

SYMMETRIC HEMT DRAIN CURRENT MODEL FOR INTERMODULATION DISTORTION PREDICTION

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ABSTRACT

A new large-signal HEMT drain current model is presented that accurately describes not only the AC gain and resistance of the device, but also their derivatives with respect to bias. This allows the accurate simulation of linear and nonlinear performance over bias. The model is scalable, and is shown to predict S-parameters, power compression characteristics and intermodulation distortion of devices and circuits over a range of frequencies, biases and device sizes.