

## Multimedia CODEC with Class AB and D Headphone Drivers

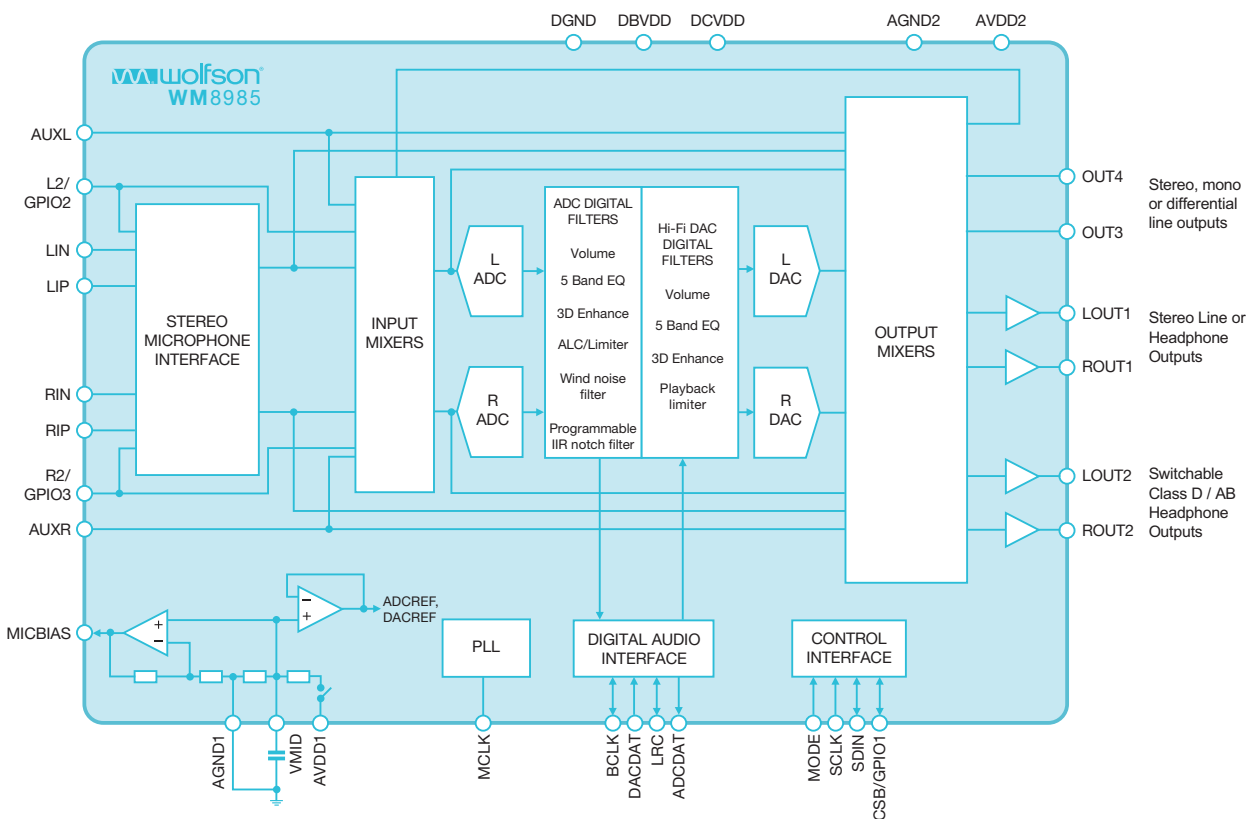
# WM8985

### World's first Class AB-to-D Switchable CODEC.

The WM8985 provides high performance audio while significantly increasing battery life for multimedia mobile phones, portable and video players and Bluetooth headsets.

The device is a low power, high quality, feature-rich stereo CODEC designed for portable multimedia applications requiring the lowest possible power consumption and high quality audio.

On-board digital signal processing is used to implement solutions for wind noise reduction, speaker equalisation and 3D enhancement.



#### PRODUCT BENEFITS

- High performance stereo audio
- Greatly increased battery life; headphone amplifier efficiency > 70%
- Reduced external component requirements
- Integrated DSP including noise filtering, equalization and 3D enhancement
- Highly flexible audio mixing capability

#### TARGET APPLICATIONS

- Multimedia mobile phones
- Portable audio and video players
- Bluetooth headsets

**PRODUCT FEATURES**

- DAC SNR 98dB, THD -86dB ('A' weighted @ 48kHz)
- ADC SNR 92.5dB, THD -75dB ('A' weighted @ 48kHz)
- Dynamically selectable Class D or AB headphone drivers
- 40mW headphone output power into 16Ω load
- Pop and click suppression
- Stereo differential or mono microphone interfaces
- Programmable preamp gain
- Programmable ALC and noise gate in ADC path
- Low-noise bias supplied for electret microphones
- 3D stereo enhancement
- Digital playback limiter
- 5-band equaliser (record or playback)
- Programmable high pass and notch filter
- PLL supporting various clocks between 8MHz-50MHz
- 2.5V to 3.6V analogue supplies
- 1.71V to 3.6V digital supplies
- 5x5mm 32-lead QFN package
- Excellent EMI performance

**PRODUCT DETAILS**
**EXTENDED BATTERY LIFE**

The WM8985 allows the user to dynamically select between either Class D or Class AB amplifiers for the headphone output. The Class D mode significantly reduces power consumption and enhances the battery life in many applications. The WM8985 operates at analogue supply voltages from 2.5V to 3.6V, although the digital core can operate at voltages down to 1.71V to save power. Additional power management control enables individual sections of the chip to be powered down under software control.

**REDUCED COMPONENT COUNT**

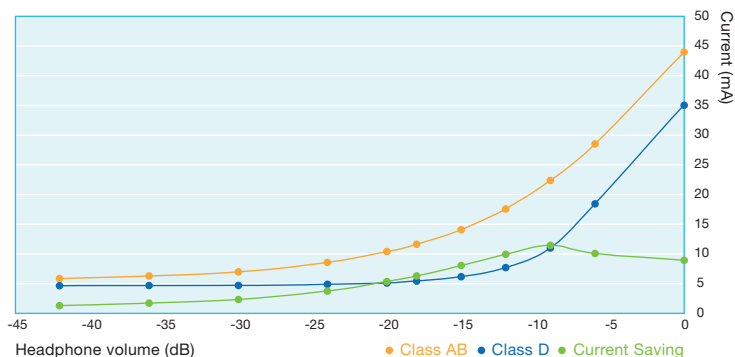
External component requirements are reduced as no separate microphone or headphone amplifiers are required.

**ENHANCED AUDIO QUALITY AND MIXING CAPABILITY**

Advanced DSP features include a 5-band equaliser and 3D enhancement, an ALC/limiter for the microphone or line input through the ADC and a digital playback limiter. Other programmable filtering functions are available in the ADC path. Highly flexible mixing capabilities enable many new application features, with the option to record and playback any combination of voice, line inputs and digital audio.

**WM8985 POWER CONSUMPTION SAVINGS**

(Measured with AVDD = 3.3V, DVDD = 1.8V, 30Ω headphone load)


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