



PRODUCT BRIEF

PORTABLE CONSUMER CODEC CLASS-H DIRECTCONNECT™ HEADPHONE AMPLIFIER

TSDP11xx / TSDP10xx

DESCRIPTION

The TSDP11xx / TSDP10xx family is a Class-H architecture Capless DirectConnect Ground-Referenced Output Headphone amplifier with independent left/right volume and GPIO control. It provides high-quality audio fidelity with an SNR / DNR of up to 106dB and output power of 170mW per channel into 16Ω. The differential inputs allow for flexible input configuration that maximizes noise rejection for best -in-class CMRR. At 10kΩ loads, 2Vrms output can be achieved, all without the need to change any output filters.

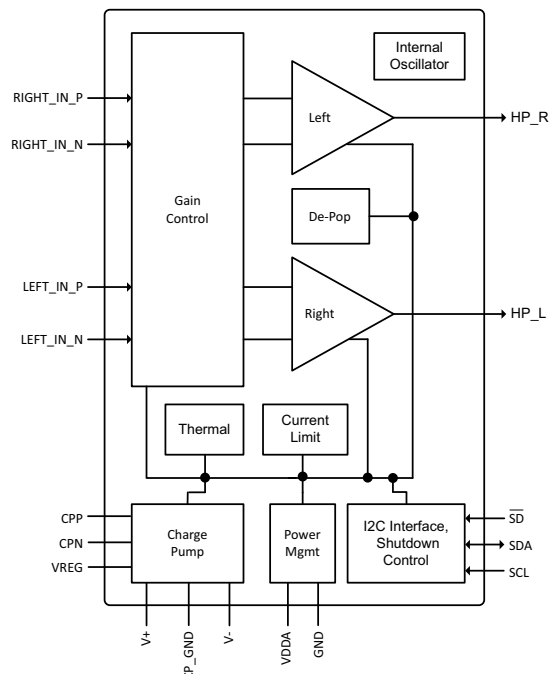
TARGET APPLICATIONS

- IIoT / EPC / IPC / SBC Motherboards
- Tablet Computers
- Gaming-class Laptops & Desktops
- Portable Gaming Platforms
- Digital Audio Streaming / Connected Audio Accessories
- Bluetooth™-enabled Headphones / Headsets / Docking Stations / Adapters
- Wi-Fi (Miracast, Chromecast, AirPlay®)-enabled Headphones / Headsets / Docking Stations
- Lightning-enabled Headphones / Headsets / Docking Stations / Adapters
- Thunderbolt® I/II/III-enabled Headphones / Headsets / Docking Stations / Connectivity Expansion Hubs / Adapters
- HDMI™-enabled VR / AR Headphones and Headsets
- MHL™-enabled VR / AR Headphones and Headsets
- USB 1.1 / 2.0 / 3.0 / 3.1 Gen 1 / 3.1 Gen 2 / USB-C-enabled Headphones / Headsets / Docking Stations / Connectivity Expansion Hubs / Tablets / Mobile Phones / Tablet & Mobile Phone Cases / Portable Projectors
- Remote Controls / Gaming Controllers with Headphone Jacks

FEATURES

- **Class-H TSDP1xx Capless DirectConnect Technology**
 - Eliminates Large Output DC Blocking Capacitors
 - Reduces Board Area
 - Reduces Component Height and Cost
 - Enables Full Bass Response Without Attenuation
 - Offers No Pop on Start-Up or Power-Down
 - Reduces Power consumption by as much as 45% at Typical Listening Levels
 - Low Quiescent Current
 - Up to 170mW Per Channel into 16Ω
 - Charge-pump allows for True Ground Centered Outputs
 - High Power Supply Rejection Ratio (>100 dB PSRR)
 - Differential Inputs for Maximum Noise Rejection Ratio (90 dB CMRR)
 - Optional register controlled High-Impedance Outputs When Disabled
 - Independent Left/Right Volume and Mute Control
 - SNR of 106dB
 - Power Supply Voltage Range: 2.5 V to 5.5 V
 - GPIO Control for Hardware Shutdown
 - Advanced Features Control via Register setting over I2C (TSDP11xx Only)
 - 20 Pin, 4 mm x 4 mm QFN RoHS Package
 - Commercial & Industrial Temp Offerings, with and without I2C Control

BLOCK DIAGRAM



TSDP11xx / TSDP10xx
2Vrms DirectConnect Headphone Amplifier

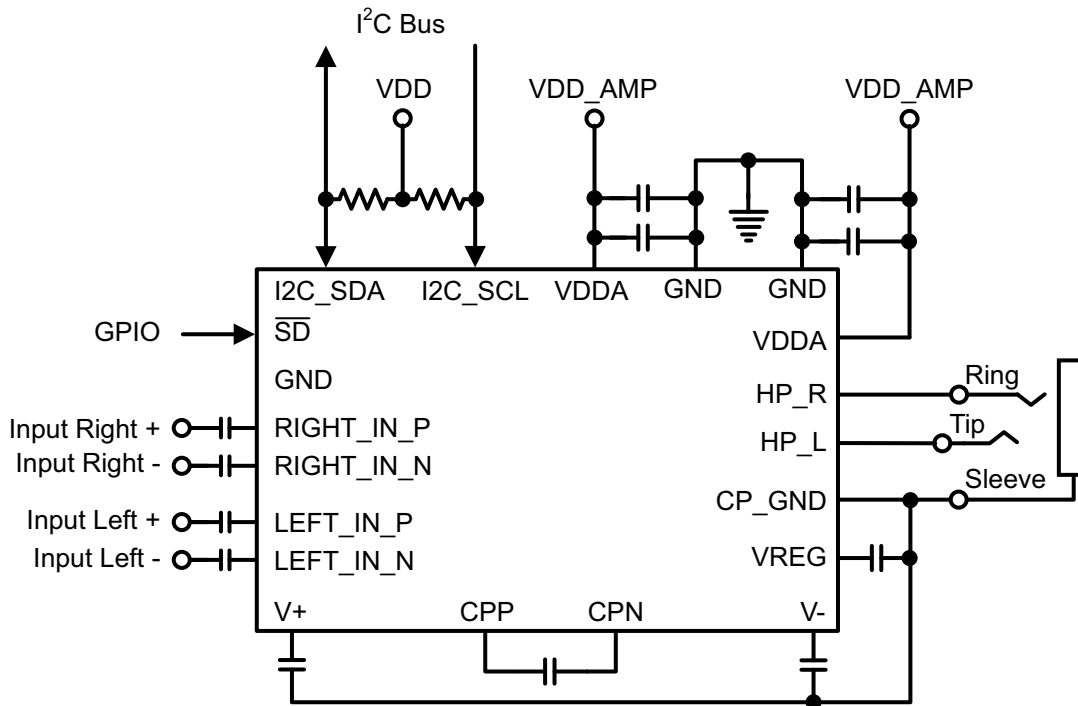


Figure 1. TSDP11xx Functional Diagram



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