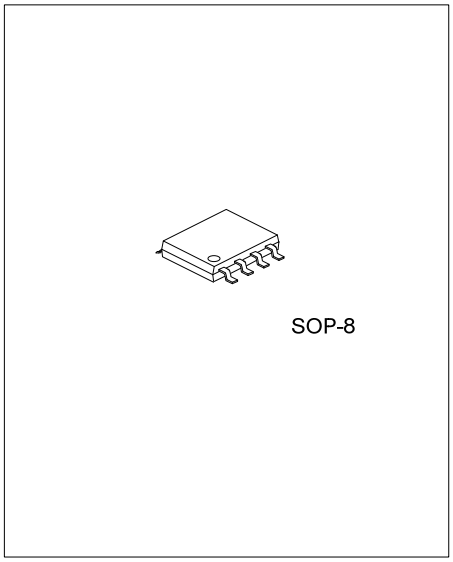
PA4819

CMOS IC

350mW AUDIO POWER AMPLIFIER WITH SHUTDOWN MODE



Lead-free: PA4819L
Halogen-free: PA4819G

■ DESCRIPTION

As a mono bridged power amplifier which is operating on a single 5V supply, the UTC **PA4819** is capable of delivering 350mW$_{RMS}$ of output power per channel into 16Ω loads with less than 10% THD+N and also delivering 300mW$_{RMS}$ of output power per channel into 8Ω loads with less than 10% THD+N.

The UTC **PA4819** 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 **PA4819** can be configured.

■ FEATURES

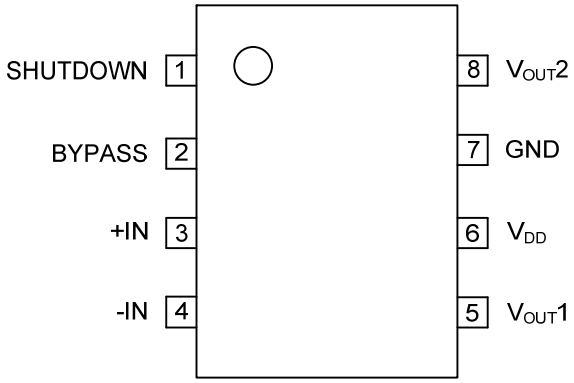
* Output power at 10% THD+N
  Supply voltage:5V
  Delivering 350mW$_{RMS}$ into a 16Ω load
  Delivering 300mW$_{RMS}$ into a 8Ω load
* With shutdown mode
* Stable unity-gain.

■ ORDERING INFORMATION

Ordering Number			Package	Packing
Normal	Lead Free	Halogen Free		
PA4819-S08-R	PA4819L-S08-R	PA4819G-S08-R	SOP-8	Tape Reel
PA4819-S08-T	PA4819L-S08-T	PA4819G-S08-T	SOP-8	Tube

PA4819L-S08-R (1)Packing Type (2)Package Type (3)Lead Plating	(1) R: Tape Reel, T: Tube (2) S08: SOP-8 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ PIN CONFIGURATION



■ PIN DESCRIPTION

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

■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	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.

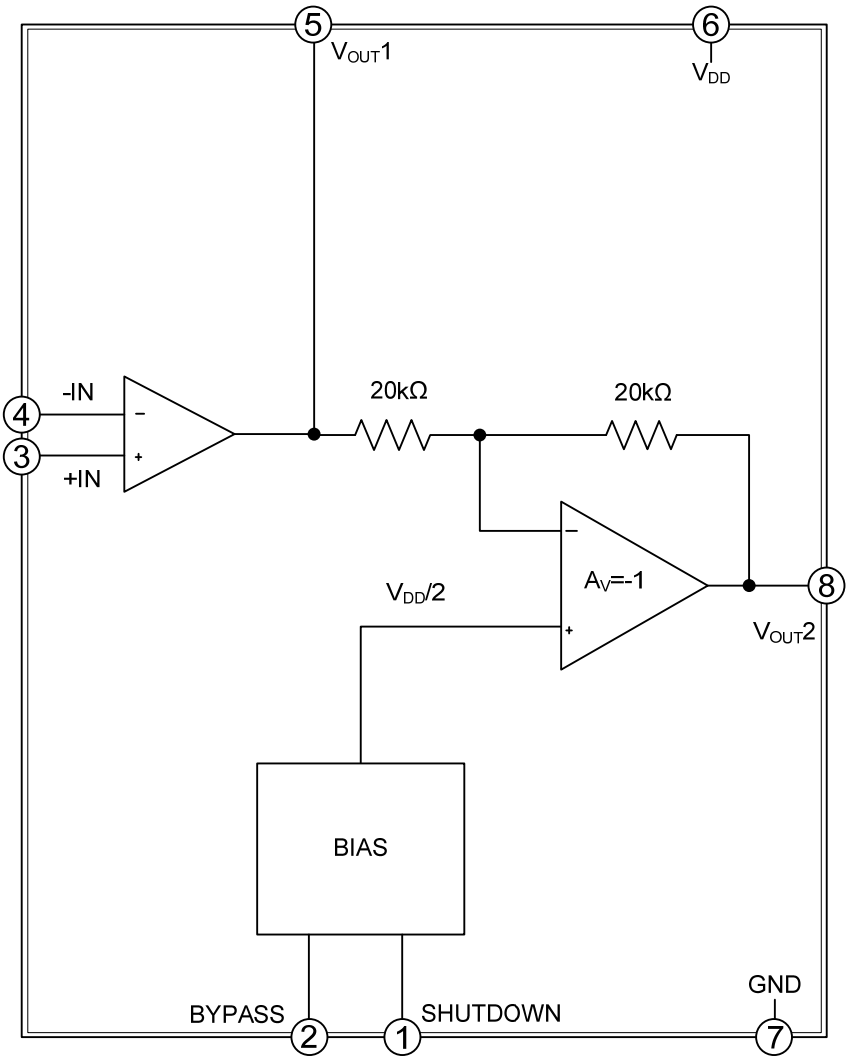
■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient	θ_{JA}			170	℃/W
Junction to Case	θ_{JC}			35	℃/W

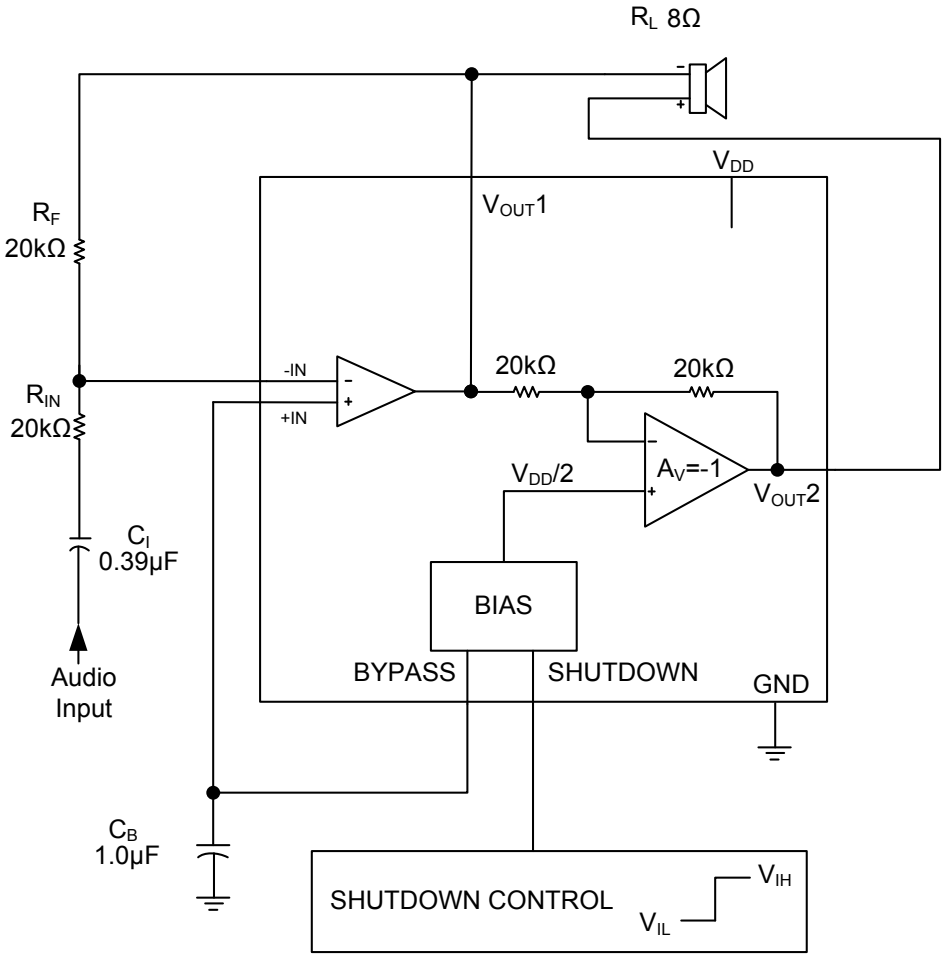
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, R_L=16Ω, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
FOR V_{DD}=3V							
Supply Voltage		V_{DD}		2.0	5	5.5	V
Shutdown voltage Input High-Level		V_{SDIH}		2.4			V
Shutdown voltage Input Low-Level		V_{SDIL}				0.6	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		1.0	3.0	mA
	Shutdown Mode		V_{PIN1}=V_{DD}		0.7	5	μA
Output Power		P_{OUT}	THD=10%, f_{IN}=1kHz, R_L=16Ω,		110		mW
			THD=10%, f_{IN}=1kHz, R_L=8Ω,		90		
Total Harmonic Distortion+Noise		THD+N	P_{OUT}=80mW_{RMS}, f_{IN}=1kHz, G=2V/V		1		%
FOR V_{DD}=5V							
Supply Voltage		V_{DD}		2.0	5	5.5	V
Shutdown voltage Input High-Level		V_{SDIH}		4			V
Shutdown voltage Input Low-Level		V_{SDIL}				1	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		1.5	3.0	mA
	Shutdown Mode		V_{PIN1}=V_{DD}		1	5	μA
Output Power		P_{OUT}	THD=10%, f_{IN}=1kHz, R_L=16Ω,		350		mW
			THD=10%, f_{IN}=1kHz, R_L=8Ω,		300		
Total Harmonic Distortion+Noise		THD+N	P_{OUT}=270mW_{RMS}, f_{IN}=1kHz, G=2V/V		1		%

■ BLOCK DIAGRAM



■ TYPICAL APPLICATION CIRCUIT



■ TYPICAL CHARACTERISTICS