

Product Overview

ONA10IV: 16 Watt Digital Input Class-D Audio Amplifier With Speaker Sense Digital Output

For complete documentation, see the data sheet.

The ONA10IV is a digital input, mono Class-D audio amplifier with real time, integrated current and voltage sensing of the loudspeaker it's driving. This sense data is transmitted to the host through a separate digital output to enable a smart amplifier system. The ONA10IV can be directly connected to a 2-cell (2S) or 3-cell (3S) battery and offers a fast automatic gain control (AGC) for brownout protection that can react within 10 μ s.

Up to eight devices can share the digital audio interface through I2C control. A separate bus (MAGC) is used to synchronize gain across multiple ONA10IV instantiations during a brownout protection event.

Features

- Filter-less, Mono Class-D Amplifier◆ 16 W into 4 Ω / 14 V Supply (1% THD+N)◆ 13.8 W into 4 Ω / 12 V Supply (1% THD+N)◆ 500 μ V “Click and Pop” Suppression◆ 42 μ V RMS Noise Floor (A-Weighted)
 - Smart Speaker Voltage & Current Sense◆ Up to 20 kHz Bandwidth◆ 81 / 71 dBA Dynamic Range (Voltage / Current)◆ 0.5% V/I Gain Error Variation
 - Digital Audio / Sense Configurations◆ 16 kHz to 96 kHz Audio Sampling Rates◆ 16-, 24-, and 32-Bit I2S Data◆ 16-, 24-, and 32-Bit TDM Data (up to 8 Slots)
 - No Boost Caps Required
 - I2C Fast Mode (up to 1 MHz) Control
 - EMI Reduction Controls
 - Over Current and Thermal Protection
 - PVDD Power Supply: 5.5 V to 14 V
 - DVDD Power Supply: 1.62 V to 1.98 V
 - 30-Bump WLCSP
 - ◆ 2.31 mm x 2.89 mm, 0.4mm pitch
- For more features, see the data sheet

Benefits

- Higher performance audio amplification that is well aligned with battery powered applications

Applications

- Audio Amplifier for Micro-speakers
- Audio Amplifier for Loudspeakers
- Speaker Protection & Reliability
- Smart Amplifier Algorithms
- Home Automation

End Products

- Laptops
- Smart Speakers
- Wireless Speakers
- Soundbars
- Alarms

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Class	Output Power Typ (W)	V _{CC} Max (V)	Output Type	t _{on} Typ (ms)	THD + N Typ (%)	I _o Typ (mA)	I _{SD} Typ (nA)	Package Type
NCA-ONA10IVUCX	1.2	Pb-free Halide free	Active	D	16	14	BTL		0.012	13.5	2000	WLCSP-30

For more information please contact your local sales support at www.onsemi.com.

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