Abstracts

An Approach to Determining an Equivalent Circuit for HEMT's

K. Shirakawa, H. Oikawa, T. Shimura, Y. Kawasaki, Y. Ohashi, T. Saito and Y. Daido. "An Approach to Determining an Equivalent Circuit for HEMT's." 1995 Transactions on Microwave Theory and Techniques 43.3 (Mar. 1995 [T-MTT]): 499-503.

A simple way to determine a small-signal equivalent circuit of High Electron Mobility Transistors (HEMT's) is proposed. Intrinsic elements determined by a conventional analytical parameter transformation technique are described as functions of extrinsic elements. Assuming that the equivalent circuit composed of lumped elements is valid over the whole frequency range of the measurements, the extrinsic elements are iteratively determined using the variance of the intrinsic elements as an optimization criterion. Measurements of S-parameters up to 62.5 GHz at more than 100 different bias points confirmed that the HEMT equivalent circuit is consistent for all bias points.

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