

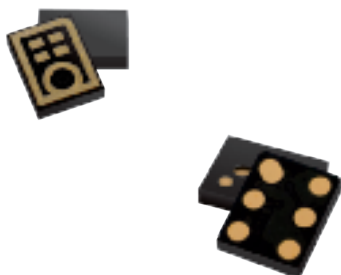
# MEMS digital microphones



STMicroelectronics

## 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 microphones the ideal stereo solution wherever two perfectly matched microphones are required.



### MP45DT01 key features

- Top-port microphone
- Single supply voltage operation
- 58 dB SNR
- 120 dB SPL acoustic overload point
- Omni-directional sensitivity
- PDM single-bit output with stereo operation support
- Package: HLGA-6, 4.72 x 3.76 x 1.0 mm<sup>3</sup>

### MP34DB01 key features

- Bottom-port microphone
- Single supply voltage operation
- 62 dB SNR
- 120 dB SPL acoustic overload point
- Omni-directional sensitivity
- PDM single-bit output with stereo operation support
- Package: HLGA-5, 3 x 4 x 1.0 mm<sup>3</sup>
- Flat frequency response over the full professional audio bandwidth (20 Hz to 20 kHz)

### Benefits of MEMS microphones

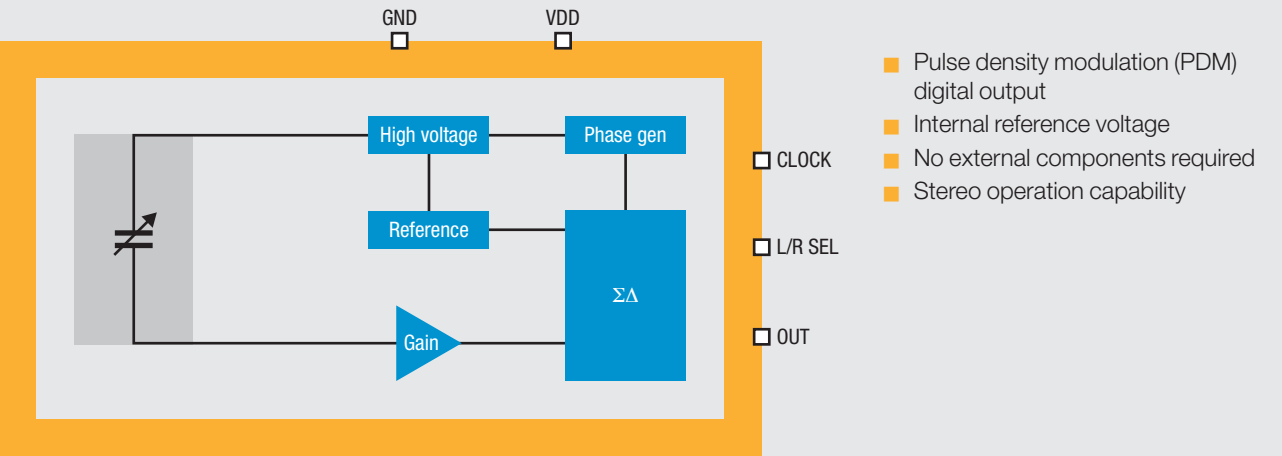
- Enhanced performances
  - High stability of sensitivity after reflow
  - Very stable unit-to-unit performance
- Consolidated micromachining technology
  - New applications enabled: stereo capture, noise cancellation, beam forming
- High shock resistance

### Targeted applications

- Mobile phones
- Laptops
- Digital cameras and camcorders
- Gaming
- Portable media players
- Hands free
- Tablets
- Headsets

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

### Diagram



### Device summary

	Top/bottom port	Package size (mm³)	Voltage (V)	SNR (dB)	Sensitivity (dB FS)	AOP (dB SPL)	Current (µA)
MP45DT01	Top	4.72 x 3.76 x 1	1.64 to 3.6	58	-26	120	650
MP34DB01	Bottom	3 x 4 x 1	1.64 to 3.6	62	-26	120	600

