Abstracts

Design and Process Sensitivity of a Two-Stage 6--18-GHz Monolithic Feedback Amplifier (Dec. 1985 [T-MTT])

J.M. Beall, S.R. Nelson and R.E. Williams. "Design and Process Sensitivity of a Two-Stage 6--18-GHz Monolithic Feedback Amplifier (Dec. 1985 [T-MTT])." 1985 Transactions on Microwave Theory and Techniques 33.12 (Dec. 1985 [T-MTT] (1985 Symposium Issue)): 1566-1571.

The design of a 6-18-GHz two-stage monolithic feedback amplifier is discussed, and the critical process and FET parameters are identified. Variations in circuit performance experienced during a pilot production run are correlated with the predictions of a sensitivity analysis. Five circuit model parameters were selected for study substrate height, GaAs sheet resistance, gate-source capacitance, transconductance, and drain-source resistance. Measured results show the importance of substrate height and sheet resistance in the control of gain flatness. An example on-slice RF performance distribution is presented, showing the suitability of the circuit and fabrication process for high-volume production.

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