Abstracts

Field Theory Analysis of Slow-Wave Propagation on Silicon Based Coplanar MIS Transmission Lines

S. Chen, R. Vahldieck, J. Huang and M. Kim. "Field Theory Analysis of Slow-Wave Propagation on Silicon Based Coplanar MIS Transmission Lines." 1996 MTT-S International Microwave Symposium Digest 96.1 (1996 Vol. I [MWSYM]): 291-294.

This paper presents a rigorous field theory analysis of the slow-wave propagation characteristics on semiconductor based coplanar waveguide MIS transmission lines with ion-implantation doping profile by using the frequency-domain TLM method (FDTLM). Two types of coplanar MIS transmission line structures, namely bulk silicon and semiconductor-on-insulator (SOI) with a Gaussian profile of the doping depth and optimized lateral width of the doping region have been investigated. It was found that both structures exhibit much better slow-wave characteristics at lower losses than traditional thin-film MIS transmission lines.

❑ Return to main document.