Abstracts

A Technique for Correction of Parasitic Capacitance on Microwave f/sub t/ Measurements of MESFET and HEMT Devices (Short Papers)

M. Feng, C.L. Lau and C. Ito. "A Technique for Correction of Parasitic Capacitance on Microwave f/sub t/ Measurements of MESFET and HEMT Devices (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.11 (Nov. 1991 [T-MTT]): 1880-1882.

The current gain cutoff frequency, f/sub t/, has become a critical figure-of-merit for evaluating performance of MESFET and HEMT devices. The f/sub t/ is related to a capacitance parameter, C/sub tot/, through the equation f/sub t/= Gm/(2piC/sub tot/). This capacitance, however, includes a parasitic component primarily due to contact pad and device geometry as well as a parasitic component due to Rd, Rs and Rds. This paper describes a technique which determines this parasitic capacitance for FET-type devices. Consistently accurate corrections can then be made to reported f/sub t/ values. Ion implanted InGaAs MESFETs with 0.25 µ gate lengths have achieved 120 GHz f/sub t/, before correction and 151 GHz f/sub t/ after correction.

❑ Return to main document.