Abstracts

Capacitance topology for high frequency modeling of bipolar transistors

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The standard SPICE Gummel-Poon model for bipolar transistors in the case of current crowding is inaccurate at high frequencies primarily due to the position of the capacitances. An improved distributed bipolar transistor model is developed, with fractions of both the depletion and the diffusion capacitances placed outside the base spreading resistance and the transistor junctions. The model is contrasted with the standard model by comparing the high frequency characteristics for an HBT.

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