Abstracts

Microwave Characterization of Sub-Micron n- and p- Channel MOSFETs Fabricated with Thin Film Silicon-On-Sapphire

C.E. Chang, P.M. Asbeck, P.R. de la Houssaye, G. Imthurn, G.A. Garcia and I. Lagnado. "Microwave Characterization of Sub-Micron n- and p- Channel MOSFETs Fabricated with Thin Film Silicon-On-Sapphire." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 405-408.

Microwave characteristics are reported for n- and p- MOS transistors fabricated with thin-film Silicon-on-Sapphire technology. The gates were defined with I-line optical lithography, and ranged down to 0.5 µm (drawn dimension). The f/sub t/ values of the transistors reach 22 GHz for the n-channel structures and 21 GHz for the p-channel devices. The PMOS results are significantly higher than found with other Si or III-V technologies, and can potentially lead to high performance complementary microwave circuits. Small signal transistor models are similar to the ones for GaAs FETs. Dependence of model parameters on gate length were determined.

❑ Return to main document.