Abstracts

A novel FET model including an illumination intensity parameter for simulation of optically controlled millimeter-wave oscillators

S. Kawasaki, H. Shiomi and K. Matsugatani. "A novel FET model including an illumination intensity parameter for simulation of optically controlled millimeter-wave oscillators." 1998 Transactions on Microwave Theory and Techniques 46.6 (Jun. 1998 [T-MTT]): 820-828.

This paper demonstrates an illuminated FET model including an illumination-intensity parameter for simulation of optical characteristics of microwave and millimeter wave integrated circuits (MMIC's). Modeling for an illuminated GaAs MESFET and an InP high electron-mobility transistor (HEMT), and analysis and experimental results from optically controlled microwave and millimeter-wave hybrid integrated circuit (HIC) and MMIC oscillators are discussed. The proposed illuminated FET model was able to explain the photoresponse of both the GaAs MESFET and the InP HEMT, and the photooperation of their circuits.

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