Abstracts

High gain and high efficiency K-band power HEMT with WSi/Au T-shaped gate

T. Kunii, N. Yoshida, S. Miyakuni, T. Shiga, T. Oku, T. Kitano, J. Udomoto, M. Komaru, A. Inoue, S. Tsuji, N. Tanino, T. Ishikawa and Y. Mitsui. "High gain and high efficiency K-band power HEMT with WSi/Au T-shaped gate." 1997 MTT-S International Microwave Symposium Digest 3. (1997 Vol. III [MWSYM]): 1187-1190.

We have developed WSi/Au T-shaped buried gate pseudomorphic HEMT with the good uniformity of recess current by using a selective etching process and with a high off-state break down voltage of over 19 V. A 1.4 W output power has been obtained with a power-added efficiency of 55.6% and an associated gain of 9.2 dB under high voltage operation of Vd=10 V at 18 GHz. This is the highest gain and efficiency achieved by a single FET chip with over a watt output power at this frequency.

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