

Stereo/Mono Digital Audio Amplifier with Headphone Driver and SubWoofer Line-Out

Features

- 16/18/20/24-bit input with I²S, Left-alignment and Right-alignment data format
- PSNR & DR(A-weighting)
Loudspeaker: 92dB (PSNR), 89dB (DR) @24V
Headphone: 86dB (PSNR), 86dB (DR)
- Multiple sampling frequencies (Fs)
32kHz / 44.1kHz / 48kHz and
64kHz / 88.2kHz / 96kHz
128kHz/176.4kHz/192kHz
- 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
64x~256x Fs for 128kHz/176.4kHz/192kHz
- Supply voltage
12V~24V for loudspeaker driver
3.0~3.3V for others
- Loudspeaker output power for 24V
2x28W into 8Ω@1% THD+N for stereo
2x35W into 8Ω@10% THD+N for stereo
1x55W into 4Ω@1% THD+N for mono
1x70W into 4Ω@10% THD+N for mono
- Headphone power
40mW into 32Ω@1kHz and 1% THD+N
80mW into 16Ω@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
- Subwoofer line-out support

Applications

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

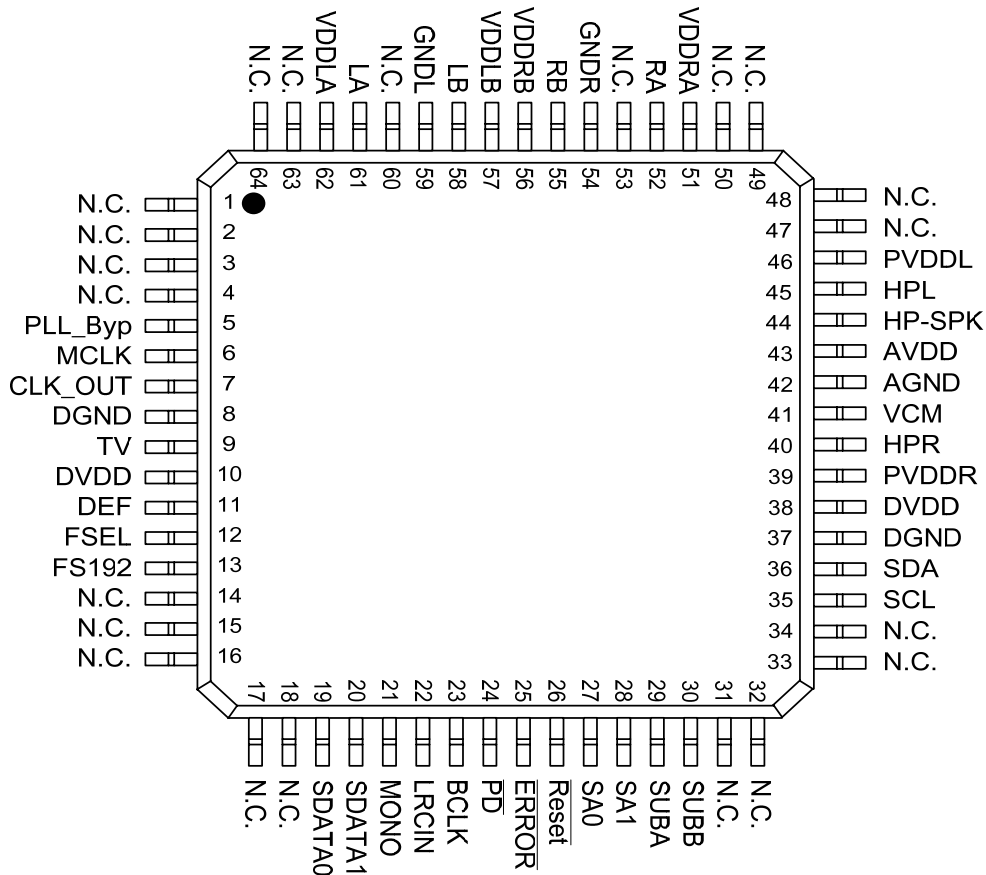
Description

This is a stereo/mono fully digital audio amplifier with output power which can drive 8Ω/4Ω load with up to 24 V voltage supply. Using I²C digital control interface, AD8258A provides sound processing includes Volume, Bass, Treble, EQ, Mixing and Dynamic Range Control (DRC). Protection circuits are provided to protect AD8258A damage while connection error. It is possible to compose of 2.1 channels with two pieces of AD8258A and 5.1 channels with four pieces.

ORDERING INFORMATION

Product Number	Package	Comments
AD8258A	10x10 64L E-LQFP	Pb-free

Pin Assignment



Pin Description

PIN	NAME	TYPE	DESCRIPTION	CHARACTERISTICS
1	N.C.			
2	N.C.			
3	N.C.			
4	N.C.			
5	PLL_Byp	I		Schmitt trigger TTL input buffer
6	MCLK	I	Master clock input	Schmitt trigger TTL input buffer
7	CLK_OUT	O	Clock output from PLL	TTL output buffer
8	DGND	P	Digital Ground	
9	TV	I	1: hardware control, 0:I2C control	Schmitt trigger TTL input buffer
10	DVDD	P	Digital Power	
11	DEF	I	Default volume setting	Schmitt trigger TTL input buffer
12	FSEL	I	0: 48kHz, 1:96kHz	Schmitt trigger TTL input buffer

13	FS192	I	192k sampling rate selection	Schmitt trigger TTL input buffer
14	N.C.			
15	N.C.			
16	N.C.			
17	N.C.			
18	N.C.			
19	SDATA0	I	Serial audio data input 0	Schmitt trigger TTL input buffer
20	SDATA1	I	Serial audio data input 1	Schmitt trigger TTL input buffer
21	MONO	I	MONO mode enable: high active	Schmitt trigger TTL input buffer
22	LRCIN	I	Left/Right clock input (Fs)	Schmitt trigger TTL input buffer
23	BCLK	I	Bit clock input (64Fs)	Schmitt trigger TTL input buffer
24	$\overline{\text{PD}}$	I	Power down, low active	Schmitt trigger TTL input buffer
25	$\overline{\text{ERROR}}$	O	Error status	Open-drain output
26	$\overline{\text{RESET}}$	I	Reset, low active	Schmitt trigger TTL input buffer
27	SA0	I	I2C select address 0	Schmitt trigger TTL input buffer
28	SA1	I	I2C select address 1	Schmitt trigger TTL input buffer
29	SUBA	O	Subwoofer output + / half-bridge output	TTL output buffer
30	SUBB	O	Subwoofer output -	TTL output buffer
31	N.C.			
32	N.C.			
33	N.C.			
34	N.C.			
35	SCL	I	I2C serial clock input	Schmitt trigger TTL input buffer
36	SDA	I/O	I2C bi-directional serial data	Schmitt trigger TTL input buffer
37	DGND	P	Digital Ground	
38	DVDD	P	Digital Power	
39	PVDDR	P	Headphone Right channel supply	
40	HPR	O	Headphone R channel output	
41	VCM	O	Headphone Common-Mode voltage	
42	AGND	P	Analog ground	
43	AVDD	P	Analog supply	
44	HP_SPK	I	Selection between Headphone and Speaker 1: Headphone 0:Speaker	
45	HPL	O	Headphone L channel output	
46	PVDDL	P	Headphone Left channel supply	
47	N.C.			
48	N.C.			