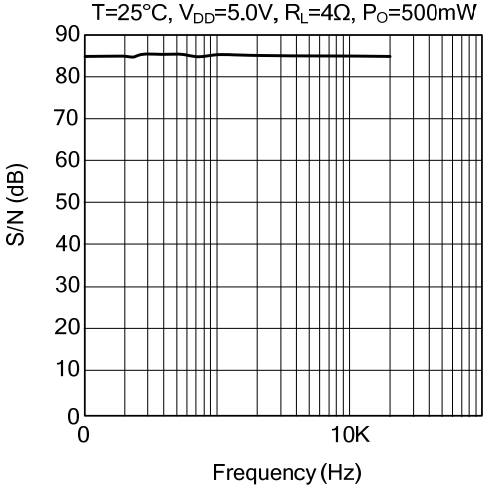
THD+N vs Output Power



THD+N vs Frequency



S/N vs. Frequency
T=25°C, V_{DD}=5.0V, R_L=4Ω, P_O=500mW



■ TYPICAL CHARACTERISTICS (Cont.)