

Analysis of End Effects in SAW IDTs Using the Finite Difference Method

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For high-performance SAW filter design the variation of charge distribution along the IDT fingers needs to be evaluated accurately. In this work, the finite difference method was used to study the effects of transverse (along the length of the fingers) and longitudinal (along the propagation direction) variation in charge distribution on the acoustic admittance of the IDT. A comparison was made between a full three-dimensional analysis of SAW IDTs, which includes the effects of bus bars, and the 2-D approximation to the same IDT.

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