

10 V Boosted Class-D Audio Amplifier with V/I Sense

Features

- Boost Converter
 - 10 V Output Voltage (Max. 12.5 V)
 - Undervoltage / Overvoltage Protection
 - Overcurrent Limit
 - Active Anti-windup Scheme for Loop Compensation
- 3-step Class-H Control by Digital Feed-Forward Processing
- Full Digital Class-D Audio Amplifier
 - 6.3 W at 8 Ω
 - 12 V 4.5 W at 8 Ω
 - 10 V Max TBD W at 6 Ω
- V/I Sensing for Speaker Protection Algorithm
- High Audio Performance – SNR 104 dB, THD+N 0.008%
- Digital Audio Input Interface
- Stereo Applications
 - I2C Address Selection Input
 - SDO Output High Impedance Control
- Soft Volume and Soft Mute, with -60 dB to +24 dB / 0.5 dB Gain Step
- Five Band 32-bit Parametric Equalizer for Speaker Sound Tuning
- Dynamic Range Compressor
- Overcurrent Protection
- Thermal Management / Shutdown Circuit
- Fault Diagnostics by I2C Interface
- System Clock Source Selection Control

- Input Clock Monitoring Circuit with Internal Oscillator
- Internal Fractional-N PLL
- Tone Generator
- Fine Volume (+3 dB to -3 dB / 0.125 dB) after DRC
- TDM Data Output
- Sample Rate Converter (excluded for V/I sensing)
- Brownout Protection / Battery Monitoring Stereo AUX Input to Output Bypass Switches and Control Pin

Applications

- Mobile Phones
- Tablets
- Wireless Mobile Speakers

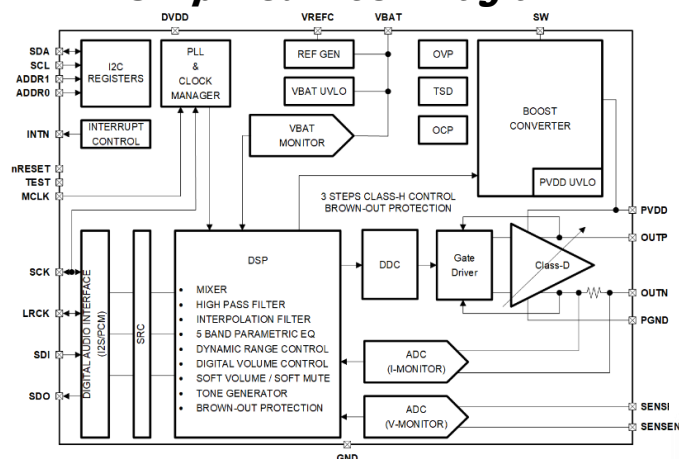
Description

This document contains detailed specifications of SMA1302 digital class-D audio amplifier with an integrated boost converter. From a single-cell Li-Ion battery power supply, the boost converter converts output voltage into full digital amplifier to produce stable large sound pressure levels. The SMA1302 is a high efficiency 10 V mono boosted class-D speaker amplifier with V/I Sense and 3-step Class-H.

Device Information

| Part | Package | Size |
|---------|---------------------------|----------------------|
| SMA1302 | 36-WLCSP 0.35 mm Pitch | 2.78 mm x 2.36 mm |

Simplified Block Diagram



*Technology by



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