Abstracts

W-Band Monolithic Low Noise Amplifiers for Advanced Microwave Scanning Radiometer

Y. Itoh, K. Nakahara, T. Sakura, N. Yoshida, T. Katoh, T. Takagi and Y. Ito. "W-Band Monolithic Low Noise Amplifiers for Advanced Microwave Scanning Radiometer." 1995 Microwave and Guided Wave Letters 5.2 (Feb. 1995 [MGWL]): 59-61.

Monolithic low noise amplifiers using 0.15-µm AlGaAs/InGaAs/GaAs pseudomorphic HEMTs with a passivation film have been developed at W-band for the Advanced Microwave Scanning Radiometer. A two-stage monolithic amplifier has achieved a noise figure of 3.4 dB with a small signal gain of 8.7 dB at 91 GHz. A six-stage amplifier cascading three two-stage monolithic amplifier chips has achieved a noise figure of 4.2 dB with a small signal gain of 29.7 dB at 91 GHz, Taking into account the minimum noise figure of 2.5 dB with an associated gain of 4.3 dB of 0.15 x 60 µm² PHEMTs at 90 GHz, these results demonstrate that a good noise matching has been successfully achieved.

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