Abstracts

Unloaded Q of Single Crystal Yttrium-Iron-Garnet Resonator as a Function of Frequency (Correspondence)

P.S. Carter, Jr. and C. Flammer. "Unloaded Q of Single Crystal Yttrium-Iron-Garnet Resonator as a Function of Frequency (Correspondence)." 1960 Transactions on Microwave Theory and Techniques 8.5 (Sep. 1960 [T-MTT]): 570-571.

The practical feasibility of constructing magnetically tunable broad-tuning range microwave filters using single crystal yttriumiron-garnet resonators was demonstrated in a recent paper. Experimental results were presented on one- and two- resonator filters which can be tuned by varying a dc magnetic field bias over a full waveguide bandwidth and greater, at the same time maintaining an insertion loss performance which is comparable to mechanically-tuned cavity filters. The crucial parameter of the resonant elements in a band-pass filter is the unloaded Q, Q/sub u/. With a spherical single crystal of yttrium-iron-garnet the Q/sub u/ decreases with frequency below X-band frequencies reaching very low values at frequencies around 2000 Mc.

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