Abstracts

High temperature superconducting nonlinear transmission lines

G.M. Coutts, R.R. Mansour and S.K. Chaudhuri. "High temperature superconducting nonlinear transmission lines." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 665-668.

This paper introduces novel potential device applications based on the nonlinear phase shifting properties of high temperature superconductor (HTS) transmission lines. It demonstrates how the nonlinear characteristics of HTS materials can be used to build devices that improve the risetime of pulses. The nonlinear transmission line (NLTL) circuit layouts consist of a linear transmission periodically loaded with HTS stubs operating in the nonlinear region. Theoretical results are presented using a lumped-element SPICE model to verify the concept presented in this paper.

❑ Return to main document.