

XENSIV™ – IM66D130A

Automotive MEMS microphone

The Infineon IM66D130A is part of the 2nd generation automotive qualified high-performance MEMS microphones. The device offers a digital PDM interface in a 3.5 x 2.65 x 0.98 mm³ package.

Infineon technical leadership in MEMS technology ensures best in class performance for this digital microphone. Due to its high Acoustic-Overload-Point (AOP) IM66D130A ensures stable performance in loud environments. It is designed to serve as a universal microphone for all automotive interior and exterior applications.

Infineon's MEMS technology is based on a miniaturized microphone design. This results in high linearity of the output signal very close to the AOP. With its low equivalent noise floor, the microphone is no longer the limiting factor in the audio signal chain and **enables high performance acoustic automotive applications.**

The digital microphone ASIC contains a microphone specific THD compensation algorithm for optimal performance at higher Sound Pressure Levels (SPL), an extremely low-noise preamplifier and a high-performance sigma-delta Analog-to-Digital Converter (ADC). The tight manufacturing tolerance, combined with the fact that each device is calibrated with an advanced Infineon calibration algorithm, results in small sensitivity and phase matching tolerances. This makes it **well suited for beam forming arrays and multi-microphone applications.**

The device is designed for applications where low self-noise (high SNR), low distortions and a high acoustic overload point are required.

Potential applications

- Hands-free calling
- E-call
- Active Noise Cancellation (ANC)
- Road Noise Cancellation (RNC)
- Road condition detection.
- Siren detection
- External voice control



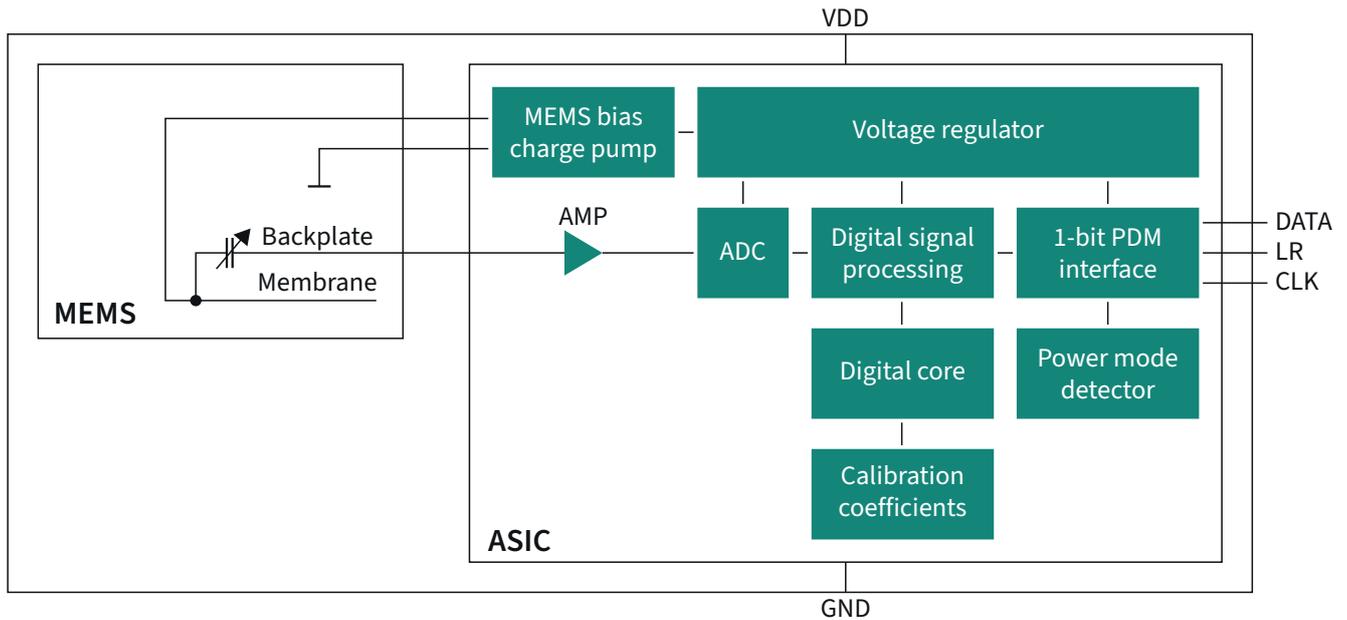
Key features

- Automotive qualification according to AEC-Q103-003
- High Acoustic Overload Point (AOP) of 130 dB SPL
- Flat frequency response down to 7 Hz
- Close sensitivity and phase matching
- High SNR of 66 dB(A)
- Enlarged operating temperature range up to +105°C
- Acoustic characterization data over the whole temperature range available

Key benefits

- **Optimized for exterior applications** due to high AOP
- **Reduced effort, risk, and costs** of qualifications due to full AEC-Q103 qualification
- **Enabling best ANC performance** due to flat frequency response down to 7 Hz and small group delay
- **High speech intelligibility for improved voice command recognition** due to low self-noise of the microphone
- Individually calibrated microphone gives **narrow sensitivity matching** for optimal beam forming performance.
- High linearity close to the AOP
- **Extended availability** to match long automotive design cycles
- Flexible use in **different application environments** due to increased operating temperature range
- Digital PDM interface

Block diagram



Product table

Parametrics	IM66D130A
Signal to Noise Ratio (SNR)	66 dB(A)
Acoustic Overload Point (AOP)	130 dB SPL
Total Harmonic Distortion (THD) @ 1%	124 dB SPL
Sensitivity @ 1 kHz, 94 dB SPL	-36±1 dB(A)
Low Frequency Roll Off (LFRO)	7 Hz
Interface	Digital PDM
Current consumption	1100 µA
Supply voltage	1.62 to 3.6 V
Port location	Bottom port
Package dimensions	3.5 x 2.65 x 0.98 mm ³
SP-Nr.	SP005851225

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