Abstracts

X-Band Noise Parameters of HEMT Devices at 300K and 12.5K

S. Weinreb and M. Pospieszalski. "X-Band Noise Parameters of HEMT Devices at 300K and 12.5K." 1985 MTT-S International Microwave Symposium Digest 85.1 (1985 [MWSYM]): 539-542.

The four noise parameters of room-temperature and cryogenically-cooled HEMT's have been investigated. Two previously described structures, the quantum- well HEMT and the high-transconductance HEMT have been tested and compared with noise parameters of a MESFET (NE67383). It was demonstrated that the cryogenic noise performance of a HEMT is dependent on light illumination and may be or may not be better than that of a MESFET, depending on the device structure. The minimum noise temperature of T/sub min/ = 10.5 ± 1.5K of the quantum-well HEMT, illuminated with light, measured at f = 8.4 GHz and T/sub a/ = 12.5K is the best yet published for field effect transistors.

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