

Abstracts

A Broadband VCO Using Dielectric Resonators

P.C. Kandpal and C. Ho. "A Broadband VCO Using Dielectric Resonators." 1988 MTT-S International Microwave Symposium Digest 88.2 (1988 Vol. II [MWSYM]): 609-612.

A novel approach for obtaining broadband negative resistance in designing 1-port oscillators is described. The circuit uses a varactor in the feedback path to obtain a variable reactance for maximizing the negative resistance. The concept is demonstrated by designing and fabricating a circuit that oscillates in the 3.5-to 6.5-GHz band by only replacing the dielectric resonator. The technique will be useful in building broadband sources and also in MMIC technology as a tool for electrically tweaking the circuits.

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