

3W Stereo Class-D Audio Amplifier with Headphone Driver

Features

- Supply voltage range: 3.0 V to 5.8 V
- Max. 2.5W AGC non-clip function
- <12mA static operation current
- <1uA shutdown current
- 64 steps DC volume control from -60dB to +20dB
- High Efficiency >87% into 4Ω, and >92% into 8Ω loudspeaker
- Over current, under voltage, and over temperature, fully protection
- Loudspeaker output power @ 10% THD+N
 - 1.7W/CH into 8Ω loudspeaker
 - 3W/CH into 4Ω loudspeaker
- Headphone output power @ 1% THD+N
 - 80mW/CH into 32Ω headphone

Applications

- Monitor audio
- Portable multimedia devices
- Mobile phone

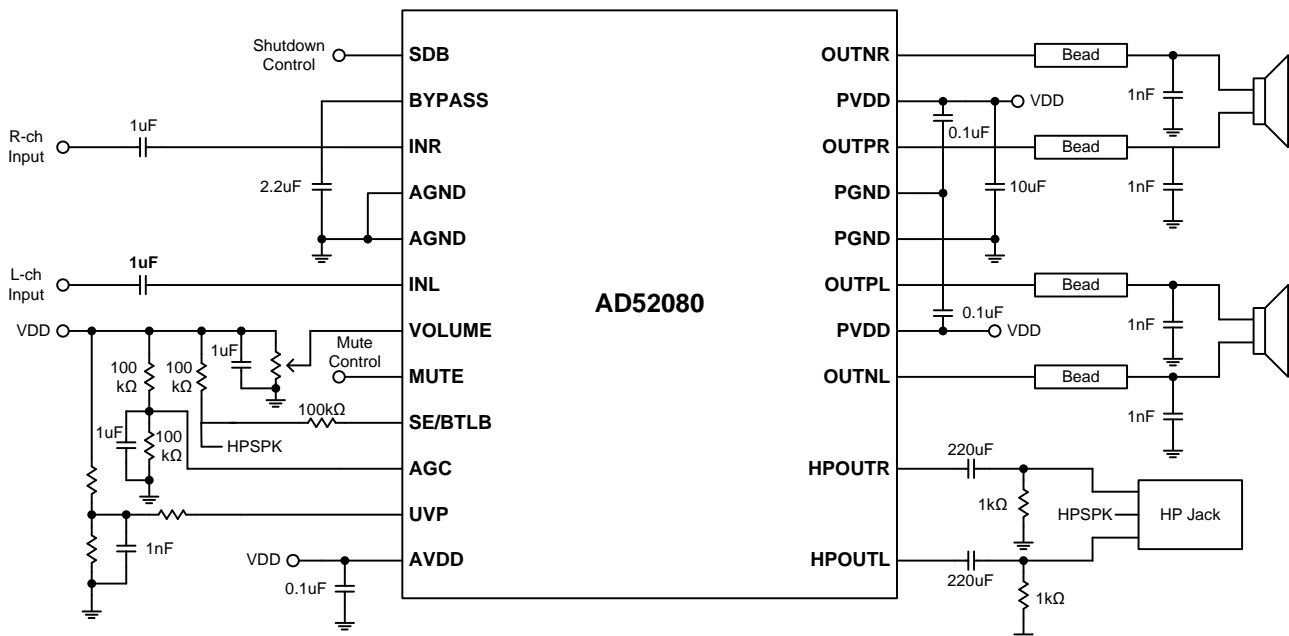
Description

The AD52080 is a stereo, filter-less Class-D audio amplifier with a Class-AB headphone driver also. Operating with 3.0V~5.8V wide power supply range, it delivers 3W/CH power into 4Ω loudspeaker within 10% THD+N or 80mW/CH power into 32Ω headphone within 1% THD+N

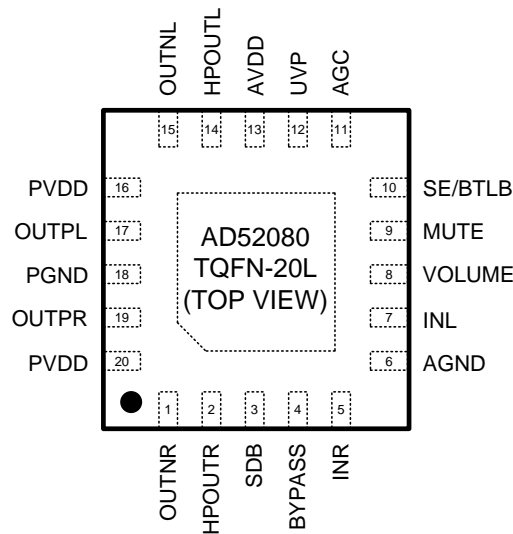
The AD52080 has not only a 64-step DC volume controller, also with a 2.5W power limiter, which implement with an automatic gain controller (AGC) internally.

The AD52080 is a stereo audio amplifier with high efficiency, which leads to longer battery life, less heat sink, smaller board size, lower system cost, and suitable for the notebook and portable multimedia devices application.

Typical Application Circuit



Pin Assignments



Pin Description

PIN NAME	QFN-20L	DESCRIPTION
OUTNR	1	Right channel negative output.
HPOUTR	2	Right channel headphone output.
SDB	3	Shut-down control, 0=shutdown, internal pull low, 1.5M ohm.
BYPASS	4	Bias voltage for power amplifiers.
INR	5	Input of right channel power amplifier.
AGND	6	Analog circuit's ground.
INL	7	Input of left channel power amplifier.
VOLUME	8	Internal gain setting input.
MUTE	9	Mute control, high active, internal pull low, 1.3M ohm.
SE/BTLB	10	Output mode control, 1=SE mode, 0=BTL mode, internal pull low, 2M ohm.
AGC	11	Maximum power output setting.
UVP	12	Under voltage protection unit.
AVDD	13	Power supply.
HPOUTL	14	Left channel headphone output.
OUTNL	15	Left channel negative output.
PVDD	16	Power supply.
OUTPL	17	Left channel positive output.
PGND	18	Power amplifier's ground.
OUTPR	19	Right channel positive output.
PVDD	20	Power supply.