Abstracts

Frequency-tunable microwave dielectric resonator

Yu.M. Poplavko, Yu.V. Prokopenko, V.I. Molchanov and A. Dogan. "Frequency-tunable microwave dielectric resonator." 2001 Transactions on Microwave Theory and Techniques 49.6 (Jun. 2001, Part I [T-MTT]): 1020-1026.

A new type of tunable composite dielectric resonator (DR) has been designed, In the structure of this DR, a controllable insert was used to change the resonance frequency (f/sub 0/) in a wide spectral range, while preserving a high quality factor. The simplest of proposed resonance systems for obtaining f/sub 0/ control is a microwave DR crossed by an air slot, which is controlled by fast piezoelectric actuator. Analytical and experimental techniques were employed for optimization of the composite DR structure. It has been observed that this device can create a change up to 20%-25% in its resonance frequency.

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