Abstracts

Silicon Millimeter-Wave Circuits for Receivers and Transmitters

J. Buechler, E. Kasper, J.F. Luy, P. Russer and K.M. Strohm. "Silicon Millimeter-Wave Circuits for Receivers and Transmitters." 1988 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 88.1 (1988 [MCS]): 67-70.

For the 90 GHz band we have fabricated a monolithic integrated Schottky diode receiver on a highly insulating silicon substrate. The receiver consists of the monolithic Schottky diode and a planar antenna structure on one silicon chip. The receiver sensitivity is 65 µWcm/sup -2/. The receiver antenna half-power beamwidth is 23° and the side lobe attenuation is 12 dB. Also new results on planar W-band oscillators hybrid integrated on highly insulating silicon substrates with double drift region IMPATT diodes are presented. The CW oscillator output power is greater than 20 mW and the efficiency is more than 1 percent.

❑ Return to main document.