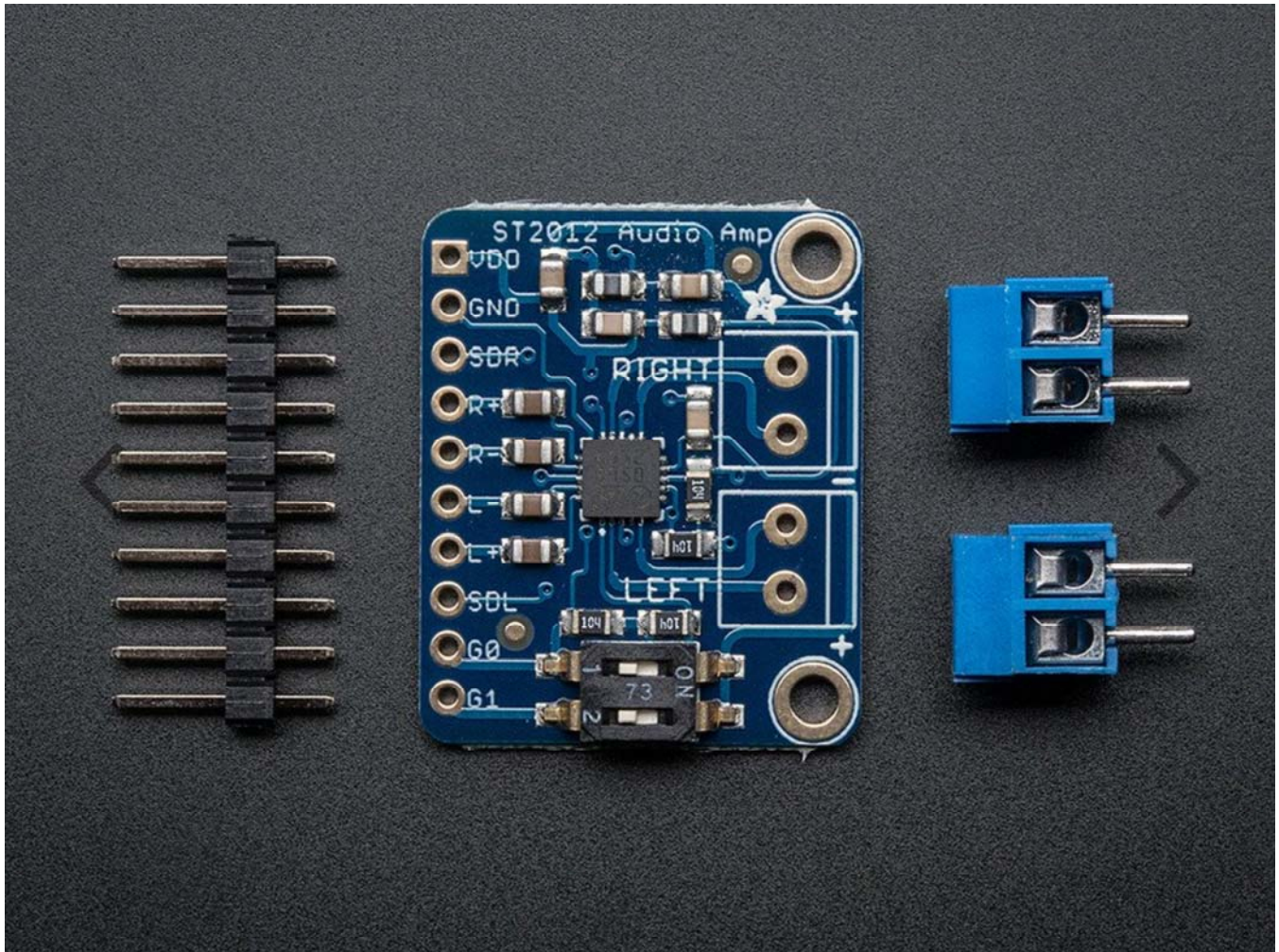


BOARDS / BREAKOUT BOARDS

# Stereo 2.8W Class D Audio Amplifier – TS2012

PRODUCT ID: 1552



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## DESCRIPTION

This incredibly small stereo amplifier is surprisingly powerful – able to deliver 2 x 2.8W channels into 4 ohm impedance speakers (@ 10% THD). Inside the miniature chip is a class D controller, able to run from 2.7V–5.5VDC. Since the amp is a class D, it's incredibly efficient (89% efficient when driving an 8Ω speaker at 1.5 Watt) – making it perfect for portable and battery-powered projects. It has built in thermal and over-current protection but we could barely tell it got hot. This board is a welcome upgrade to basic "LM386" amps!

The inputs of the amplifier go through 1.0uF capacitors, so they are fully 'differential' – if you don't have differential outputs, simply tie the R- and L- to ground. The outputs are "Bridge Tied" – that means they connect directly to the outputs, no connection to ground. The output is a ~300KHz square wave PWM that is then 'averaged out' by the speaker coil – the high frequencies are not heard. All the above means that you can't connect the output into another amplifier, it should drive the speakers directly.

Comes with a fully assembled and tested breakout board with 1.0uF input capacitors. We also include a dual mini DIP switch for setting the amplifier gain on the fly, 3.5mm screw-terminal blocks so you can easily attach/detach your speakers, and some header in case you want to plug it into a breadboard. You will be ready to rock in 15 minutes! Speakers are not included, use any 4 ohm or 8 ohm impedance speakers.

- Output Power: 2.8W at 4Ω, 10% THD, 1.7W at 8Ω, 10% THD, with 5V Supply
- PSRR: 70 dB typ @ 217 Hz with 6 dB gain
- Designed for use without an output filter, when wires are kept at under 2"-4" long
- Four pin-selectable gains: 6dB, 12dB, 18dB and 24dB. Select with the onboard switches or by setting the G0 and G1 breakout pins (see schematic for breakout board showing gain pin settings for details)
- Excellent click-and-pop suppression

- Thermal shutdown protection
  - Independent channel shutdown
  - Low current draw: 5mA quiescent and 2uA in shutdown mode
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