

The Coplanar Waveguide-Fed Electronically Tunable Slotline Ring Resonator

J.A. Navarro, L. Fan and K. Chang. "The Coplanar Waveguide-Fed Electronically Tunable Slotline Ring Resonator." 1992 MTT-S International Microwave Symposium Digest 92.2 (1992 Vol. II [MWSYM]): 951-954.

A coplanar waveguide (CPW)-fed slotline ring resonator has been developed and integrated with varactor diodes to create an electronically tunable planar resonator. The resonator can be electronically tuned over a 23% bandwidth from 3.03 to 3.83 GHz with a 4.5 ± 1.5 dB variation in insertion loss. The resonator is truly planar offering ground planes and center conductor on one side of the substrate which allows easy series or shunt insertion of devices. Monolithic implementation can be accomplished without via holes to ground devices which should reduce processing complexity and increase yields.

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