

## Direct Calculation of the HBT Equivalent Circuit from Measured S-Parameters

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*D.R. Pehlke and D. Pavlidis. "Direct Calculation of the HBT Equivalent Circuit from Measured S-Parameters." 1992 MTT-S International Microwave Symposium Digest 92.2 (1992 Vol. II [MWSYM]): 735-738.*

A new approach for directly calculating the HBT equivalent circuit from measured S-parameters is presented. Analytically derived rather than fitted solutions are obtained in this way. Extrinsic as well as intrinsic element values are computed without the use of special test structures or additional measurement steps. Bias dependent results for base resistance, collector resistance, base-collector capacitance, base transport factor, and base and collector transit times are discussed in detail.

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