



# SPH1878

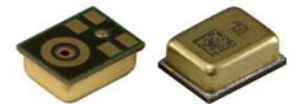
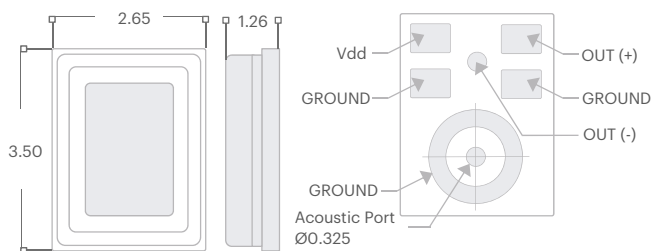
## SPH1878 - High Performance Analog Automotive Microphone

### PRODUCT OVERVIEW

- ▶ AEC-Q100/103 Qualified for Automotive Robustness
- ▶ High Dynamic Range (67 dB 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
- ▶  $\pm 1$  dB sensitivity matching, with an option to upgrade to  $\pm 0.5$  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)	67 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 $\mu$ A	100 $\mu$ A
Sensitivity and Tolerance	$-38 \pm 1$ (Single-Ended $-44 \pm 1$ ) 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	$-40^{\circ}$ to $+85^{\circ}$ C	

### DIMENSIONS (MM)

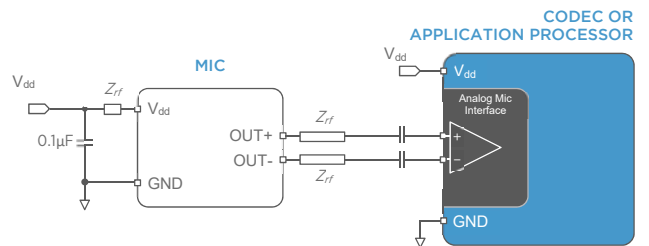


### TYPICAL APPLICATIONS

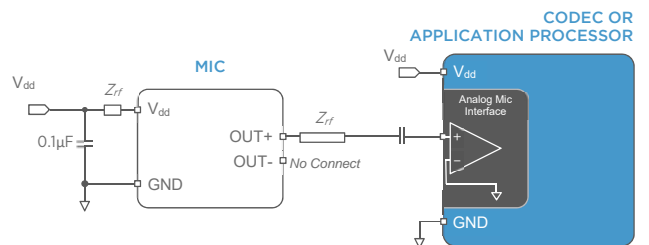
- ▶ Active Noise Cancellation
- ▶ Voice Call / ECall
- ▶ Proximity Detection

### 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](mailto:sales@knowles.com)

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