Abstracts

GaAs Monolithic Lumped Element Multistage Microwave Amplifier (1983 [MCS])

K.P. Weller, G.D. Robinson, A. Benavides and R.D. Fairman. "GaAs Monolithic Lumped Element Multistage Microwave Amplifier (1983 [MCS])." 1983 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 83.1 (1983 [MCS]): 100-104.

This paper reports on the successful development of a four stage, directly cascaded GaAs FET monolithic preamplifier chip realized using truly lumped elements for both RF and DC circuitry. The chip is designed to be entirely self-biased and contains all required DC circuitry on-chip for operation from a single drain supply. The design is based on a nominal 1 micron gate length interdigital FET geometry of planar construction. The device is fabricated using a selective ion implantation process. The finished die dimensions are 0.060 by 0.110 inch with a thickness of 0.015 inch. The chip provides a gain of over 20 dB in a 2 GHz band centered near 7 GHz. The noise figure achieved is 6 dB, the output power at 1 dB gain compression is typically +8 dBm, and the third order intermodulation intercept point is approximately +20 dBm.

❑ Return to main document.