

M981 SiliconEar™ Specification

Rev 1.0

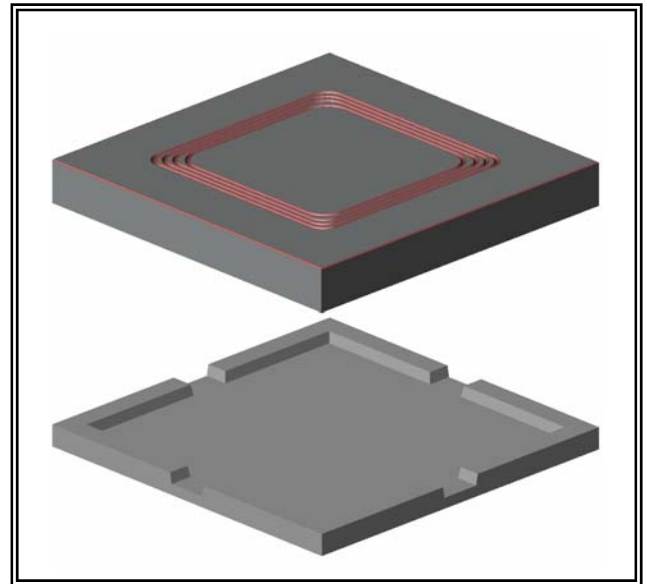
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Product Description:

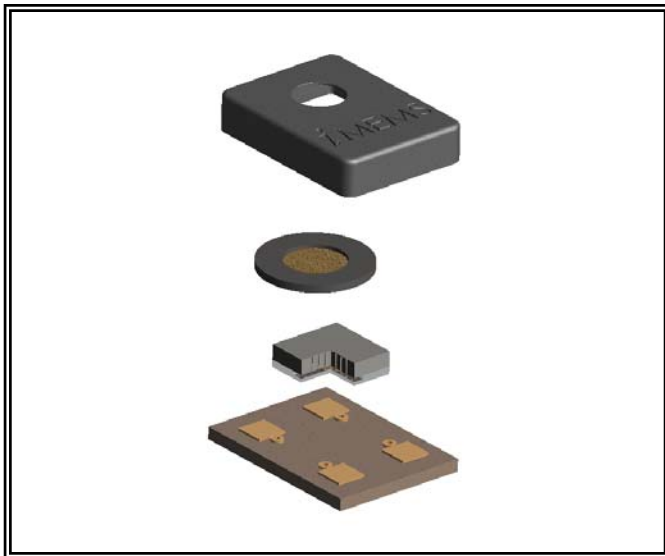
InterMEMS Inc. is proud to offer the M981 Solid State Monolithic MEMS Microphone with the highest performance available in the industry.

The SiliconEar™ is designed for high volume automated pick and place assembly, and is available in an industry standard footprint fully compatible with all SMT handling and solder reflow processes.

It can be provided in Rails, or on Tape and Reel for easy loading into your Automated SMT assembly equipment



Exploded View of Silicon Capacitive Mic, and Pyrex Dead Volume.

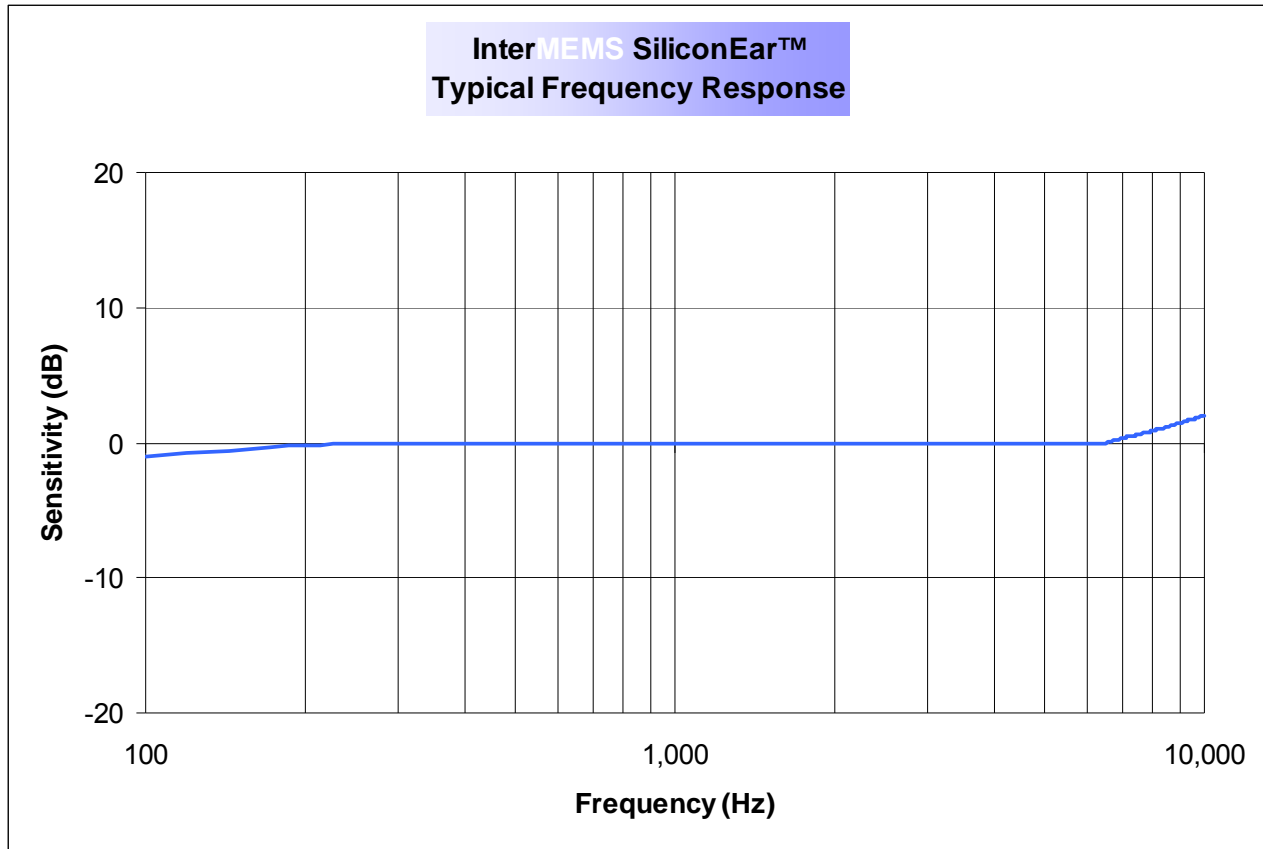


Unlike the typical Electret Condenser Microphones (ECMs), the SiliconEar™ can tolerate Surface Mount solder reflow temperatures, thereby eliminating the need for hand soldering by operators, and costly rework at the end of the assembly due to excessive thermal exposure.

By the nature of its integral packaging, in-line testing for all key performance parameters can be implemented unlike the need to fully complete the assembly before testing of ECM devices.



Performance Specifications:



Parameter	Minimum	Nominal	Maximum	Units
Directionality		Omni-directional		
Sensitivity ¹	-39	-36	-33	dB
Output Impedance			400	Ω
Supply Voltage	1.5		3.6	V
Current Consumption			250	μA
Signal to Noise Ratio (SNR)	60			dB
Input Referred Noise ²		35		dBA SPL
Total Harmonic Distortion ³		< 1	10	dB
Operating Temperature	-40	25	100	°C
Storage Temperature	-40		125	°C
Operating Frequency Range	100		20,000	Hz

¹ Without added Amplification.

² Based on Standard A weighted method.

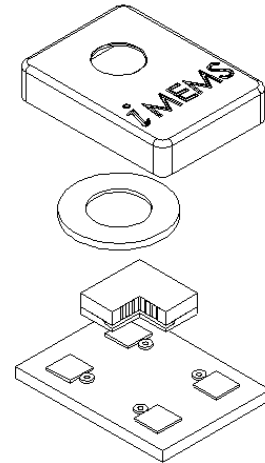
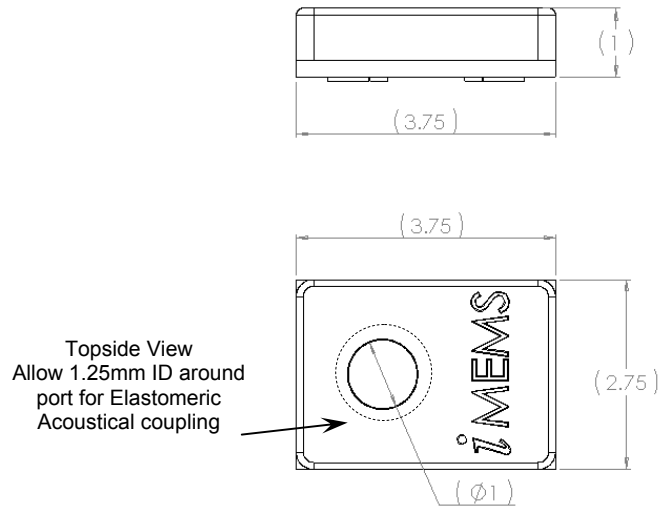
³ Guaranteed Nominal THD at 100 db SPL, and Max THD at 110 db SPL.



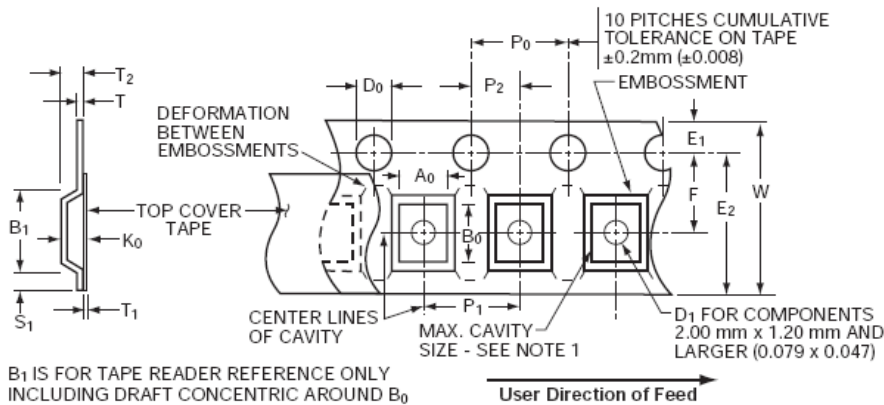
Mechanical Specifications

M981 Package Configuration:

Overall Dimensions 3.75mm x 2.75mm x 1mm

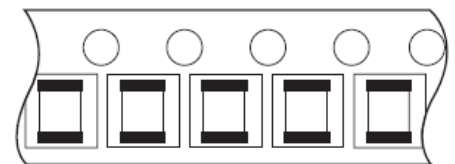


Tape and Reel Configuration:



B₁ IS FOR TAPE READER REFERENCE ONLY INCLUDING DRAFT CONCENTRIC AROUND B₀

Chip Orientation

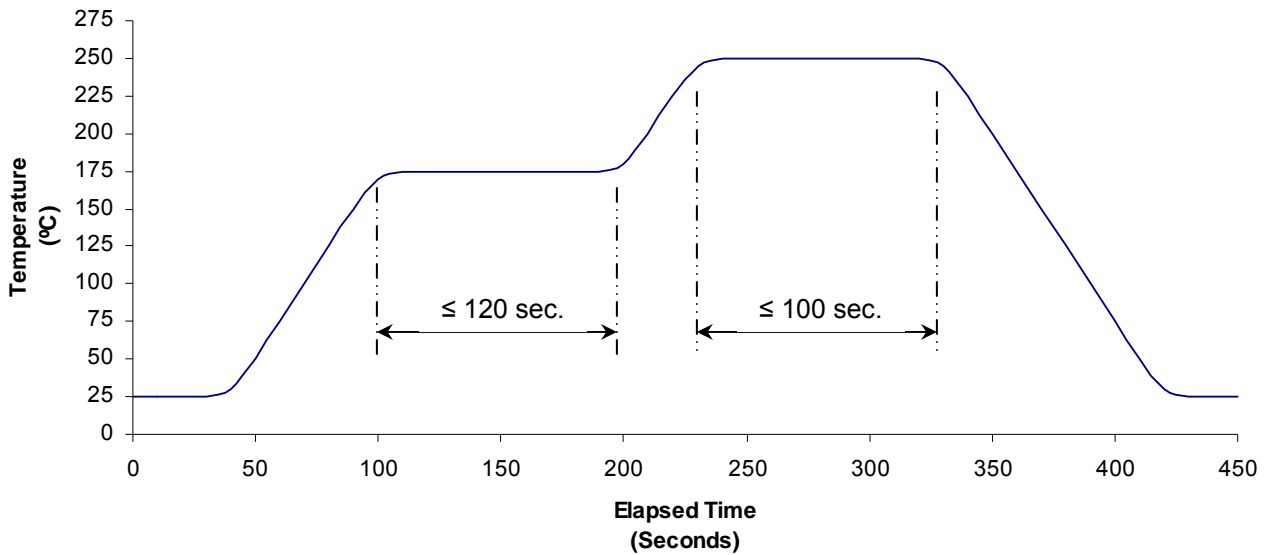




Solder Reflow Recommendations:

The following Temperature profiles are recommended for Solder Reflow processing. Do not immersion clean after mounting of the SiliconEar™ Microphone after SMT mounting as entrapment of fluid may occur and Device performance could be detrimentally affected.

Typical Solder Reflow Profile



Stage	Temperature (°C)	Time (Maximum) (Sec.)
Pre-Heat	170 — 180	120
Solder Reflow	> 230	100
Peak	≤ 260	30

Reliability:

To Be Determined