



The Evolution of the High-Fidelity, Compact Microphone Delivered by PUI Audio

Today's Electronics Industry is filled with devices driven by voice — smartphones, headsets, tablets, laptops, wearables— designed for voice capture and voice control.

Until today, these devices were built with capacitive MEMS microphones that operate on principles that were developed almost one-hundred years ago.

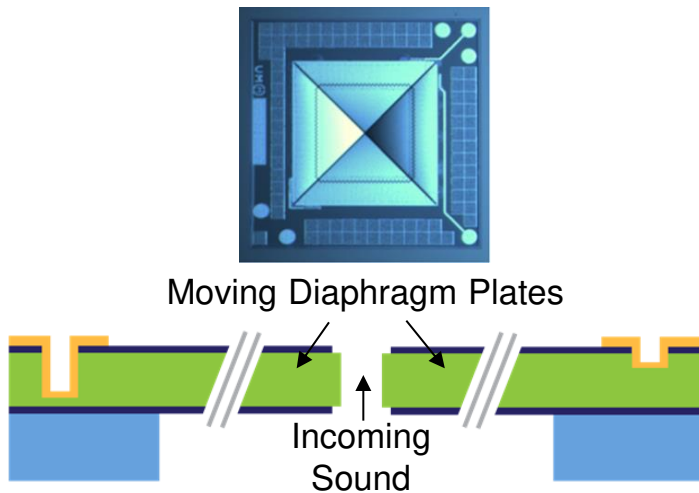
Enter the piezoelectric MEMS microphone from PUI Audio:

Instead following the design of traditional capacitive MEMS microphones, trapping air between layers, PUI Audio's piezoelectric MEMS diaphragm travels freely with sound making for **improved fidelity** and **noise-rejection**. The full range **PMM-3738-WP-R** features a 100 Hz to 10 kHz frequency response to cover 95% of the audio band, while wind noise on the **PMM-3738-WP-2-R** is limited due to a smart 250 Hz roll-off — perfect for automotive and outdoor applications.

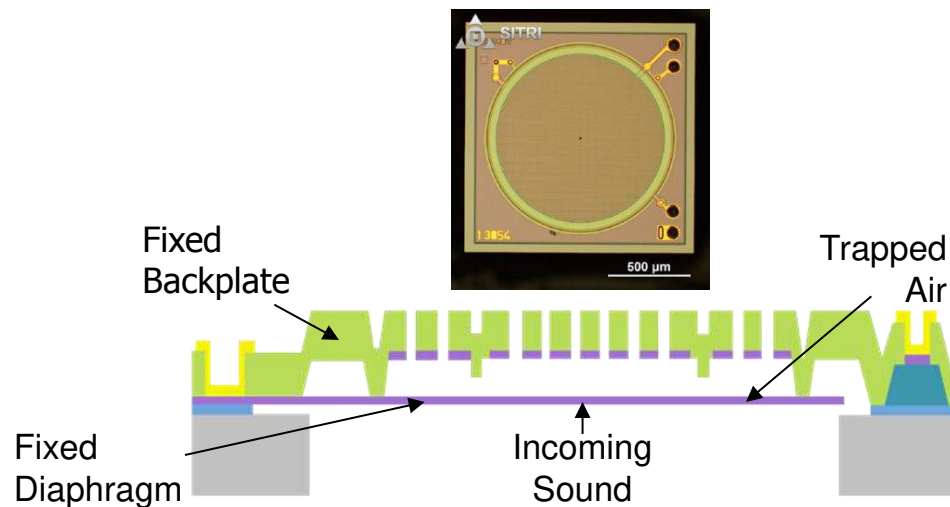
Capacitive MEMS are also notorious for degraded performance due to dust and water ingress —losing up to 80% of sensitivity, if not failing completely. PUI Audio's MEMS microphone is **dustproof** and **waterproof** (IP68 rated), without the use of performance degrading mesh, and is built with better unit-to-unit consistency for array applications.



PUI Audio Piezoelectric MEMS Microphone



Capacitive MEMS Microphone



Specification	PUI Audio Piezo MEMS	Capacitive MEMS	Results from using piezoelectric MEMS
SNR	≥60 dB	>61 dB	Slated future designs go past 75 dB
Size	Ultra small	Larger die	Suited to flip chip
PSRR	-100 dB	-70 dB	Much better noise rejection
Startup time	<5μs	>50,000μs	10,000X faster
Particle Resistant	Yes	No	Real-world reliability
Sensitivity Drift	None	Yes	Superior beam forming arrays
IP68 Waterproof	Yes	No	Only truly waterproof mic
Air Shock	Yes	No	Piezo design survives all phone drops
Differential MEMS	Yes	No	Native differential design for better performance