Abstracts

Ultra-High-Speed GaAs Monolithic Prescaler and Phase Frequency Comparator IC

K. Osafune and K. Ohwada. "Ultra-High-Speed GaAs Monolithic Prescaler and Phase Frequency Comparator IC." 1986 Transactions on Microwave Theory and Techniques 34.7 (Jul. 1986 [T-MTT]): 786-790.

A high-speed, low-power prescaler and phase frequency comparator (PFC) IC for a phase-lock stable oscillator was designed and fabricated on a single chip using GaAs MESFET BFL circuitry. The gate width of the master-slave T-type flip-flops used in designing the 1/32 frequency divider prescaler was determined by circuit simulations. The fabricated 1/32 prescaler operated up to 8.0 GHz while the fabricated monolithic prescaler and PFC IC performed stable division, and phase and frequency comparison at input frequencies up to 4.8 GHz with a chip power dissipation of only 715 mW.

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