

MAX98357A I2S 3W Class D Amplifier Module

The MAX98357A I2S 3W Class D Amplifier Module is a high-efficiency, compact digital audio amplifier designed to simplify audio output in modern embedded systems. Built around the powerful MAX98357A audio DAC amplifier IC, this module integrates a digital-to-analog converter (DAC) with a Class D amplifier, enabling direct audio playback from I2S (Inter-IC Sound) digital audio signals without requiring an external DAC.

This module is ideal for developers working with microcontrollers and single-board computers that support I2S audio output, such as ESP32 development board, Raspberry Pi, and other embedded platforms. It eliminates the complexity of analog audio design by handling digital audio decoding and amplification in one compact solution.

With its ability to deliver up to 3W of output power into a 4Ω speaker, the MAX98357A module provides clear and powerful sound suitable for small to medium-sized audio projects. Its Class D architecture ensures high efficiency, low heat generation, and extended battery life, making it perfect for portable and battery-powered applications.

The module supports standard I2S formats and automatically handles clocking, making integration straightforward even for beginners. It also includes built-in features such as click-and-pop suppression, thermal protection, and short-circuit protection, ensuring reliable and safe operation.

Whether you're building a smart speaker, voice assistant, or audio playback device, the MAX98357A I2S amplifier module offers a clean, efficient, and easy-to-use solution for high-quality digital audio output.

Features:

- Integrated I2S DAC and Class D amplifier
- Delivers up to 3W output power into 4Ω speaker
- No need for external DAC or audio codec
- High efficiency Class D operation
- Supports standard I2S digital audio interface
- Automatic clock handling for easy integration
- Low EMI and reduced heat generation
- Built-in thermal and short-circuit protection

- Compact and lightweight module design
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Specifications:

- Chipset: MAX98357A
 - Input Type: I2S digital audio
 - Output Power: Up to 3W (4Ω load)
 - Supply Voltage: 2.5V to 5.5V
 - Efficiency: Up to 92%
 - Audio Resolution: Supports 16-bit, 24-bit I2S
 - Output Type: Mono (single speaker)
 - Protection Features: Thermal shutdown, overcurrent protection
 - Dimensions: Typically ~20mm x 15mm (varies by manufacturer)
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Applications:

- DIY audio players and MP3 systems
- Smart speakers and voice assistants
- IoT audio notification systems
- Raspberry Pi and ESP32 audio projects
- Portable and battery-powered audio devices
- Embedded digital audio systems
- Home automation sound alerts