Next-Generation Digital Silicon Micro-Electro-Mechanical-systems (MEMS) Microphones

Wolfson's digital MEMS microphones combine low power consumption, excellent audio capture, superior signal-to-noise (SNR) ratio, low total harmonic distortion (THD) in a miniature low-profile package, making them ideal for applications such as mobile phones, PCs, portable media players, digital still cameras, and navigation devices.

The WM7210 and the WM7220 complement Wolfson's high volume family of analog MEMS microphones which were introduced in 2009. Based on Wolfson's proprietary CMOS/MEMS membrane technology, the new digital devices deliver high reliability and performance, and can withstand the high temperatures needed for automated flow solder assembly, which can damage conventional microphones.

These digital microphones are class leading with the lowest THD performance, even at very high sound pressure levels. Low THD is essential in delivering crystal-clear sound, as loud sounds are often distorted by the microphone.

The WM7210 and WM7220 also help save battery life with ultra low power consumption in sleep mode. When the clock delivered to the microphone drops below a specified frequency, the microphones automatically power down into a sleep mode, consuming just a few micro amps.

Each microphone incorporates a high-performance ADC which outputs a single-bit Pulse Density Modulated (PDM) format audio data stream, while the microphone output can be defined for left or right configuration allowing for applications requiring stereo operation.

The WM7210 is available in a 4 mm x 3 mm x 1 mm thin package, while the WM7220 is available in a 4.72 mm x 3.76 mm x 1.25 mm package.

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