Abstracts

Si and SiGe millimeter-wave integrated circuits

P. Russer. "Si and SiGe millimeter-wave integrated circuits." 1998 Transactions on Microwave Theory and Techniques 46.5 (May 1998, Part II [T-MTT] (Special Issue on Microwave Circuits on Silicon Substrates)): 590-603.

Monolithic integrated millimeter-wave circuits based on silicon and SiGe are emerging as an attractive option in the field of millimeter-wave communications and millimeter-wave sensors. The combination of active devices with passive planar structures, including also antenna elements, allows single-chip realizations of complete millimeter-wave front-ends. This paper reviews the state-of-the-art silicon- and SiGe-based monolithic integrated millimeter-wave circuits. The technological background as well as active and nonlinear devices and passive circuit structures suitable for silicon- and SiGe-based monolithic integrated millimeter-wave circuits are discussed. Examples of such integrated circuits and first systems applications are also presented.

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