Abstracts

A 94 GHz Low Noise GaAs FET Oscillator Using Whispering-Gallery Dielectric Resonator Modes and a New Push-Push Configuration Reducing 1/f Converted Noise

L.A. Bermudez, P. Guillon, J. Obregon and A. Bert. "A 94 GHz Low Noise GaAs FET Oscillator Using Whispering-Gallery Dielectric Resonator Modes and a New Push-Push Configuration Reducing 1/f Converted Noise." 1988 MTT-S International Microwave Symposium Digest 88.1 (1988 Vol. I [MWSYM]): 481-484.

In this work we present results obtained in the design of a 47-94 GHz GaAs MESFET oscillator-doubler using a dielectric resonator. A new push-push configuration was used for the generation of fundamental frequency at 47 GHz in the drain at the output. This new topology allows build noiseless oscillators-doublers. As a resonant circuit at fundamental frequency we use, in a first version, the conventional TE/sub 01delta/ mode of cylindrical dielectric resonator and in a second version we use a whispering-gallery mode of a planar dielectric resonator. The results obtained show the potential utilization of: GaAs MESFET and whispering-gallery mode of dielectric resonator for the conception of millimeter-wave sources with low-noise and low-power requirements.

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