

# Product Brief

## DA7201 3.1W Mono Filterless Class D Speaker Driver

### General Description

DA7201 is a powerful, high efficient, low EMI class D speaker driver that can drive 3.1W @ 5.5V into 4Ω loads suitable for a variety of low power, digital portable audio products.

DA7201 consists of an analogue loop filter, PWM modulator and a H-Bridged switched power output stage that delivers 3.1W into 4Ω load @ 5.5V making speaker sound 'louder'.

A spread-spectrum triangular wave is generated internally to drive the PWM modulator to allow high efficiency ~ 94% and low EMI performance.

The analogue loop filter integrated on chip improves power supply rejection and harmonic distortion for the H-bridge output stage. A fixed gain of 6db is available but a pair of external resistors can be used to reduce output signal level to the speaker output

The DA7201 can enable direct battery connection to the speaker and also has a low power consumption shutdown mode.

DA7201 includes pop/click suppression circuitry to reduce audible pops/clicks at the speaker output.

The DA7201 is available in 9 bump WLCSP package which is ideal for applications such as personal navigation devices, speaker accessories, mobile phones, portable media players and handheld gaming that require small footprints.



DA7201 is packaged in 9 bump WL-CSP

### Features

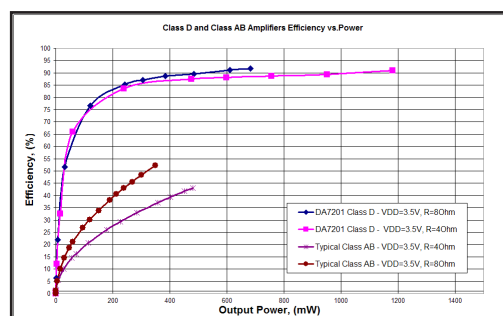
- 3.1W Mono Filterless Class D Speaker Driver
- Analogue loop filter for good PSRR and THD+N
- Differential Audio inputs
- Spread Spectrum Modulation for low EMI
- 9 bump WLCSP package

### Applications

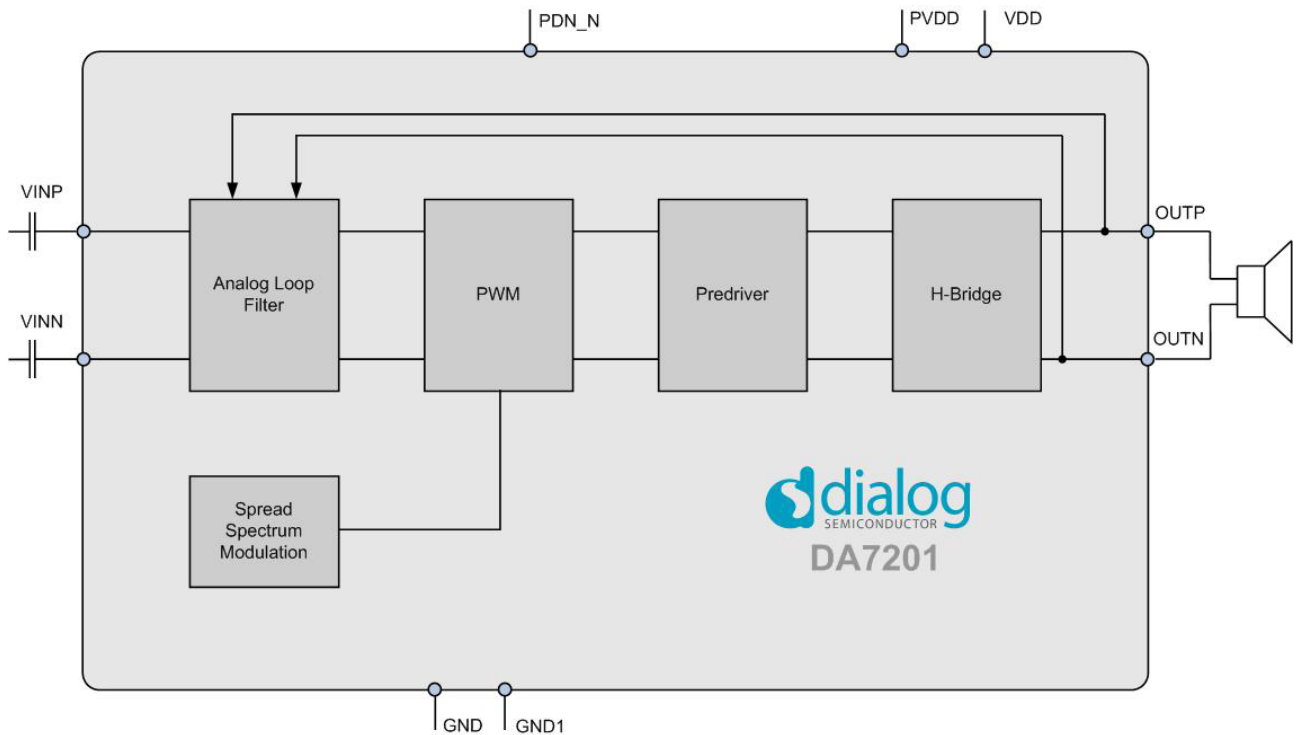
- Personal Navigation Devices
- Speaker Accessories
- Handsets
- Portable Media Players
- Handheld Gaming

### Functions

- 1.3W output into a 4Ω load @ 3.6V, 1% THD+N
- 3.1W output into a 4Ω load @ 5.5V, 1% THD+N
- Efficiency: 94% @ Pout=1.5W @ 5.0V, 8Ω
- SNR (A-weighted) 102dB,
- THD+N: 95dB @ 900mW, 3.6V, 4Ω
- PSRR: 95dB,
- Fixed 6db gain
- 2.8~5.5V Input Battery supply



## Over View



### Class Leading Driver Capability

- Max Pout = 3.1W in 4 @ 5.5V

### Performance Highlights

- Class AB parametric performance
- Analogue loop filter provides excellent PSRR 95db

### Easy of Design Use

- Complementary to Dialog APM products

### Board Area highlights

- Filterless audio driver eliminates LC external components
- Small 9 bump WLCSP package footprint

## Dialog Semiconductor worldwide offices

Germany - Headquarters  
Phone: +49 7021 805-0

The Netherlands  
Phone: +31 73 640 88 22

Korea  
Phone: +82 2 569 2301

Japan  
Phone: +81 3 3769 8123  
Phone: +81 3 5408 4330

China  
Phone: +852 2607 4271

United Kingdom  
Phone: +44 1793 757700

North America  
Phone: +1 408 727 3200

Singapore  
Phone: +65 64845419

This publication is issued to provide outline information only, which (unless agreed by Dialog Semiconductor in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or be regarded as a representation relating to products or services concerned. Dialog Semiconductor reserves the right to alter without notice the specification, design, price or conditions of supply of the product. Customer takes note that Dialog Semiconductor's products are not designed for use in devices or systems intended for supporting or monitoring life nor for surgical implants into the body. Customer shall notify the company of any such intended use so that Dialog Semiconductor may determine suitability. Customer agrees to indemnify Dialog Semiconductor for all damages that may be incurred due to use without the company's prior written permission of products in such applications. © Dialog Semiconductor 2011. All rights reserved.