

2x20W Stereo / 1x40W Mono Digital Audio Amplifier With 24 Bands EQ Functions

Features

- 16/18/20/24-bits input with I²S, Left-alignment and Right-alignment data format
- PSNR & DR (A-weighting)Loudspeaker: 102dB (PSNR), 108dB (DR) @24V
- Multiple sampling frequencies (Fs) 32kHz / 44.1kHz / 48kHz and 64kHz / 88.2kHz / 96kHz and 128kHz / 176.4kHz / 192kHz
- I²C control interface
- Channel mixing
- Volume control (+12dB ~ -103dB, 0.125dB/step)
- Power clipping function
- DRC and DTC function
- 24 bands parametric speaker EQ
- Bass/Treble tone control
- DRC and post scale boost
- Check-sum coefficient protection
- Noise gate function
- Pop noise less muting (Quick Mute/Quick Start)
- Sleep function
- X3 over sampling for 32kHz FS
- AM interference frequency switching
- Level meter
- Post-scale and DRC offset volume support
- Over current protection function (OCP)
- Over temperature protection function (OTP)
- Under voltage lock out (UVLO)
- Over voltage protection function (OVP)
- DC detection function (DCDET)
- Clock detection function (CKDET)
- Lead-free E-LQFP-48L

Description

XA8323 is an integrated audio system solution, embedding digital audio processing power stage amplifier.

XA8323 has a programmable slew-rate controlled output buffer, which drives one (mono) or two (stereo) speakers directly. In addition, it is insusceptible to supply voltage fluctuation due to the close-loop design.

XA8323 can provide advanced audio processing capabilities, such as volume control, 24 bands EQ, audio mixing and Dynamic Range Control (DRC). These functions are fully programmable via a simple I²C interface.

Robust protection circuits are provided to protect XA8323 from damage due to accidental erroneous operation. XA8323, being a digital circuit design, 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. Furthermore, XA8323 is pop free during instantaneous power switching because of its built-in, robust anti-pop circuit.

Applications

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

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Typical Application Diagram

Application circuit for stereo mode

