

**ABSTRACT****MEMS LOUDSPEAKER WITH POSITION SENSOR**

A MEMS loudspeaker 1 for generating sound waves within the audible wavelength range with a circuit board 10, a membrane 2 opposite the circuit board 10 that can be deflected along a z-axis, at least one piezoelectric actuator 7 to deflect the membrane 2, and an electronic control unit 11 fully embedded in the circuit board 10 to control the actuator 7, for example an ASIC 40. The MEMS loudspeaker 1 has at least one position sensor 19 with which the control unit 11 can be provided with a sensor signal that depends on the membrane deflection. The control unit is executed to control the actuator in a regulated way based on the sensor signal.

Fig.1