Abstracts

Quasi-Optical HEMT and MESFET Self-Oscillating Mixers

V.D. Hwang and T. Itoh. "Quasi-Optical HEMT and MESFET Self-Oscillating Mixers." 1988 Transactions on Microwave Theory and Techniques 36.12 (Dec. 1988 [T-MTT] (1988 Symposium Issue)): 1701-1705.

Planar quasi-optical receivers that compactly integrate a coupled slot antenna and a HEMT or MESFET balanced self-oscillating mixer on the same substrate are developed for applications in microwave and millimeter-wave receiver arrays. Both the HEMT and the MESFET circuit are designed and demonstrated at X-band. The HEMT circuit exhibits an isotropic conversion gain of 4.5 dB and a noise figure of 6.5 dB at X-band. The isotropic conversion gain of the HEMT circuit is 7.5 dB higher than the mixer diode circuit previously reported.

❑ Return to main document.