Abstracts

Conductor-Loss Limited Stripline Resonator and Filters (Short Papers)

C.-Y. Chi and G.M. Rebeiz. "Conductor-Loss Limited Stripline Resonator and Filters (Short Papers)." 1996 Transactions on Microwave Theory and Techniques 44.4 (Apr. 1996 [T-MTT]): 626-630.

We report on stripline resonators on thin dielectric membranes that show dispersion-free, conductor-loss limited performance at 13.5 GHz, 27.3 GHz, and 39.6 GHz. The unloaded-Q (Q/sub u/) of the resonators increases as /spl rudic/f with frequency and is measured to be 386 at 27 GHz. The measured results agree well with a new conformal mapping analysis. The stripline resonators are used in a micromachined state-of-the-art planar interdigitated bandpass filter at K-band frequencies. Excellent agreement has been achieved between the microwave model at 850 MHz and the 20 GHz filter. The micromachined filter exhibits a passband return loss better than -15 dB and a conductor-loss limited 1.7 dB port-to-port insertion loss (including input/output CPW line loss) at 20.3 GHz.

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