



New Product Announcement

PAM8019E

4W Stereo Class-D Audio Amplifier with Headphone Driver and Non-Clip Power Limit Provides a Compact High-Quality Audio Solution

The PAM8019E is a 4W stereo bridged-tied (BTL) speaker Class-D audio-power amplifier, with a stereo Class-AB headphone amplifier. Its advanced 62-step DC volume control minimizes external components.

The device allows simple and accurate volume control over the gain range of +20dB (Volume=0V) to -60dB (Volume= V_{DD}).

Integrated spread spectrum modulation (SSM) helps suppress EMI, which enables the use of inexpensive ferrite bead filters. The device's integrated non-clip power limit (NCPL) technology automatically limits output voltage with programmable power limit, improving the sound quality and helping to protect the speakers.

The PAM8019E supports speaker open and short detection during start-up to protect the whole audio system before normal operation. Additional protections include undervoltage protection, DC-input protection, short-circuit protection on all audio outputs, and thermal shutdown of the entire system.

The PAM8019E is designed to be pop-free for Class-D amplifiers and headphone drivers under all operating conditions.

The device is available in the thermally efficient and space-saving U-QFN3030-20 and U-QFN4040-20 packages.



The DIODES Advantage

The PAM8019E provides a small footprint, high-quality audio solution for consumer and portable stereo 4W applications.

- Extremely Low THD+N (0.03%) with Only 40uV White Noise At Max Gain**
 Delivers exceptional audio fidelity in portable applications
- 90% Efficiency at Stereo 3W Driving 4Ω Speakers**
 Extends operating time while minimizing heat in portable equipment
- NCPL, Speaker Open and Short Detection During Startup With Overcurrent, Overtemperature, and DC-Input Protection Features with Auto Recovery**
 Provides greater speaker protection while minimizing distortion
- Spread Spectrum Modulation and Active-Edge-Rate Control**
 Improves EMI performance with simple bead and cap
- Small-Footprint, High-Power Density QFN4040-20 and QFN3030-20 Packages**
 Provides a smaller footprint, ideal for portable applications

Applications

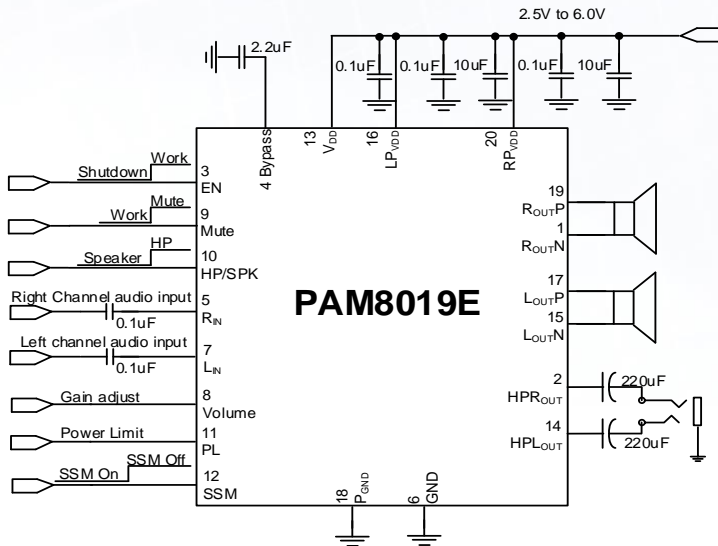
- LCD monitors and projectors
- All-in-one computers
- Portable/active speakers
- Bone conduction headphones
- DVD players
- TVs

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Typical Application



Stereo Audio Amplifier Portfolio

Part Number	Description	V_{IN}	Output Type	Power Limit	Volume/Gain	Efficiency	THD+N	Noise	Package
		V				%	%	μV	
PAM8019E	Stereo 4W Class-D with Headphone Amplifier	2.5 to 6.0	BTL	Yes	62-Step DC	92	0.029	40	U-QFN4040-20 U-QFN3030-20
PAM8406	Stereo 5W Class-D/-AB (Switchable) Amplifier	2.5 to 5.5	BTL	No	Fixed	90	0.11	100	SO-16

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
PAM8019EFS-7	Standard	U-QFN3030-20	MSL1	1,500	7" Tape & Reel
PAM8019EFH-13	Standard	U-QFN4040-20	MSL1	3,000	13" Tape & Reel