Abstracts

Reflection and Amplification of Acoustic Surface Waves by Interdigital Transducers with Active Circuit Loading

A.J. Bahr. "Reflection and Amplification of Acoustic Surface Waves by Interdigital Transducers with Active Circuit Loading." 1970 Transactions on Microwave Theory and Techniques 18.9 (Sep. 1970 [T-MTT]): 642-647.

It has been shown that when the reactance at the electrical port of an interdigital surface-wave transducer is tuned out, near-perfect reflection of acoustic surface waves can be obtained at either acoustic port. An inverted common-collector (ICC) transistor circuit can be used to accomplish this tuning and simultaneously generate a negative resistance that can be used to provide reflection and transmission gain for the surface waves. Some theoretical and experimental results for such a situation in the case of surface waves propagating in the Z direction on Y-cut LiNbO/sub 3/ are presented. In particular, electrically controlled variable (digital) time delay has been demonstrated using this technique.

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