

ABSTRACT

Z-AXIS ACCELEROMETER

An accelerometer design is described. It operates by measuring a change in capacitance when one plate is fixed and one is mobile (free to accelerate). Unlike prior art designs where such changes are caused by variations in the plate separation distance, in the design of the present invention the plate separation distance is fixed, it being the effective plate area that changes with acceleration. A key feature is that the basic unit is a pair of capacitors. The fixed plates in each case are at the same relative height but the mobile plates are offset relative to the fixed plates, one mobile plate somewhat higher than its fixed plate with the other mobile plate being somewhat lower. Then, when the mobile plates move (in the same direction), one capacitor increases in value while the other decreases by the same amount. This differential design renders the device insensitive to sources of systematic error such as temperature changes. A process for manufacturing the design is described.

(FIGURE 2 IS SUGGESTED FOR PUBLICATION)