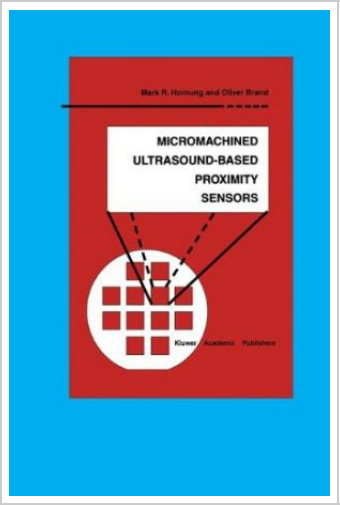

Micromachined Ultrasound-Based Proximity Sensors (Hardback)

By Mark R. Hornung, Oliver Brand

Springer, Netherlands, 1999. Hardback. Condition: New. 1999 ed.. Language: English . Brand New Book ***** Print on Demand *****. Micromachined Ultrasound-Based Proximity Sensors presents a packaged ultrasound microsystem for object detection and distance metering based on micromachined silicon transducer elements. It describes the characterization, optimization and the long-term stability of silicon membrane resonators as well as appropriate packaging for ultrasound microsystems. Micromachined Ultrasound-Based Proximity Sensors describes a cost-effective approach to the realization of a micro electro mechanical system (MEMS). The micromachined silicon transducer elements were fabricated using industrial IC technology combined with standard silicon micromachining techniques. Additionally, this approach allows the cointegration of the driving and read-out circuitry. To ensure the industrial applicability of the fabricated transducer elements intensive long-term stability and reliability tests were performed under various environmental conditions such as high temperature and humidity. Great effort was undertaken to investigate the packaging and housing of the ultrasound system, which mainly determine the success or failure of an industrial microsystem. A low-stress mounting of the transducer element minimizes thermomechanical stress influences. The developed housing not only protects the silicon chip but also improves the acoustic performance of the transducer elements. The developed ultrasound proximity sensor system can determine object...

Reviews

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