MEMS
analog and digital microphones

Crystal-clear audio quality with the size, cost and volume production of MEMS sensors

Microphones based on MEMS technology offer an excellent audio quality. They are less susceptible to mechanical vibrations, temperature variations and electromagnetic interference compared to traditional electret microphones. The MEMS process makes these microphones the ideal stereo solution wherever two perfectly matched microphones are required.

BENEFITS OF MEMS MICROPHONES

- Enhanced performance
  - High stability of sensitivity after reflow
  - Very stable unit-to-unit performance
- Consolidated micromachining technology
  - New applications enabled: stereo capture, noise cancellation, beam forming
  - High shock resistance

TARGETED APPLICATIONS

- Mobile phones
- Laptops
- Phablets
- Smartphones
- Digital cameras and camcorders
- Gaming
- Portable media players
- Hands-free devices
- Tablets
- Hearing aids
- Headsets

Features	Digital MEMS microphones	Analog microphones	Added value of digital MEMS microphones	Benefits for customer
Immunity to RF noise and electromagnetic interference (EMI)	•		Easier application design	Faster time to market
Analog signal conditioning not required	•		Easier application design	Faster time to market, BOM cost reduction
Robust digital transmission	•		Easy MEMS positioning on application system. Standard digital conditioning	Allows audio enhancement integration for stereo capture, noise cancellation, beam forming

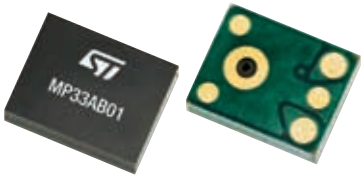
DIGITAL MEMS MICROPHONES

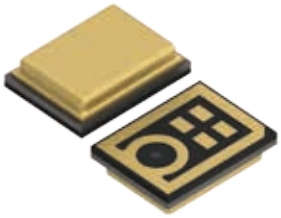
Part number	Top/bottom port	Package size (mm)	Supply voltage (V)	SNR (dB)	Sensitivity (dB FS)	AOP (dB SPL)	Current consumption (µA)
MP45DT02	Top	4.72x3.76x1.25 (Plastic)	1.64 to 3.6	61	-26	120	650
MP45DT02-M	Top	4.72x3.76x1.25 (Metal)	1.64 to 3.6	61	-26	120	650
MP34DT01	Top	3 x 4 x 1 (Plastic)	1.64 to 3.6	63	-26	120	600
MP34DT01-M	Top	3 x 4 x 1 .06 (Metal)	1.64 to 3.6	61	-26	120	600
MP34DT02	Top	3 x 4 x 1.06 (Metal)	1.64 to 3.6	60	-26	120	600
MP34DB01	Bottom	3 x 4 x 1 (Plastic)	1.64 to 3.6	62.6	-26	120	650
MP34DB02	Bottom	3 x 4 x 1 (Metal)	1.64 to 3.6	62.6	-26	120	650

ANALOG MEMS MICROPHONES

Part number	Top/bottom port	Package size (mm)	Supply voltage (V)	SNR (dB)	Sensitivity (dB FS)	AOP (dB SPL)	Current consumption (µA)
MP23AB02B	Bottom	3.35x2.5x0.98 (Metal)	1.5 to 3.6	64	-38	125	250
MP33AB01	Bottom	3.76x2.95x1 (Plastic)	1.5 to 3.6	63	-38	125	250
MP33AB01H	Bottom	3.76x2.95x1 (Plastic	1.5 to 3.6	66	-38	125	250

Note: Bottom-port microphones are also available with metal cap option upon request.





Evaluation boards are available. You can find all the appropriate documentation, such as application notes, user manuals, databriefs and gerber files at www.st.com/memsmics

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Paper from responsible sources
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