Abstracts

Low TB radio SAW sensors incorporating chirped transducers and reflectors for wireless pressure sensing applications

T. Pankratz, H. Scherr, L. Reindl, C.C.W. Ruppel and R. Weigel. "Low TB radio SAW sensors incorporating chirped transducers and reflectors for wireless pressure sensing applications." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 845-848.

We report on the design and performance of two basic SAW delay line structures developed for a wireless pressure sensing system operating at 434 MHz. The pressure sensor has been fabricated in all-quartz-package (AQP) technology with the SAW structures being placed on a diaphragm inside the hermetically sealed cavity. Both SAW structures show a linear phase although they both incorporate chirped SAW components for enhancing the sensor sensitivity. They have low time-bandwidth (TB) products of 2 and 11, respectively. We attained an improvement of the sensor sensitivity by factors of up to 20 compared to sensors employing non-dispersive SAW components.

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