

2.1-Channel Digital Audio Amplifier with Headphone Driver

Features

- 16/18/20/24-bit input with I²S, Left-alignment and Right-alignment data format
- PSNR & DR(A-weighting)
Loudspeaker: 93dB (PSNR), 98dB (DR)
Headphone: 87dB (PSNR), 91dB (DR)
- Multiple sampling frequencies (Fs)
32kHz / 44.1kHz / 48kHz and
64kHz / 88.2kHz / 96kHz
- System clock = 64x,128x,192x,256x,384x,
512x, 576x, 768x, 1024x Fs
64x~1024x Fs for 32kHz / 44.1kHz / 48kHz
64x~512x Fs for 64kHz / 88.2kHz / 96kHz
- Supply voltage
3.0~12V for loudspeaker driver
3.0~3.3V for others
- Loudspeaker output power (@10% THD+N)
2×8.7W(Full,8Ω)+16.7W(Full, 4Ω) for 2.1-channel
2×4.3W(Half,4Ω)+16.7W(Full, 4Ω) for 2.1-channel
2×8.7W(Full,8Ω) for stereo
2×4.3W(Half,4Ω) for stereo
2×16.7W(Full, 4Ω) for stereo
- Headphone power
34mW into 32Ω@1kHz and 1% THD+N
65mW into 16Ω@1kHz and 1% THD+N
110mW into 8Ω@1kHz and 1% THD+N
200mW into 4Ω@1kHz and 1% THD+N
- Sound processing including :
Bass (+18dB~-12dB, 3dB frequency is 250Hz),
Treble (+18dB~-12dB, 3dB frequency is 7kHz),
5 bands parametric EQ,
Volume control (+24dB~-103dB, 1dB/step) and

Dynamic range control

- Anti-pop design
- Over-temperature protection
- Under-voltage shutdown
- Short-circuit protection
- I²C control interface

Applications

- CD and DVD
- TV audio
- Car audio
- Boom-box
- MP3 docking systems
- Portable / Handheld
- Powered speaker
- Wireless audio
- USB speaker

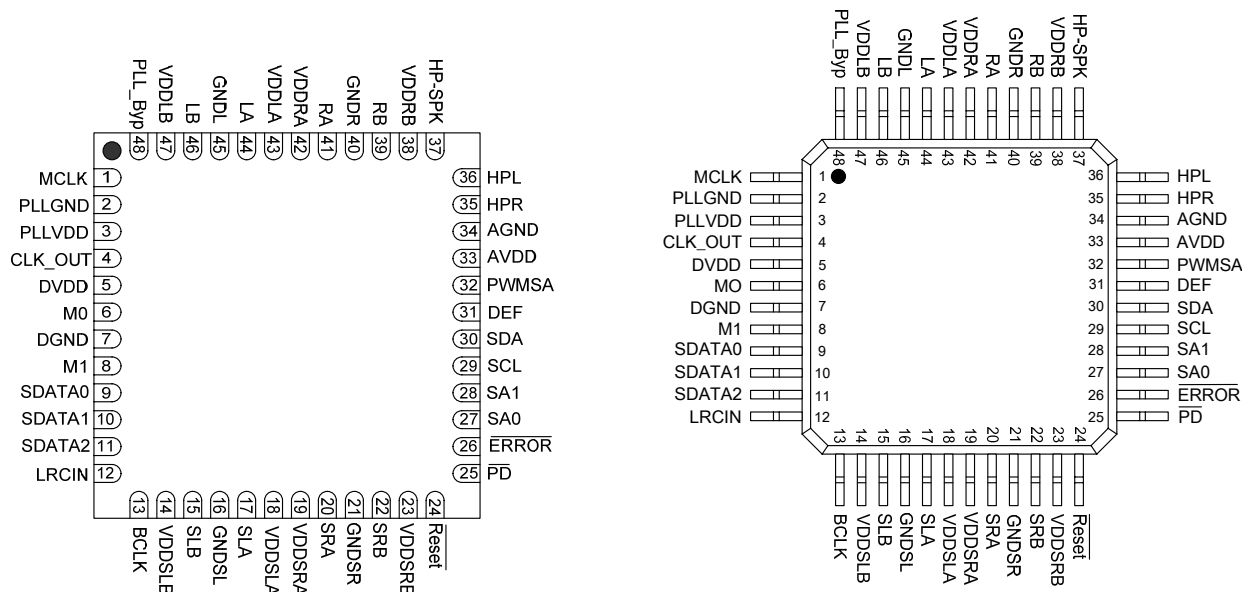
Description

This is a 2.1-channel fully digital audio amplifier with output power which can deliver up to 2×8.7W to 8 Ω load for L,R channel and 16.7W to 4 Ω load for sub-woofer channel simultaneously with 12V supply voltage. Using I²C digital control interface, AD8356A provides sound processing includes Volume, Bass, Treble, EQ, Mixing and Dynamic Range Control (DRC). Users can use one AD8356A for stereo or 2.1-channel, two for 5.1-channel and three for 7.1-channel, respectively.

ORDERING INFORMATION

Product Number	Package	Comments
AD8356A-KG	7x7 48L QFN	Pb-free
AD8356A-LEG	7x7 48L E-LQFP	Pb-free

Pin Assignment



Pin Description

PIN	NAME	TYPE	DESCRIPTION	CHARACTERISTICS
1	MCLK	I	Master clock input	Schmitt trigger TTL input buffer
2	PLLGND	P	Ground for PLL	
3	PLLVDD	P	Supply for PLL	(Note1)
4	CLK_OUT	O	PLL output	TTL output buffer
5	DVDD	P	Digital Power	(Note1)
6	M0	I	Mode selection 0	Schmitt trigger TTL input buffer
7	DGND	P	Digital Ground	
8	M1	I	Mode selection 1	Schmitt trigger TTL input buffer
9	SDATA0	I	Serial audio data input 0	Schmitt trigger TTL input buffer
10	SDATA1	I	Serial audio data input 1	Schmitt trigger TTL input buffer
11	SDATA2	I	Serial audio data input 2	Schmitt trigger TTL input buffer
12	LRCIN	I	Left/Right clock input (Fs)	Schmitt trigger TTL input buffer
13	BCLK	I	Bit clock input (64Fs)	Schmitt trigger TTL input buffer
14	VDDSLB	P	Supply for subwoofer-left channel B	(Note2)
15	SLB	O	Subwoofer-left channel output (-)	
16	GNDSL	P	Ground for subwoofer-left channel	
17	SLA	O	Subwoofer-left channel output (+)	
18	VDDSLA	P	Supply for subwoofer-left channel A	(Note2)
19	VDDSRA	P	Supply for subwoofer-right channel A	(Note2)