PRODUCT BRIEF

XENSIV™ - IM63D135A

Automotive qualified MEMS microphone

The Infineon IM63D135A is part of the 2nd generation automotive qualified high- performance MEMS microphones with a high Acoustic-Overload-Point (AOP) of 135 dB SPL. The device offers a digital PDM interface in a 3.50 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 very high AOP the IM63D135A ensures stable performance in extremely loud environments. It is designed to serve as a specialized microphone for all exterior automotive applications.
The digital microphone ASIC contains a microphone specific distortion compensation algorithm for optimal THD (Total-Harmonic-Distortions) performance at higher sound pressure levels (SPL). This results in high linearity of the output signal and low distortions very close to the AOP.
Infineon's MEMS technology is based on a miniaturized microphone design. 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 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 exterior applications where a high acoustic overload point is required.



Key features

- Automotive qualification according to AEC-Q103-003
- Very high Acoustic Overload Point
- (AOP) of 135 dB SPL
- Flat frequency response
- down to 7 Hz
- Close sensitivity and phase matching
- Enlarged operating temperature range up to +105°C
- Acoustic characterization data over the whole temperature range available
- Digital PDM interface
- Environmental robust up to IP57

Key benefits

- Optimized for exterior applications due to very high AOP
- Reduced effort, risk, and costs of qualifications due to full AEC-Q103 qualification on device level
- Enabling best ANC performance due to flat frequency response down to 7 Hz and small group delay
- Individually calibrated microphone gives narrow sensitivity matching for optimal beam forming performance
- Extended availability to match long automotive design cycles
- Flexible use in different application environments due to increased operating temperature range

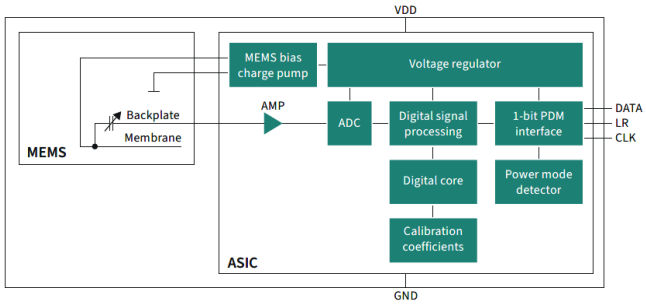


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Potential applications

– Siren detection
– Road condition detection
– External voice control
– Active and road noise cancellation (ANC / RNC)

Block diagram



Product table

Parametrics	IM63D135A
Signal to Noise Ratio (SNR)	63 dB(A)
Acoustic Overload Point (AOP)	135 dB SPL
Total Harmonic Distortion (THD) @ 1%	~129 dB SPL
Sensitivity @ 1 kHz, 94 dB SPL	-41±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 mm3
Ordering number	SP006031385

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