Abstracts

A V-Band, High Gain, Low Noise, Monolithic PHEMT Amplifier Mounted on a Small Hermetically Sealed Metal Package

Y. Itoh, Y. Horiie, K. Nakahara, N. Yoshida, T. Katoh and T. Takagi. "A V-Band, High Gain, Low Noise, Monolithic PHEMT Amplifier Mounted on a Small Hermetically Sealed Metal Package." 1995 Microwave and Guided Wave Letters 5.2 (Feb. 1995 [MGWL]): 48-49.

V-band, high gain, low noise, monolithic amplifiers based on 0.I5-µm AIGaAs/InGaAs/GaAs pseudomorphic HEMT's have been developed. The four-stage amplifier has been assembled on a small hermetically sealed metal package and has achieved a noise figure of 3 dB with a small signal gain of 42.2 dB at 51 GHz. The overall amplifier measured 14.2 x 20.0 x 2.3 mm^3. The two-stage amplifier has been mounted on a carrier-type fixture and has achieved a noise figure of 2.5 dB with a small signal gain of 20.4 dB at 51.5 GHz. These results represent the best noise figure and the highest gain ever achieved by a monolithic amplifier using GaAs- or InP-based HEMT devices at these frequencies.

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