Abstracts

Experimental Distinction Between Crossed-Field and In-Line Three-Port Circuit Models for Interdigital Transducers (Short Papers)

W.R. Smith. "Experimental Distinction Between Crossed-Field and In-Line Three-Port Circuit Models for Interdigital Transducers (Short Papers)." 1974 Transactions on Microwave Theory and Techniques 22.11 (Nov. 1974 [T-MTT]): 960-964.

The crossed-field and in-line Mason circuit models for interdigital surface-wave transducers give opposite predictions for the dependence of acoustic reflection coefficients on electric load resistance for purely resistive loads. Experiments described herein show that the crossed-field model correctly describes the reflections for YX quartz, ST-X quartz, and YZ lithium niobate substrates. A low-resistance load minimizes reflections for transducers with double electrodes operating at the fundamental synchronous frequency. For single electrode transducers, optimum reflection suppression may call for a load resistance comparable to the transducer impedance.

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