
2x20W Stereo Digital Audio Amplifier With 20 Bands EQ Functions

Features

- 16/18/20/24-bits input with I²S, Left-alignment and Right-alignment data format
- PSNR & DR(A-weighting)
Loudspeaker: 99dB (PSNR), 104dB (DR) @24V
- Multiple sampling frequencies (Fs)
32kHz / 44.1kHz / 48kHz and
64kHz / 88.2kHz / 96kHz and
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
3.3V for digital circuit
10V~26V for loudspeaker driver
- Loudspeaker output power for at 24V
10W x 2CH into 8Ω @0.17% THD+N for stereo
20W x 2CH into 8Ω @0.26% THD+N for stereo
- Sound processing including :
20 bands parametric speaker EQ
Volume control (+24dB~-103dB, 0.125dB/step),
Dynamic range control (DRC)
Dual band dynamic range control
Power clipping
3D surround sound
Channel mixing
Noise gate with hysteresis window
Bass/Treble tone control
DC-blocking high-pass filter
- Anti-pop design
- Short circuit and over-temperature protection
- I²C control interface with selectable device address
- Support hardware and software reset
- Internal PLL

- LV Under-voltage shutdown and HV Under-voltage detection
- Power saving mode

Applications

- TV audio
- Boom-box, CD and DVD receiver, docking system
- Powered speaker
- Wireless audio

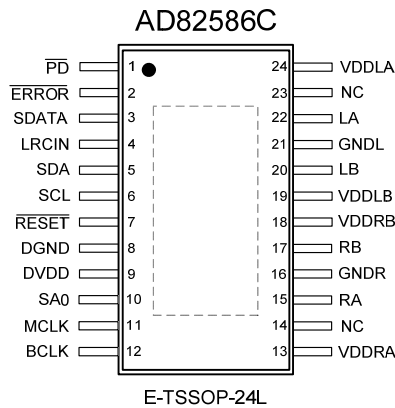
Description

AD82586C is a digital audio amplifier capable of driving a pair of 8Ω, 20W operating at 24V supply without external heat-sink or fan requirement with play music.

AD82586C can provide advanced audio processing capabilities, such as volume control, 20 bands speaker EQ, audio mixing, 3D surround and Dynamic Range Control (DRC). These functions are fully programmable via a simple I²C control interface.

Robust protection circuits are provided to protect AD82586C from damage due to accidental erroneous operating condition. AD82586C is more tolerant to noise and PVT (Process, Voltage, and Temperature) variation than the analog Class-AB or Class-D audio amplifier counterpart implemented by analog circuit design. AD82586C is pop free during instantaneous power switch because of its built-in, robust anti-pop circuit.

Pin Assignment



Pin Description

Pin	NAME	TYPE	DESCRIPTION	CHARACTERISTICS
1	\overline{PD}	I	Power down, low active	Schmitt trigger TTL input buffer
2	\overline{ERROR}	O	Error status, low active	Open-drain output
3	SDATA	I	Serial audio data input	Schmitt trigger TTL input buffer
4	LRCIN	I	Left/Right clock input (Fs)	Schmitt trigger TTL input buffer
5	SDA	I/O	I ² C bi-directional serial data	Schmitt trigger TTL input buffer
6	SCL	I	I ² C serial clock input	Schmitt trigger TTL input buffer
7	\overline{RESET}	I	Reset, low active	Schmitt trigger TTL input buffer
8	DGND	P	Digital Ground	
9	DVDD	P	Digital Power	
10	SA0	I	I ² C select address 0	Schmitt trigger TTL input buffer
11	MCLK	I	Master clock input	Schmitt trigger TTL input buffer
12	BCLK	I	Bit clock input (64Fs)	Schmitt trigger TTL input buffer
13	VDDRA	P	Right channel supply A	
14	N.C.	NC		
15	RA	O	Right channel output A	
16	GNDR	P	Right channel ground	
17	RB	O	Right channel output B	
18	VDDRB	P	Right channel supply B	
19	VDDL B	P	Left channel supply B	
20	LB	O	Left channel output B	
21	GN DL	P	Left channel ground	
22	LA	O	Left channel output A	
23	N.C.	NC		
24	VDDL	P	Left channel supply A	

