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Abstract:The THz SPICE model is capable of simulating field effect transistors (FETs) in a plasmonic mode of operation at frequencies far above the device cutoff frequency. The model uses a distributed RC or RLC network and is validated by comparison of the simulation results with our analytical model of the plasmonic detector, and with measured results. It also allows us to determine the operation regimes, where conventional SPICE models are still applicable. The applicability of this model for THz sensing applications is demonstrated by simulating the plasmonic THz FET sensor with on-chip amplifier. © 2001-2012 IEEE.
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