Abstracts

Manufacturable and Reliable Millimeter-Wave HJFET MMIC Technology Using Novel 0.15 µm MoTiPtAu Gates

Y. Hori, K. Onda, M. Funabashi, H. Mizutani, K. Maruhashi, A. Fujihara, K. Hosoya, T. Inoue and M. Kuzuhara. "Manufacturable and Reliable Millimeter-Wave HJFET MMIC Technology Using Novel 0.15 µm MoTiPtAu Gates." 1995 MTT-S International Microwave Symposium Digest 95.2 (1995 Vol. II [MWSYM]): 431-434.

This paper describes a manufacturable and reliable millimeter-wave heterojunction FET (HJFET) MMIC technology, in which a novel 0.15 µm MoTiPtAu T-shaped gate has been successfully employed. Excellent DC and RF device characteristics, including Imax of ~600mA/mm, BVgd of >10V and Fmax of ~200GHz, were confirmed. High temperature DC-bias tests predict an MTTF of 1.5x10/sup 7/ hours at a channel temperature of 150°C. The 2-stage MMIC amplifier, fabricated using the developed technology, exhibited a 69.5mW output power with 14.4% power-added efficiency at 56GHz with good uniformity.

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