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STEVAL-CCA012V1

3 W filter-free class-D audio amplifier demonstration board with 6-12 dB fixed gain select based on the TS2007

Data brief

Features

- Operating range from $V_{CC} = 2.4 \text{ V}$ to 5.5 V
- Dedicated standby mode active low for each channel
- Output power per channel: $1.4 \text{ W @ } 5 \text{ V}$ or $0.5 \text{ W @ } 3.0 \text{ V}$ into 8Ω with 1% THD+N max
- Output power per channel: $2.3 \text{ W @ } 5 \text{ V}$ or $0.75 \text{ W @ } 3.0 \text{ V}$ into 4Ω with 1% THD+N max
- Two fixed gain selects: 6 dB or 12 dB
- Low current consumption
- Efficiency: 88% (typ)
- Signal-to-noise ratio: 90 dB (typ)
- PSRR: 68 dB (typ) @ 217 Hz with 6 dB gain
- PWM base frequency: 280 kHz
- Low pop and click noise
- Thermal shutdown protection
- Output short-circuit protection
- RoHS compliant

Description

The STEVAL-CCA012V1 demonstration board is based on the TS2007FC audio power class-D amplifier, housed in a Flip-Chip package, which is capable of driving up to 1.4 W into an 8Ω load at 5 V . The device offers improved efficiency compared to typical class-AB audio amplifiers.

The TS2007FC allows switching between two different gains: 6 or 12 dB via a logic signal on the GS pin. Pop and click reduction circuitry provides low on/off switching noise while allowing the device to start within 1 ms. An active low standby function permits lower current consumption (down to $1 \mu\text{A}$ typ). The TS2007FC also integrates output short-circuit protection and thermal shutdown protection.

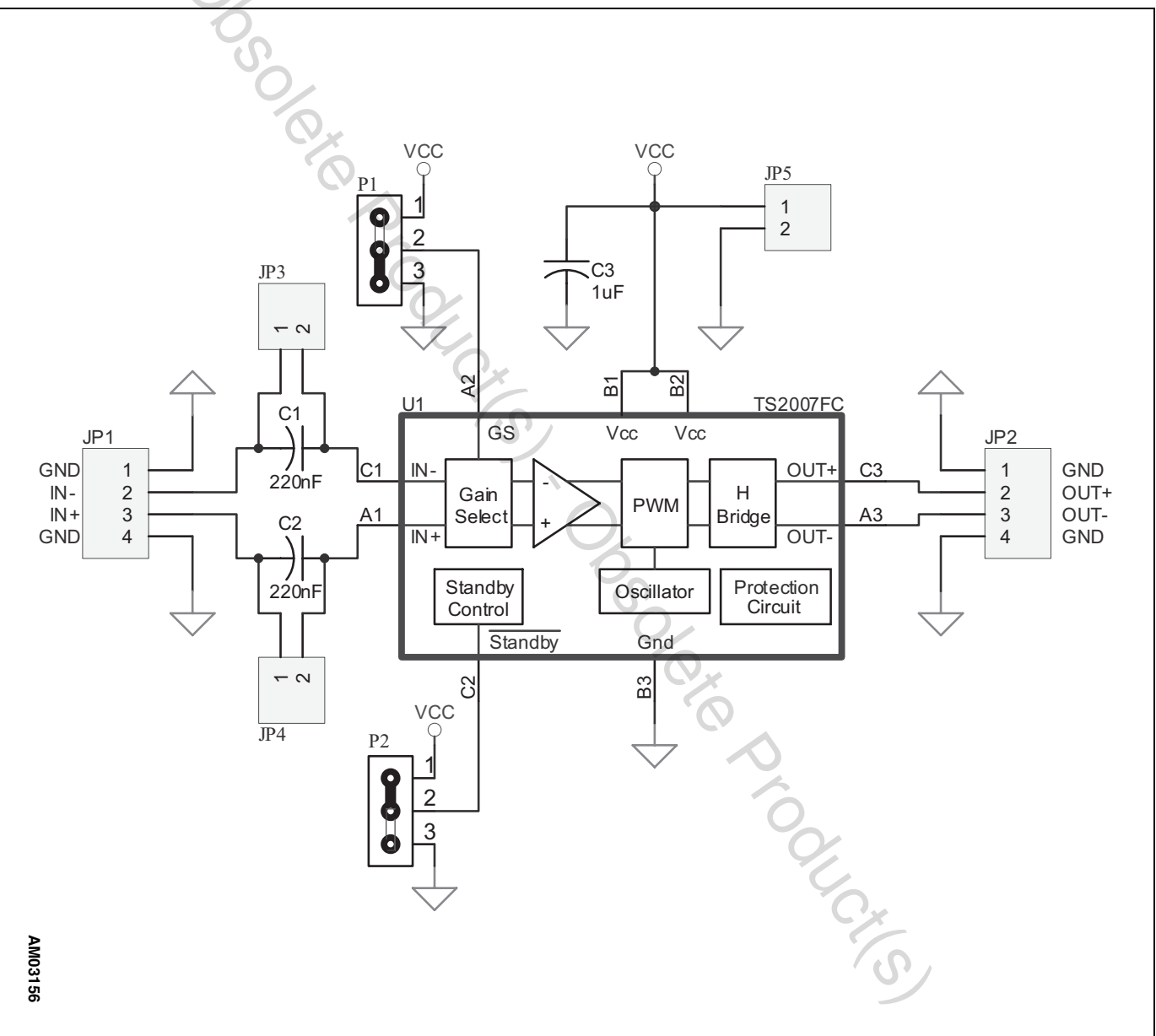
The STEVAL-CCA012V demonstration board is constructed on a two-layer PCB with easily accessible connectors, allowing users to change



or drive the gain select and standby control pin, and to change the input configuration.

1 Circuit schematic

Figure 1. Schematic diagram



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
17-Jun-2009	1	Initial release.

Obsolete Product(s) - Obsolete Product(s)

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