Abstracts

A GaAs MCM Power Amplifier of 3.6 V Operation with High Efficiency of 49% for 0.9 GHz Digital Cellular Phone Systems

K. Tateoka, A. Sugimura, H. Furukawa, N. Yoshikawa and K. Kanazawa. "A GaAs MCM Power Amplifier of 3.6 V Operation with High Efficiency of 49% for 0.9 GHz Digital Cellular Phone Systems." 1995 Transactions on Microwave Theory and Techniques 43.11 (Nov. 1995 [T-MTT]): 2539-2542.

An Extremely small GaAs PA (power amplifier) has been implemented using AIN multilayer MCM for 0.9 GHz digital cellular phones. The present PA exhibited high efficiency of 49% with drain supply voltage as low as 3.6V. This PA was designed to provide matching circuits with the maximum gain at the input side and the minimum intermodulation distortion at the output side. Nonlinear simulation result verifies that this matching condition provides the lowest pi/4-shift QPSK distortion and indicates that the phase shift of the amplifier is mainly caused by source-drain resistance.

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