Abstracts

The Effects of P Co-Implants Upon the RF Performance of Ion-Implanted GaAs Power FETs

T.A. Winslow and R.J. Trew. "The Effects of P Co-Implants Upon the RF Performance of Ion-Implanted GaAs Power FETs." 1989 MTT-S International Microwave Symposium Digest 89.3 (1989 Vol. III [MWSYM]): 1019-1022.

The use of P-type co-implants to improve GaAs MESFET performance has been examined by use of a physically based, analytic large-signal device model. The P dopants are shown to affect RF performance by altering both the shape and conduction characteristics of the channel. The P dopants improve channel charge confinement, but reduce the electron transport characteristics. RF performance degradation due to the reduced mobility and saturation velocity can be compensated by increasing the drain bias, since BV/sub gd/ is increased. The net result is that improved RF performance is obtained compared to similar devices fabricated without the P co-implants. The model is verified by comparison with measured RF data of an X-band ITT-GTC MSAG MESFET.

❑ Return to main document.