Abstracts

Comparison of hybrid pi and Tee HBT circuit topologies and their relationship to large signal modeling

D.A. Teeter and W.R. Curtice. "Comparison of hybrid pi and Tee HBT circuit topologies and their relationship to large signal modeling." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 375-378.

Direct comparison between the HBT small signal Tee model and the hybrid pi topology is made to 100 GHz. It is shown that a one to one correspondence exists between the two topologies, but that some of the pi model parameters exhibit a frequency dependence with respect to the Tee model parameters. Using this analysis, an enhanced Gummel Poon large signal model has been developed which extends the model accuracy (usually up to mm-wave) by properly including collector current delay, self heating, and avalanche breakdown. A collection of measured versus modeled results are given.

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