Circular Piezoelectric Accelerometer for High-Bandwidth Applications (2009)

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Abstract

An uniaxial bulk-micromachined piezoelectric MEMS accelerometer intended for high bandwidth application is fabricated and characterized. A circular seismic mass (radius = 1200 µm) is suspended by a 20 µm thick annular siliconmembrane (radius = 1800 µm). A 24 µm PZT screen printed thick film is used as the sensing material on top of the silicon membrane. Accelerations in the out of plane direction induce a force on the seismic mass bending the membrane and a potential difference is measured in the out of plane direction of the stressed PZT. A resonance frequency of 23.50 kHz, a charge sensitivity of 0.23 pC/g and a voltage sensitivity of 0.24 mV/g are measured.

View the full study here:
Circular Piezoelectric Accelerometer for High-Bandwidth Applications

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