Abstracts

Enhanced Cryogenic On-Wafer Techniques for Accurate IN/sub x/GA/sub 1-x/As HEMT Device Models

J. Laskar, R. Lai, J.J. Bautista, M. Hamai, M. Nishimoto, K.L. Tan, D.C. Streit, P.H. Liu, D.C. Lo and G.I. Ng. "Enhanced Cryogenic On-Wafer Techniques for Accurate IN/sub x/GA/sub 1-x/As HEMT Device Models." 1994 MTT-S International Microwave Symposium Digest 94.3 (1994 Vol. III [MWSYM]): 1485-1488.

An accurate on-wafer cryogenic measurement system is presented for empirical millimeter-wave device studies of In/sub x/Ga/sub 1-x/As HEMTs. Multi-line TRL calibrations are performed to provide traceable baseline results for cryogenic s-parameter measurements. This technique is then applied to develop wide frequency band small-signal models for HEMTs with In channel composition varied from 22% to 70%.

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