



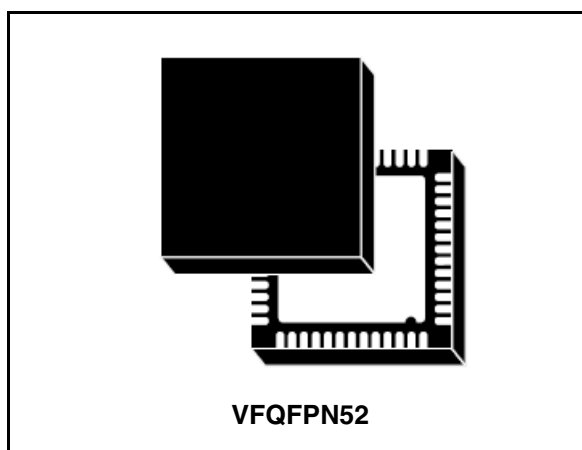
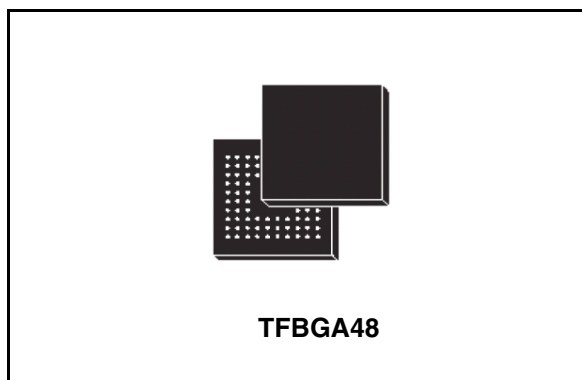
## STA529

2 x 100 mW class-D amplifier with analog or digital input  
2.0 multichannel digital audio processor with FFX

Data Brief

### Features

- Up to 96 dB dynamic range
- Sample rates from 8 kHz to 192 kHz
- FFX™ class-D driver
- 1.5 V to 1.95 V digital power supply
- 1.5 V to 1.95 V analog power supply
- 18-bit audio processing and class-D FFX™ modulator
- Digital volume control:
  - +36 dB to 105 dB in 0.5 dB steps
  - Software volume update
- Individual channel and master gain/attenuation
- Automatic invalid input detect mute
- 2-channel I<sup>2</sup>S input/output data interface
- Digitally controlled POP-free operation
- Input and output channel mapping
- 250 mΩ output CMOS R<sub>dson</sub>
- > 90% efficiency
- Stereo headphone plus mono speaker application:
  - 50 mW stereo into 32 Ω headphone
  - 100 mW stereo into 16 Ω headphone



### Order codes

| Part number | Package  | Packaging |
|-------------|----------|-----------|
| STA529B     | TFBGA48  | Tube      |
| STA529Q     | VFQFPN52 | Tube      |

# Introduction

The STA529 is a digital stereo class-D audio amplifier. It includes an audio DSP, a ST proprietary high-efficiency class-D driver and CMOS power output stage. It is intended for high-efficiency digital-to-power-audio conversion for portable applications. The STA529 also provides output capabilities for FFX™. In conjunction with a power device, the STA529 provides high-quality digital amplification.

The STA529 contains an on-chip volume/gain control.

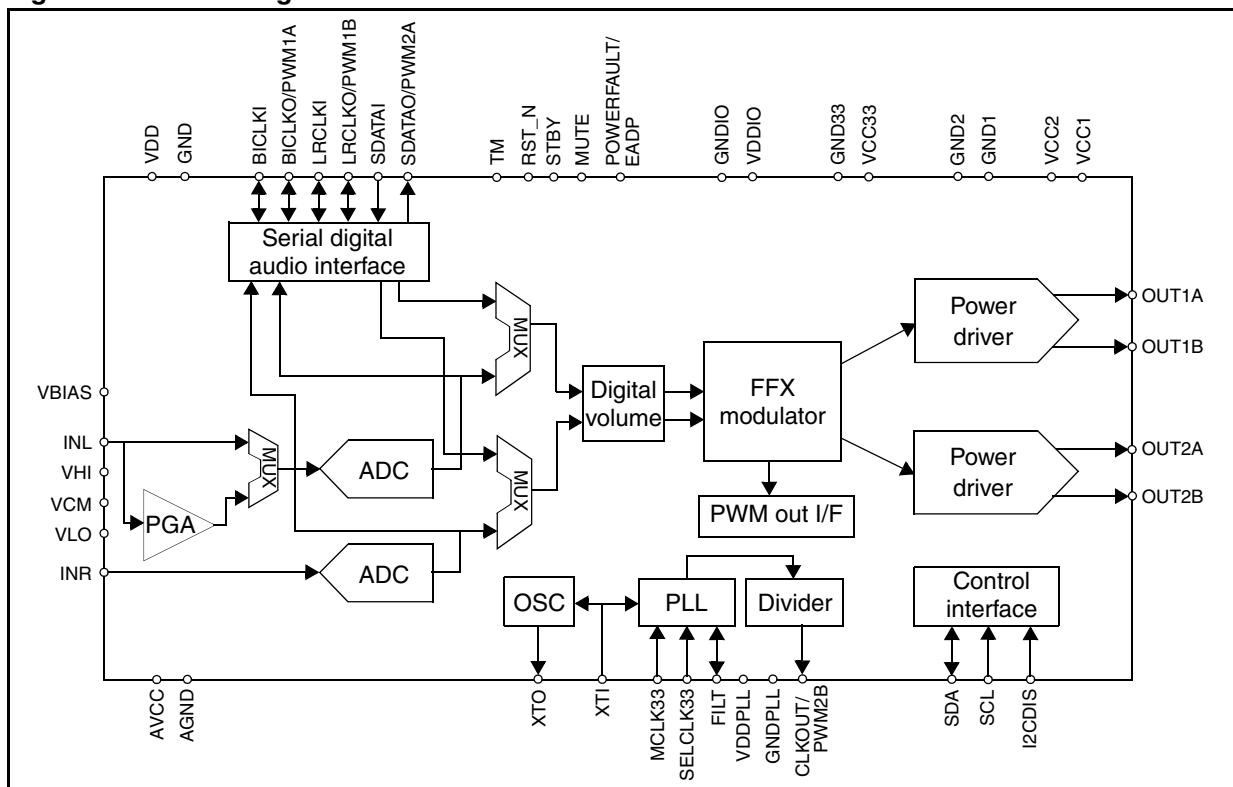
The PWM amplifier achieves greater than 90% efficiency for longer battery life for portable systems.

The innovative class-D modulation, allows the STA529 to work without external LC filters and without a heatsink.

The STA529 I2CDIS pin disables the audio DSP functions to provide a direct conversion of the input signal into output power (the I<sup>2</sup>C interface is disabled). This conversion is done without the microcontroller.

The STA529 is designed for low-power operation with extremely low-current consumption in standby mode. It is available in two packages: the TFBGA48 and the VFQFPN52. These are very thin packages (1.2 mm thick) intended for small portable applications.

**Figure 1. Block diagram**



## Revision history

Table 1. Document revision history

| Date        | Revision | Changes         |
|-------------|----------|-----------------|
| 18-Dec-2006 | 1        | Initial release |

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