Abstracts

Propagation Characteristics of Superconducting Microstrip Lines

S.-G. Mao, J.-Y. Ke and C.H. Chen. "Propagation Characteristics of Superconducting Microstrip Lines." 1996 Transactions on Microwave Theory and Techniques 44.1 (Jan. 1996 [T-MTT]): 33-39.

The modified spectral-domain approach is applied to study the propagation characteristics of high temperature superconducting microstrip lines whose signal strip and ground plane are of arbitrary thickness. In this study, numerical results for effective dielectric constant, attenuation constant, and strip current distribution are presented to discuss the effects due to frequency, temperature, strip thickness, and substrate loss tangent. In particular, the conductor and dielectric attenuation constants of superconducting microstrip line are depicted separately to discuss the mechanism of the line losses. A comparison with published theoretical and experimental results is also included to check the accuracy of the new approach's results.

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