

20W Stereo Class-D Audio Amplifier with Power Limit And Dynamic Temperature Control

Features

- Single supply voltage
8 ~ 26V for loudspeaker driver
Built-in LDO output 3.3V for others
- Loudspeaker power from 24V supply
BTL Mode: 20W/CH into 8Ω @0.09% THD+N
PBTL Mode: 40W/CH into 4Ω @0.15% THD+N
- Loudspeaker power from 13V supply
BTL Mode: 10W/CH into 8Ω @10% THD+N
- 87% efficient Class-D operation eliminates need for heat sink
- Differential inputs
- Four selectable, fixed gain settings
- Internal oscillator
- Short-Circuit protection with auto recovery option
- Under-Voltage detection
- Over-Voltage protection
- Pop noise and click noise reduction
- Adjustable power limit function for speaker protection
- Output DC detection for speaker protection
- Filter-Free operation
- Over temperature protection with auto recovery
- Dynamic temperature control prevents chip from over heating

- Boom-Box
- Powered speaker
- Consumer Audio Equipment

Description

The XA9220 is a high efficiency stereo class-D audio amplifier with adjustable power limit function and dynamic temperature control. The loudspeaker driver operates from 8~26V supply voltage and analog circuit operates at 3.3V supply voltage. It can deliver 20W/CH output power into 8Ω loudspeaker within 0.09% THD+N and without external heat sink when playing music.

XA9220 provides parallel BTL (Mono) application, and it can deliver 40W into 4Ω loudspeaker within 0.15% THD+N. The adjustable power limit function allows user to set a voltage rail lower than half of 3.3V to limit the amount of current through the speaker.

Output DC detection prevents speaker damage from long-time current stress. The dynamic temperature control is a gain control system. As chip junction temperature higher than a warning level, the gain level will decrease until junction temperature lower than the warning level.

The output short circuit and over temperature protection include auto-recovery feature.

Applications

- TV audio

Simplified Application Circuit

