Abstracts

Extended Phased Array Model for the Calculation of Mechanical Bulk Wave Excitation in SAW Reflectors

G. Muller, S. Herzinger, R. Weigel and P. Russer. "Extended Phased Array Model for the Calculation of Mechanical Bulk Wave Excitation in SAW Reflectors." 1994 MTT-S International Microwave Symposium Digest 94.2 (1994 Vol. II [MWSYM]): 933-936.

A new model for mechanical conversion of surface acoustic waves (SAWs) into bulk acoustic waves (BAWs) in SAW reflectors is presented. It is based on the far field computation of a bulk wave source distribution. These sources are derived from a one-dimensional P-Matrix formalism, which is known to be an accurate description of SAW propagation under metalic gratings. The model takes into account the anisotropy of the piezoelectric substrate and is not restricted to a specific acoustic wave type. Furthermore, arbitrary reflector geometries can be considered allowing for the modeling of finger width-weighted, position-weighted. and chirped reflectors which are increasingly used in low loss SAW Filters. By the use of our model, for the first time bulk wave losses at harmonic stop band frequencies can be predicted and characterized.

❑ Return to main document.