

2.5W/CH@5V Power Limited Stereo Filter-less Class-D Audio Amplifier with Headphone Driver

Features

- Supply voltage range: 3.0 V to 5.5 V
- 2.5W power limit function
- 10mA static operation current
- <1uA shutdown current
- 64 step DC volume control from -60dB to +24dB
- Overload and thermal protection
- Loudspeaker Output power @ 1% THD+N
 - 1.4W/CH into 8Ω loudspeaker
 - 2.45W/CH into 4Ω loudspeaker
- Headphone Output power @ 1% THD+N
 - 65mW/CH into 32Ω loudspeaker

Applications

- Monitor audio
- Portable multimedia devices
- Mobile phone

Description

The AD52656 is a stereo, filter-less class-D audio amplifier with 2.5W power limit and class-AB headphone driver. Operating with 5.0V power supply, it delivers 2.45W/CH power into 4Ω loudspeaker within 1% THD+N or 65mW/CH power into 32Ω headphone within 1% THD+N

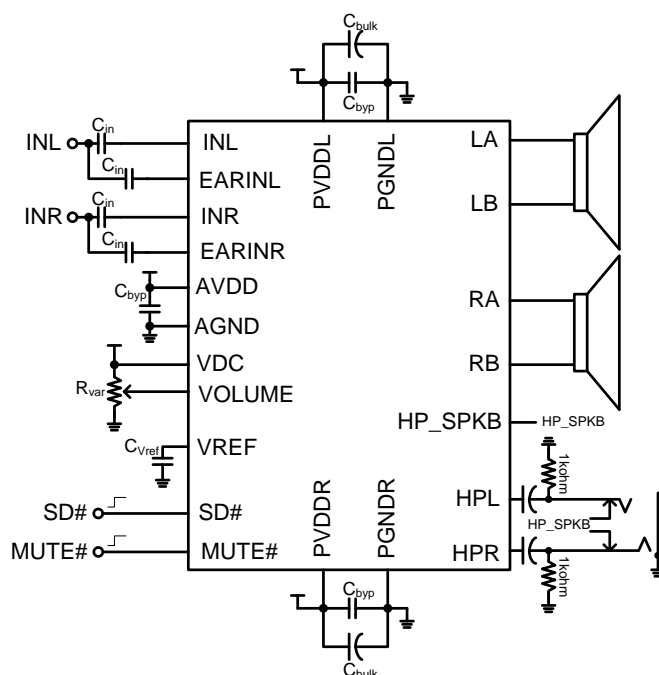
The AD52656 has not only a 64-step DC volume controller, but also a 2.5W power limiter, which implement with an automatic gain controller (AGC).

The AD52656 is packaged as SSOP-24(150mil) 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.

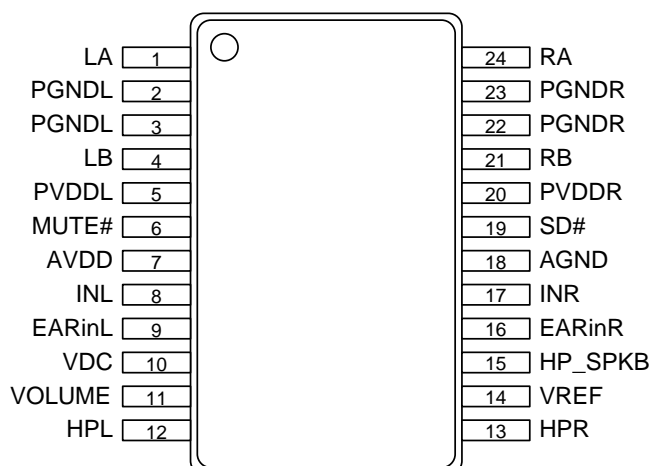
Ordering Information

Product ID	Package	Packing	Comments
AD52656-ST24NAT	SSOP-24L 150mil	56 Units / Tube 100 Tubes / Small BOX	Green
AD52656-ST24NAR	SSOP-24L 150mil	3K Units/ Reel	Green

Typical Application Circuit



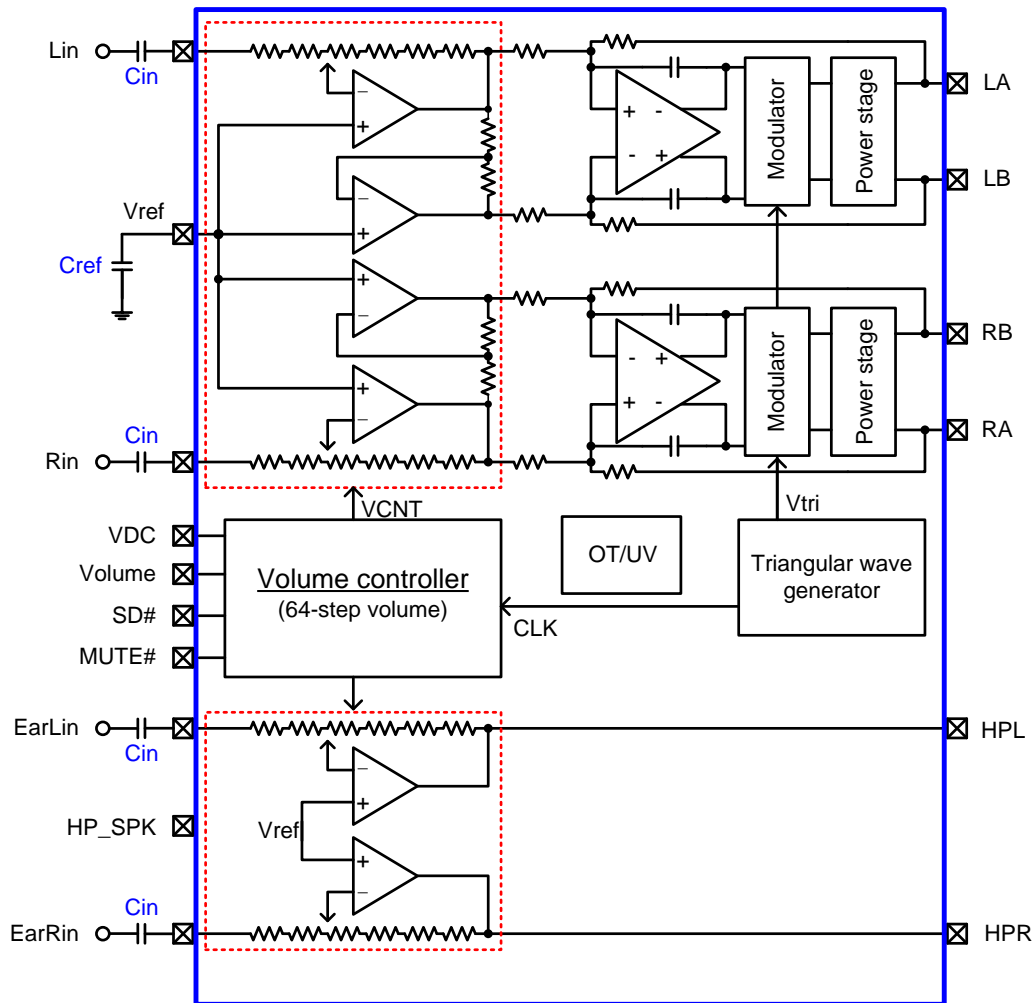
Pin Assignments



Pin Description

NAME	TYP	DESCRIPTION	CHARACTERISTIC	
1	LA	O	Speaker driver_Left (+)	
2	PGNDL	G	Power ground_Left	
3	PGNDL	G	Power ground_Left	
4	LB	O	Speaker driver_Left (-)	
5	PVDDL	P	Power supply_Left	
6	MUTE#	I	Mute (low active)	Internal pull-up
7	AVDD	P	Analog power supply	
8	INL	I	Single-ended audio input_Left for SPK	
9	EARinL	I	Single-ended audio input_Left for HP	
10	VDC	I	Full scale level for gain control section	Internal pull-up
11	VOLUME	I	Volume level setting by DC voltage	Internal pull-up
12	HPL	O	Headphone driver_Left	
13	HPR	O	Headphone driver_Right	
14	VREF	I	AVDD/2 reference voltage	
15	HP_SPKB	I.	HP or SPK mode selection (1:HP;0:SPK)	Internal pull-down
16	EARinR	I	Single-ended audio input_Right for HP	
17	INR	I	Single-ended audio input_Right for SPK	
18	AGND	G	Analog power ground	
19	SD#	I	Shutdown (low active)	Internal pull-up
20	PVDDR	P	Power supply_Right	
21	RB	O	Speaker driver_Right (-)	
22	PGNDR	G	Power ground_Right	
23	PGNDR	G	Power ground_Right	
24	RA	O	Speaker driver_Right (+)	

Functional Block Diagram



Available Package

Package Type	Device No.	θ_{ja} (°C/W)	θ_{jc} (°C/W)
SSOP-24	AD52656	90	17

Note 1: θ_{ja} is measured on a room temperature ($T_A=25^\circ\text{C}$), natural convection environment test board, which is constructed with a thermally efficient, 2-layers PCB. The measurement is tested using the JEDEC51-3 thermal measurement standard.

Note 2: θ_{jc} represents the heat resistance for the heat flow between the chip and the package's top surface.

Marking Information

AD52656

Line 1 : LOGO

Line 2 : Product no.

Line 3 : Tracking Code

Line 4 : Date Code

