Abstracts

Circuit Properties of Microwave Dielectric Resonators

A. Karp, H.J. Shaw and D.K. Winslow. "Circuit Properties of Microwave Dielectric Resonators." 1968 Transactions on Microwave Theory and Techniques 16.10 (Oct. 1968 [T-MTT]): 818-828.

The purpose of this paper is to present experimental data on the circuit properties of dielectric resonators which do not have conducting boundaries. The resonators are constructed of single-crystal rutile and strontium titanate, which, as has been shown by several authors, can form resonators of miniature size and high unloaded Q. We consider the lowest-order H mode, give measured values of resonant freqnency (for rectangular parallelepipeds), mechanical frequency tuning, control of coupling to microwave circuits, and discuss the measurement of, and typical values of, external Q of resonators mounted in waveguides. We also consider periodic propagating circuits consisting of linear arrays of mutually coupled resonators.

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