DESCRIPTION

This incredibly small stereo amplifier is surprisingly powerful - able to deliver 2 x 3.7W channels into 3 ohm impedance speakers. Inside the miniature chip is a class D controller, able to run from 2.7V-5.5VDC. Since the amp is a class D, its incredibly efficient (over 90% efficient when driving an 8Ω speaker at over a 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 360KHz 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 header to plug it into a breadboard, 3.5mm screw-terminal blocks so you can easily attach/detach your speakers, and a 2x4 header + jumper to change the amplifier gain on the fly.
You will be ready to rock in 15 minutes! **Speakers are not included, use any 3ohm or greater impedance speakers.**

- Output Power: 3.7W at 3Ω, 10% THD, 1.7W at 8Ω, 10% THD, with 5V Supply
- Passes EMI limit unfiltered with up to 12 inches (30 cm) of speaker cable
- High 83dB PSRR at 217Hz
- Spread-Spectrum Modulation and Active Emissions Limiting
- Five pin-selectable gains: 6dB, 9dB, 12dB, 15dB and 18dB. Select with a jumper or by setting the G and G’ breakout pins (see schematic for breakout board showing gain pin settings for details)
- Excellent click-and-pop suppression
- Thermal and short-circuit/over-current protection
- Low current draw: 2mA quiescent and 10uA in shutdown mode

**Note:** The terminal blocks included with your product may be blue or black.

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**TECHNICAL DETAILS**

Datasheet, schematic, and Fritzing library available in the product tutorial

Dimensions (without 0.1" header):

- Length:28.25mm/1.11in
- Width:24.15mm/0.95in
- Height:3.03mm/0.12in
- Weight:2.33g

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Music & sound add-on pack
Op Amp - Dual Rail-to-Rail - 2.7-6V power @ 80mA
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Large Surface Transducer with Wires - 4 Ohm 5 Watt
20W 4 Ohm Full Range Speaker
Breadboard-Friendly 3.5mm Stereo Headphone Jack
Mono Enclosed Speaker - 3W 4 Ohm
Stereo Enclosed Speaker Set - 3W 4 Ohm
Adafruit Audio FX Mini Sound Board - WAV/OGG VS1053 Codec + MicroSD Breakout

"To achieve great things, two things are needed: a plan and not quite enough time" - Leonard Bernstein