



SPH1878

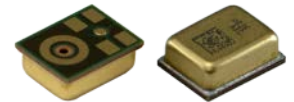
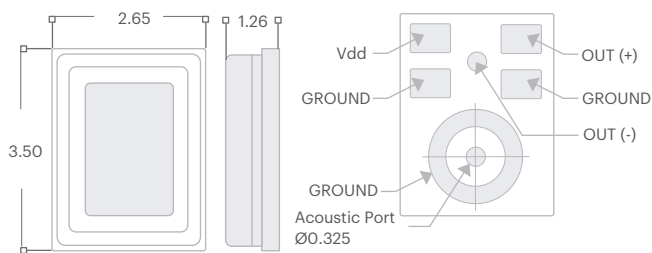
SPH1878 - High Performance Analog Automotive Microphone

PRODUCT OVERVIEW

- ▶ AEC-Q100/103 Qualified for Automotive Robustness
- ▶ High Dynamic Range (66.5dB SNR, 134dB AOP) for high-quality voice pick-up
- ▶ 7 Hz LFRO enables superior Active Noise Cancellation (ANC) for a quieter cabin
- ▶ Ultrasonic frequency response for proximity detection
- ▶ ± 1 dB sensitivity matching, with an option to upgrade to ± 0.5 dB matching, for enhanced beamforming performance
- ▶ Support for both Differential & Single Ended Modes

Key Parameters	Normal Mode	Low Power Mode
Signal-to-noise ratio (SNR)	66.5 dB (A)	64.5 dB (A)
Acoustic Overload Point (1% / 10% THD)	125 / 134 dB SPL	125 / 132 dB SPL
Low Frequency Roll Off (LFRO)	7 Hz	
Current Consumption	250 μ A	100 μ A
Sensitivity and Tolerance	-38 ± 1 (Single-Ended -44 ± 1) dB V/Pa	
Supply Voltage	2.3 to 3.6V	1.6 to 1.9V
Interface	Differential or Single-Ended Analog	
Port Location	Bottom Port	
Package Dimensions	3.50 x 2.65 x 1.26 mm	
Operational Temperature Range	-40° to $+85^\circ$ C	

DIMENSIONS (MM)

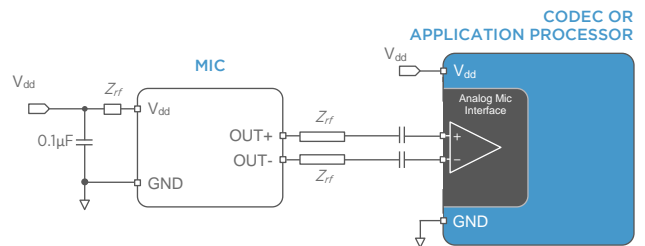


TYPICAL APPLICATIONS

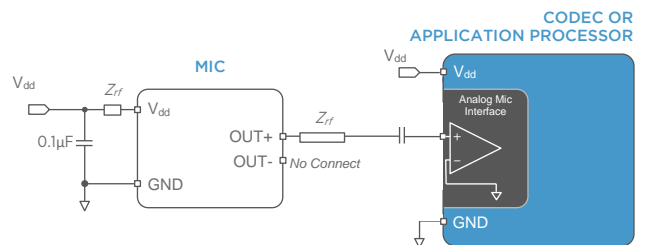
- ▶ Active Noise Cancellation
- ▶ Voice Call / ECall
- ▶ Proximity Detection

APPLICATION NOTES

TYPICAL DIFFERENTIAL MODE APPLICATION CIRCUIT



TYPICAL SINGLE-ENDED MODE APPLICATION CIRCUIT



Note: The above block diagram is for illustrative purposes only. For additional information, refer to the microphone datasheet.

CONTACT

For inquiries, please contact your nearest Knowles representative, or Knowles at: sales@knowles.com

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SPH9855

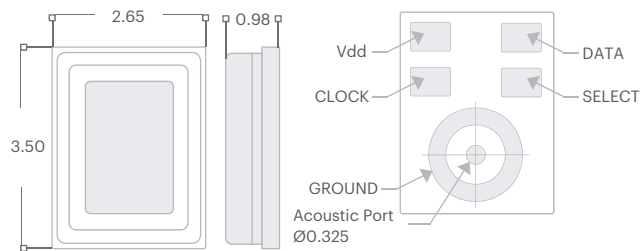
SPH9855 - High Performance Digital Automotive Microphone

PRODUCT OVERVIEW

- ▶ AEC-Q100/103 Qualified for Automotive Robustness
- ▶ High Dynamic Range (66dB SNR, 132.5dB AOP) for high-quality voice pick-up
- ▶ Ultrasonic frequency response for proximity detection
- ▶ ±1 dB sensitivity matching, with an option to upgrade to ±0.5 dB matching, for enhanced beamforming performance
- ▶ 2-D Barcode for traceability

Key Parameters	Normal Mode	Low Power Mode
Signal-to-noise ratio (SNR)	66 dB(A)	64.5 dB(A)
Acoustic Overload Point (1% / 10% THD)	130.5 / 132.5 dB SPL	113 / 116 dB SPL
Low Frequency Roll Off (LFRO)	25 Hz	
Current consumption	1000 uA	260 uA
Sensitivity and Tolerance	-37 ± 1 dB FS / Pa	-21 ± 1 dB FS / Pa
Supply voltage	1.65 to 3.6V	
Interface	PDM Digital	
Clock Rates Supported	1.1 to 4.8 MHz	500 to 900 kHz
Port location	Bottom Port	
Package dimensions	3.50 x 2.65 x 0.98 mm	
Operational Temperature Range	-40° to +100°C	

DIMENSIONS (MM)

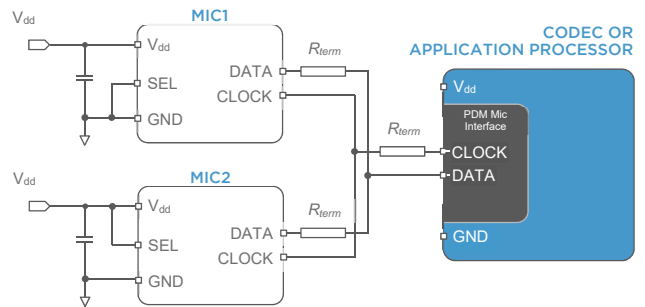


TYPICAL APPLICATIONS

- ▶ Active Noise Cancellation
- ▶ Voice Call / ECall
- ▶ Proximity Detection

APPLICATION NOTES

TYPICAL STEREO MODE APPLICATION CIRCUIT



Note: The above block diagram is for illustrative purposes only. For additional information, refer to the microphone datasheet.

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