



PA4819

CMOS IC

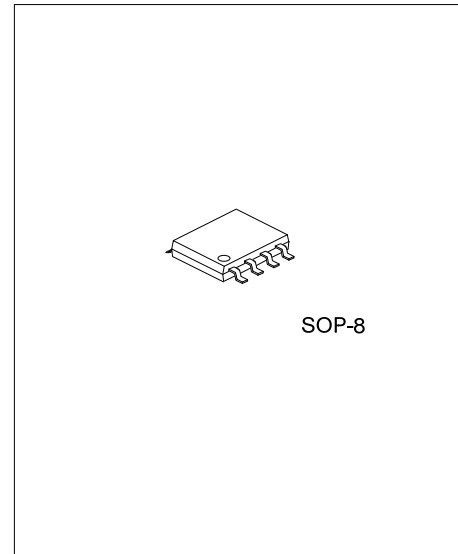
350mW AUDIO POWER AMPLIFIER WITH SHUTDOWN MODE

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

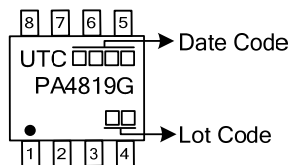
- * Output power at 10% THD+N
Supply voltage:5V
Delivering 350mW_{RMS} into a 16Ω load
Delivering 300mW_{RMS} into a 8Ω load
- * With shutdown mode
- * Stable unity-gain.

ORDERING INFORMATION

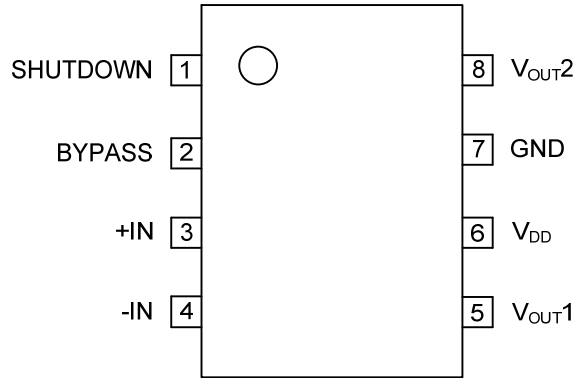
| Ordering Number | Package | Packing |
|-----------------|---------|-----------|
| PA4819G-S08-R | SOP-8 | Tape Reel |

| | |
|--|---|
| <p>PA4819G-S08-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package | <ul style="list-style-type: none"> (1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free and Lead Free |
|--|---|

MARKING



■ 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 _{OUT1} | O | Output pin1 |
| 6 | V _{DD} | | Supply voltage |
| 7 | GND | | GND |
| 8 | V _{OUT2} | 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 | °C/W |
| Junction to Case | θ_{JC} | | | 35 | °C/W |

■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, $R_L=16\Omega$, unless otherwise specified)

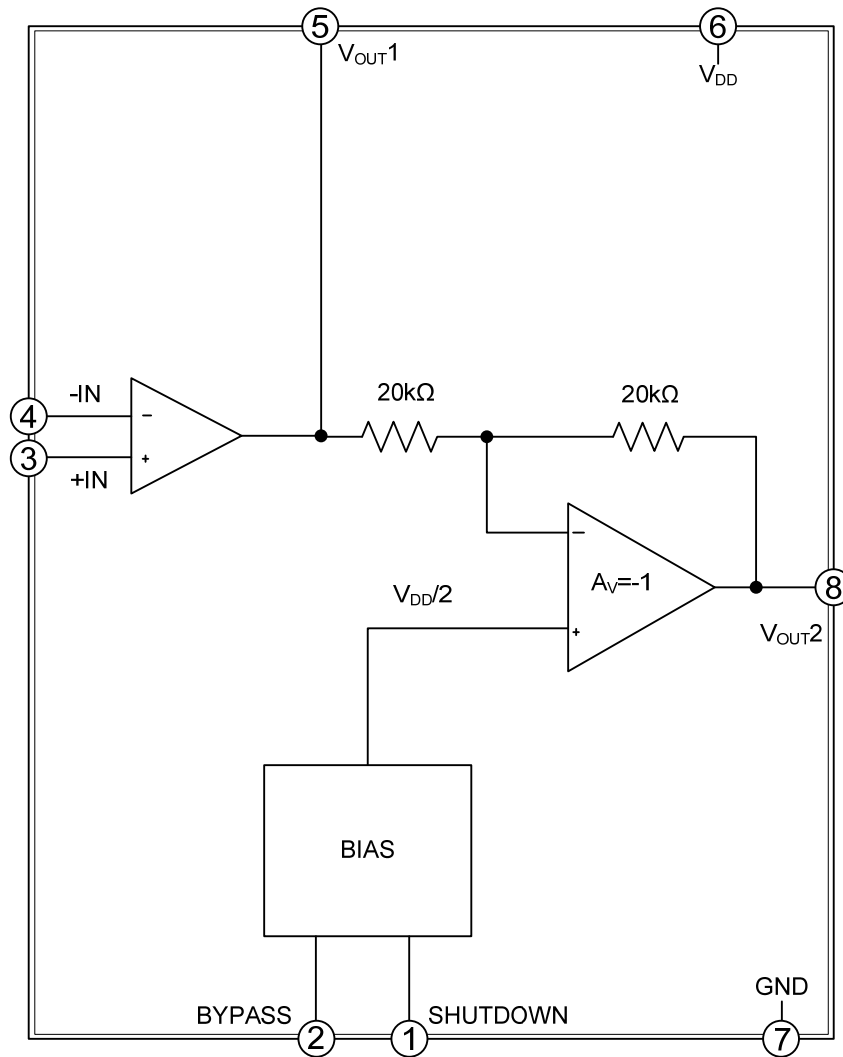
For $V_{DD}=3\text{V}$

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|-----------------------------------|-----------------|---|-----|-----|-----|---------------|
| 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 | $V_{OUT(DIFF)}$ | $V_{IN}=0\text{V}$ | | 5 | 50 | mV |
| Supply Current | Mute Mode | I_{DD} $V_{IN}=0\text{V}$, $I_{OUT}=0\text{A}$ $V_{PIN1}=V_{DD}$ | | 1.0 | 3.0 | mA |
| | Shutdown Mode | | | 0.7 | 5 | μA |
| Output Power | P_{OUT} | THD=10%, $f_{IN}=1\text{kHz}$, $R_L=16\Omega$, THD=10%, $f_{IN}=1\text{kHz}$, $R_L=8\Omega$, | | 110 | | mW |
| | | | | 90 | | |
| Total Harmonic Distortion+Noise | THD+N | $P_{OUT}=80\text{mW}_{RMS}$, $f_{IN}=1\text{kHz}$, $G=2\text{V/V}$ | | 1 | | % |

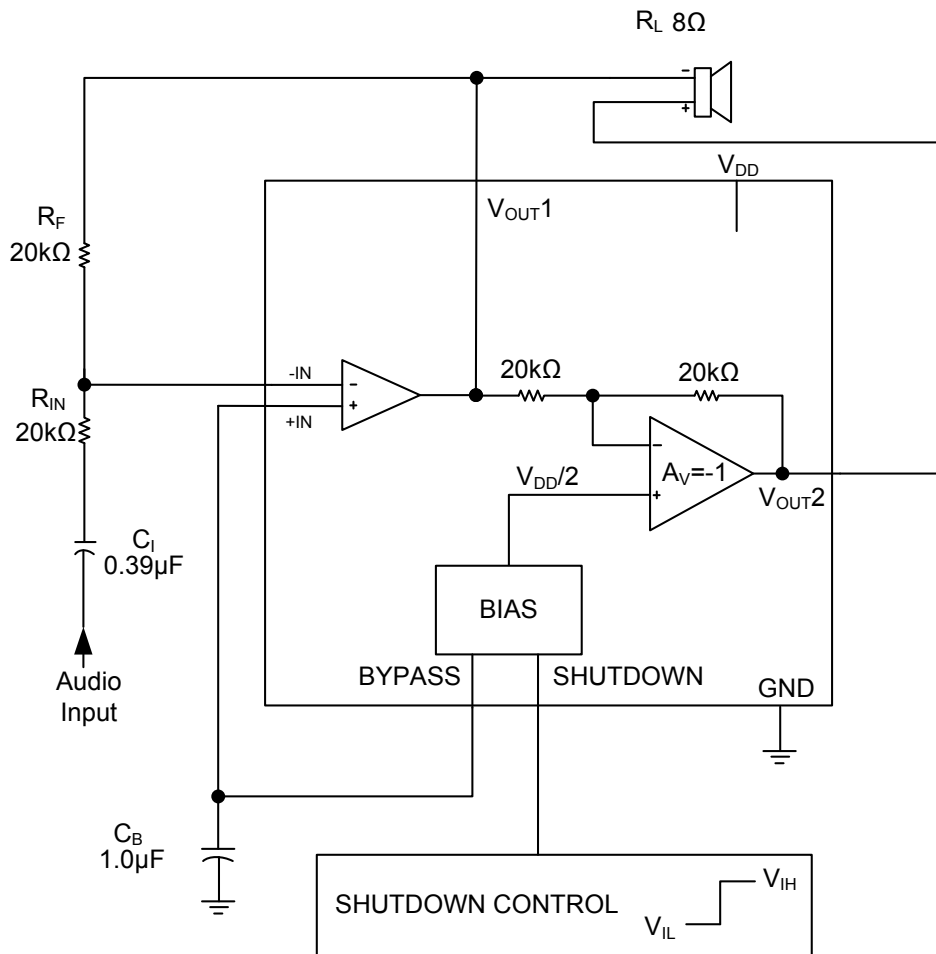
For $V_{DD}=5\text{V}$

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|-----------------------------------|-----------------|---|-----|-----|-----|---------------|
| 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 | $V_{OUT(DIFF)}$ | $V_{IN}=0\text{V}$ | | 5 | 50 | mV |
| Supply Current | Mute Mode | I_{DD} $V_{IN}=0\text{V}$, $I_{OUT}=0\text{A}$ $V_{PIN1}=V_{DD}$ | | 1.5 | 3.0 | mA |
| | Shutdown Mode | | | 1 | 5 | μA |
| Output Power | P_{OUT} | THD=10%, $f_{IN}=1\text{kHz}$, $R_L=16\Omega$, THD=10%, $f_{IN}=1\text{kHz}$, $R_L=8\Omega$, | | 350 | | mW |
| | | | | 300 | | |
| Total Harmonic Distortion+Noise | THD+N | $P_{OUT}=270\text{mW}_{RMS}$, $f_{IN}=1\text{kHz}$, $G=2\text{V/V}$ | | 1 | | % |

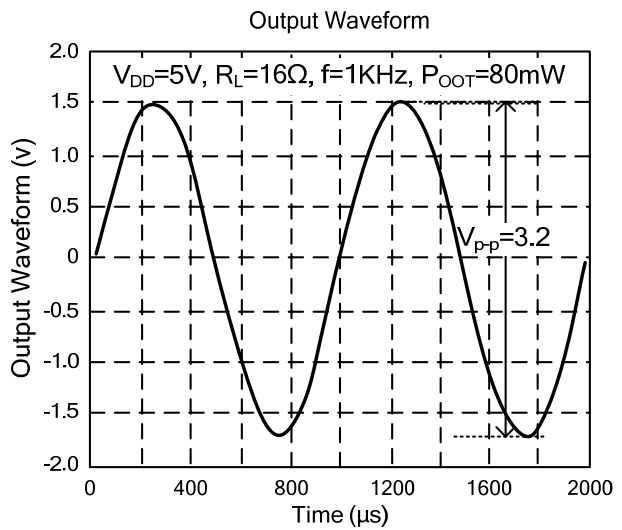
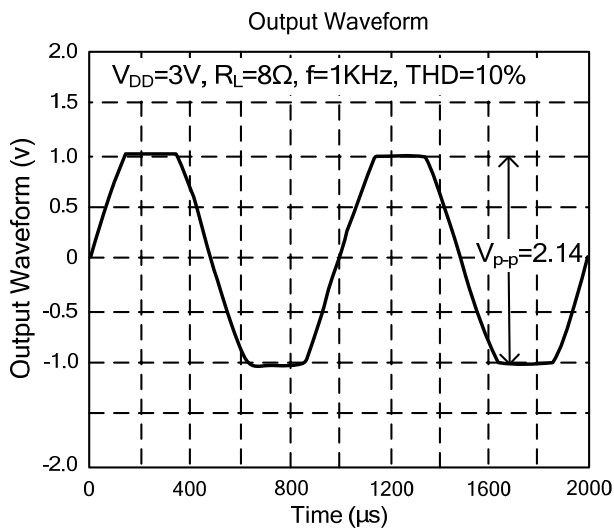
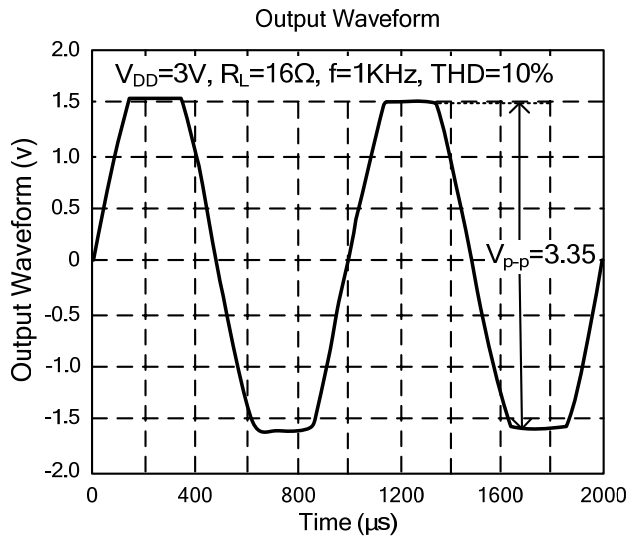
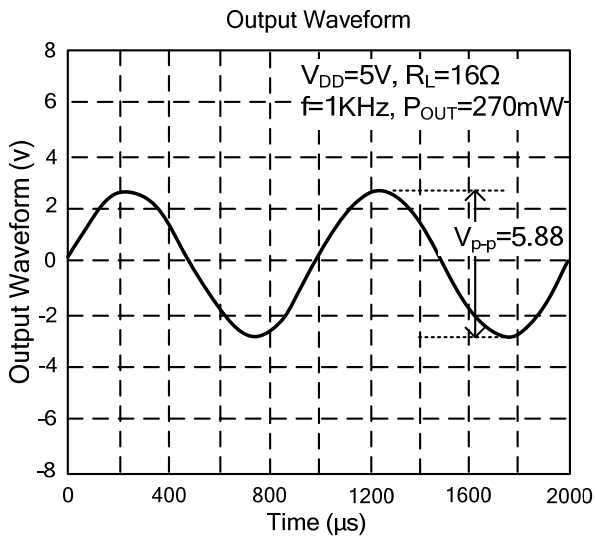
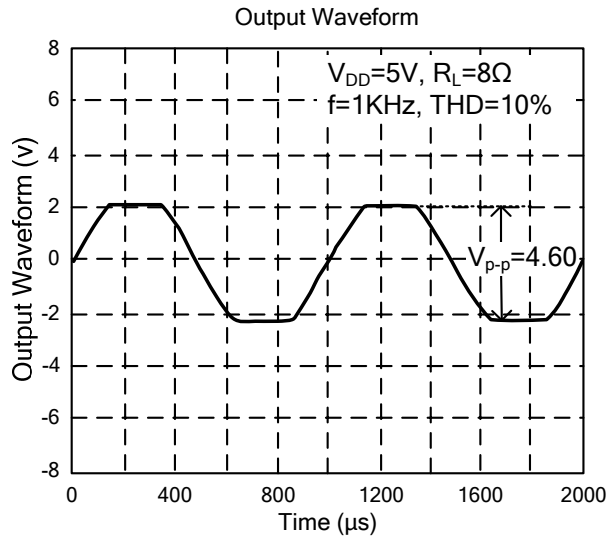
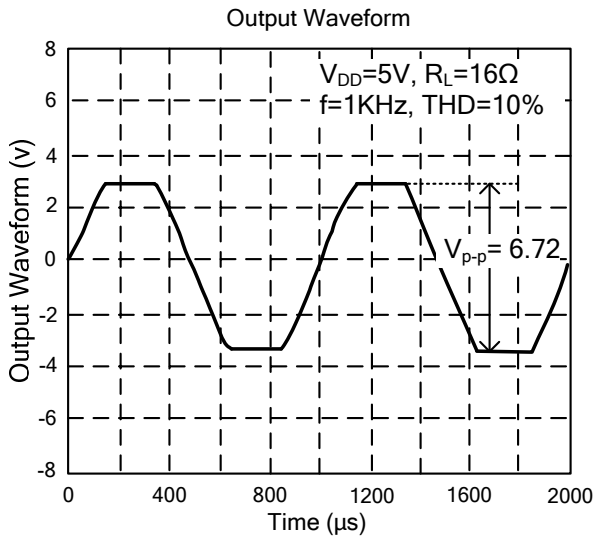
■ BLOCK DIAGRAM



■ TYPICAL APPLICATION CIRCUIT



■ TYPICAL CHARACTERISTICS



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