

## 2x20W Stereo Class-D Audio Amplifier with Power Limit

### Features

- Single supply voltage  
4.5V ~ 26V for loudspeaker driver  
Built-in LDO output 5V for others
- Loudspeaker power from 24V supply  
BTL Mode: 20W/CH into 8Ω @ <1% THD+N  
PBTL Mode: 40W/CH into 4Ω @ <10% THD+N
- Loudspeaker power from 12V supply  
BTL Mode: 10W/CH into 8Ω @ 10% THD+N
- 88% 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
- Superior EMC performance

### Applications

- TV audio
- Boom-Box
- Powered speaker
- Monitors
- Consumer Audio Equipment

### Description

The XA9221 is a high efficiency stereo class-D audio amplifier with adjustable power limit function. The loudspeaker driver operates from 4.5V~26V supply voltage and analog circuit operates at 5V supply voltage. It can deliver 20W/CH output power into 8Ω loudspeaker within 1% THD+N at 24V supply voltage and without external heat sink when playing music.

XA9221 provides parallel BTL (Mono) application, and it can deliver 40W into 4Ω loudspeaker at 24V supply voltage. The adjustable power limit function allows user to set a voltage rail lower than half of 5V to limit the amount of current through the speaker.

Output DC detection prevents speaker damage from long-time current stress. XA9221 provides superior EMC performance for filter-free application. The output short circuit and over temperature protection include auto-recovery feature.

### Simplified Application Circuit

