Abstracts

High-Efficiency Low Adjacent Channel Leakage GaAs Power MMIC for 1.9 GHz Digital Cordless Phones

T. Yokoyama, T. Kunihisa, H. Fujimoto, H. Takehara, K. Ishida, H. Ikeda and O. Ishikawa. "High-Efficiency Low Adjacent Channel Leakage GaAs Power MMIC for 1.9 GHz Digital Cordless Phones." 1994 Transactions on Microwave Theory and Techniques 42.12 (Dec. 1994, Part II [T-MTT] (1994 Symposium Issue)): 2623-2628.

A high-efficiency low adjacent channel leakage GaAs power MMIC has been developed for 1.9 GHz digital cordless phones. In this paper, we report on the fabrication of highly efficient GaAs MESFET's, the design for low distortion, and the performance of this MMIC. Two power MESFET's and input, interstage, and output matching circuits were integrated in a very small chip size of 1.0 mm x 1.5 mm. This MMIC achieved an output power of 22 dBm at 1.9 GHz with high power added efficiency of 40.5% and low adjacent channel leakage power of -56 dBc under the low operating voltage of 3.0 V. This result represents one of the highest efficiencies that have been reported. This MMIC has a promising future for 1.9 GHz digital cordless phone applications.

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