

## 10W Mono Class D amplifier for 2S battery operated portable devices



### Features

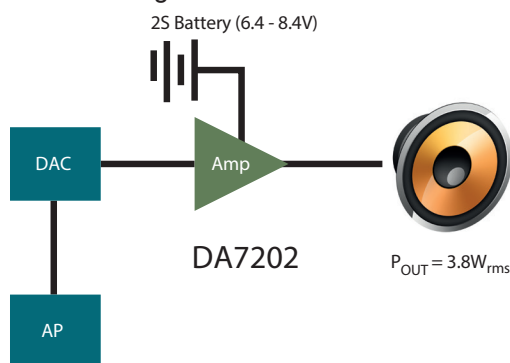
- 10W Mono Filterless Class D Speaker Driver
- Good PSRR and THD+N by using Analogue loop filter
- Differential Audio inputs
- Low EMI by using Spread Spectrum Modulation
- Short circuit and thermal overload protection with auto recovery
- 9 bump WLCSP package

### Functions

- $P_{rms}$  : 3.8W into 8Ω load @ 8.2V, 1% THD+N
- Efficiency: 90% @  $P_{out}=3.5W$  @ 8.2V, 8Ω
- SNR (A-weighted) 104dB
- THD+N: 90dB
- PSRR: 78dB
- Fixed 18db gain or adjustable with external resistors
- 4.5 – 9.0V Input battery supply

### Applications

- Ultrabooks
- Tablets
- Personal Navigation Devices
- Speaker Accessories
- Handheld Gaming



Audio systems diagram

### Description

DA7202 is a powerful, highly efficient, low EMI Class D speaker driver that can drive a maximum of 10W into 8Ω loads directly from a 2S lithium-ion battery pack.

DA7202 is a 9 bump WL-CSP standalone high performance switched mode mono Class-D audio amplifier targeted to power a variety of two cell portable applications such as Ultrabooks™ and tablets.

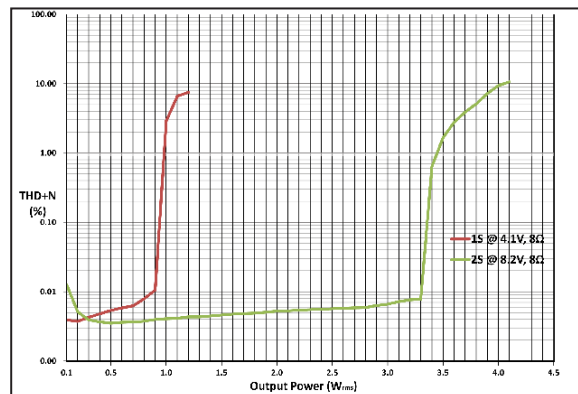
DA7202 is a fully-differential amplifier architecture that includes PWM modulator and a H-Bridged switched power output stage. The analogue outputs from the H-Bridged stage that delivers 3.8  $W_{rms}$  into 8Ω load @ 8.2V and making the speaker sound 'louder' for portable devices.

A spread-spectrum triangular wave is generated internally to drive the PWM modulator to allow high efficiency ~ 90% and low EMI performance. Robust short circuit and thermal overload protection prevent device damage during a fault condition.

The DA7202 can enable direct battery connection to the speaker where all the front end blocks are directly connected to a regulated voltage VLDO. DA7202 direct connection to a 2S battery pack enables a more powerful output drive and maintains a high Class D efficiency from the battery. The gain can be varied by using external resistors to reduce output signal level to the speaker or alternatively by the default fixed gain of 18dB.

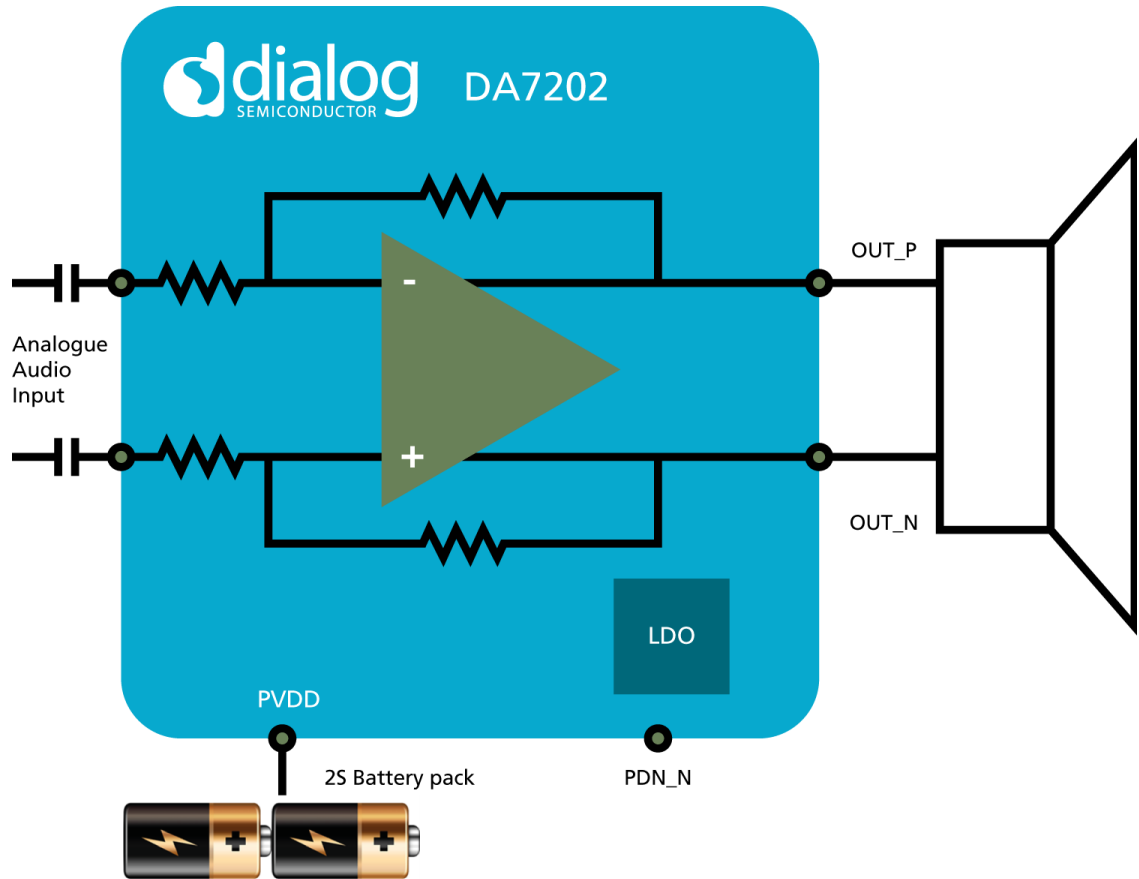
DA7202 includes pop/click suppression circuitry to suppress audible pops/clicks at the speaker output.

The DA7202 is available in 9 bump WLCSP package, 0.5mm pitch that enables low cost PCB technology which is ideal for portable applications that require small footprints.



THD+N vs Output Power for different battery configurations

## Block Diagram



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