Abstracts

Surface Acoustic Wave Multistrip Components and Their Applications

F.G. Marshall, C.O. Newton and E.G.S. Paige. "Surface Acoustic Wave Multistrip Components and Their Applications." 1973 Transactions on Microwave Theory and Techniques 21.4 (Apr. 1973 [T-MTT] (Special Issue on Microwave Acoustic Signal Processing)): 216-225.

The multistrip coupler is a directional coupler which operates on freely propagating surface acoustic waves with broad bandwidth and low loss. The applications of simple multistrip couplers with straight strips are discussed together with descriptions and properties of a family of multistrip components that can perform particular operations. Stepped couplers can perform the function of collinear beamwidth compression and a surface-wave "magic T" may be constructed. Bent, U-shaped, and J-shaped structures are considered that may redirect or reflect acoustic beams, and results are presented for a multistrip unidirectional transducer. Complex acoustic circuits may be built up using these elements. A beam may be reflected and stepped to the side by one track width, and both directions of a delay line may be used sequentially to double its capacity. The spurious triple transit signal of a delay line is shown to be virtually eliminated at the expense of an extra 3-dB single transit loss.

❑ Return to main document.