Abstracts

Mode-Matching Approach for Superconducting Planar Transmission Lines Including Finite Conductor Thickness

W. Heinrich. "Mode-Matching Approach for Superconducting Planar Transmission Lines Including Finite Conductor Thickness." 1991 Microwave and Guided Wave Letters 1.10 (Oct. 1991 [MGWL]): 294-296.

An analysis of superconducting planar transmission lines is presented. The full-wave mode-matching approach holds for arbitrary values of conductor thickness and does not involve approximations such as the skin-effect description or the resistive boundary condition. Results on phase constant and attenuation of a superconducting CPW are reported including both conductor-thickness dependence and frequency characteristics. The results demonstrate that the high-TC superconductor materials available to date greatly improve the performance of coplanar waveguides as used in mm-wave MMIC's.

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