Abstracts

Transient Analysis of Nonuniform, High-Pass Transmission Lines

C.-W. Hsue and C.D. Hechtman. "Transient Analysis of Nonuniform, High-Pass Transmission Lines." 1990 Transactions on Microwave Theory and Techniques 38.8 (Aug. 1990 [T-MTT]): 1023-1030.

The transient behavior of nonuniform transmission lines is studied by investigating the step response of a cascaded multiple-section line. Both the first arriving wave and the transition ripple at the load end are examined in detail. We find that the characteristic impedances necessary for obtaining the maximum first arriving wave are the same as those of the conventional multiple-section quarter-wave transformer. The discrete characteristic impedances of the multiple-section line are then extended to a continuously varied impedance function of a tapered line. The high-pass characteristic of the tapered nonuniform line is verified with techniques in the frequency domain.

❑ Return to main document.