Abstracts

A Low Noise, High Gain Q-Band Monolithic HEMT Receiver (1994 [MCS])

M.V. Aust, B. Allen, G.S. Dow, R. Kasody, M. Biedenbender and N. Wang. "A Low Noise, High Gain Q-Band Monolithic HEMT Receiver (1994 [MCS])." 1994 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 94.1 (1994 [MCS]): 217-220.

A fully integrated MMIC receiver for Q-band was designed and fabricated using a 0.2 µm pseudomorphic lnGaAs HEMT technology process. This incorporates 3 microcells into a single macrocell. It contains a front end LNA which consists of a four stage balanced HEMT amplifier, a double-balanced HEMT diode mixer, and a 2 stage HEMT IF amplifier. This forms a highly compact millimeter MMIC receiver. Better than 30 dB conversion gain with a Noise figure of 3.5 dB for the downconverter is achieved. This chip operates from a +3 Vdc and draws 85 mA. Total chip size is 5.0 mm x 3.0 mm.

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