Abstracts

Noise Output and Noise Figure of Biased Millimeter-Wave Detector Diodes

K. Ishii and A.L. Brault. "Noise Output and Noise Figure of Biased Millimeter-Wave Detector Diodes." 1962 Transactions on Microwave Theory and Techniques 10.4 (Jul. 1962 [T-MTT]): 258-262.

The behavior of a dc biased millimeter-wave detector diode was investigated by theoretical analysis and experimental measurement. The results indicate that because of the nonlinearity of the diode, shot noise appearing across the diode increases with dc biasing. For the same reason conversion gain of the detector increases with bias. The increase in gain is faster than the increase in noise for a certain range of bias current. Thus the noise figure of the diode detector and its minimum detectable signal are decreased.

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