Abstracts

High-Speed and Low-Power GaAs Phase Frequency Comparator

K. Osafune, K. Ohwada and N. Kato. "High-Speed and Low-Power GaAs Phase Frequency Comparator." 1986 Transactions on Microwave Theory and Techniques 34.1 (Jan. 1986 [T-MTT]): 142-146.

A high-speed and low-power consumption phase frequency comparator (PFC) for a phase lock stable oscillator was designed and fabricated with a GaAs MESFET BFL circuit for the first time. The threshold voltage, gate width, and gate length of GaAs MESFET's in the PFC were determined by circuit simulations for a high-speed and low-power operation. The fabrication process used buried p-layer SAINT-FET's with 0.5-µm gate length. The fabricated PFC performed stable phase and frequency comparison up to 600 MHz at only 60 mW. Using dislocation-free wafers, the fabrication yield in the laboratory was more than 90 percent.

❑ Return to main document.