Abstracts

67-GHz static frequency divider using 0.2-/spl mu/m self-aligned SiGe HBTs (Jan. 2001 [T-MTT])

K. Washio, R. Hayami, E. Ohue, K. Oda, M. Tanabe, H. Shimamoto and M. Kondo. "67-GHz static frequency divider using 0.2-/spl mu/m self-aligned SiGe HBTs." 2001 Transactions on Microwave Theory and Techniques 49.1 (Jan. 2001 [T-MTT] (Mini-Special Issue on 2000 Radio-Frequency Integrated Circuits (RFIC) Conference and Automatic Radio Frequency Techniques Group (ARFTG) Meeting)): 3-8.

A 67-GHz 1/4 static frequency divider using 0.2-/spl mu/m self-aligned selective-epitaxial-growth SiGe heterojunction bipolar transistors, with a 122-GHz cutoff frequency, a 163-GHz maximum oscillation frequency, and an average emitter coupled logic gate delay time of 5.65 ps, was developed. The pretracking master-slave toggle flip-flop (MS-TFF) of the divider increases the maximum operating frequency to about 15% higher than that of a conventional MS-TFF, yet the power consumption of the divider is 175 mW, which is 1/5 that of comparable dividers, at a supply voltage of -5.2 V.

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