Abstracts

Monolithic Indium Phosphide-Based HEMT Multioctave Distributed Amplifier

E. Sovero, D. Deakin, W.J. Ho, G.D. Robinson, C.W. Farley, J.A. Higgins and M.F. Chang. "Monolithic Indium Phosphide-Based HEMT Multioctave Distributed Amplifier." 1990 MTT-S International Microwave Symposium Digest 90.3 (1990 Vol. III [MWSYM]): 1085-1087.

The superior performance qualities of indium phosphide based High Electron Mobility Transistor (HEMT) structures has been established with discrete devices. In this paper, we report the first monolithic IC's made with this material system. Results are presented on a monolithic distributed amplifier with greater than 10 db gain from 2 to 30 GHz. At 14 GHz, the noise figure was 5.2 dB with 14 dB of associated gain. These circuits have all the necessary components for a high performance amplifier, including quarter micron EBL (Electron Beam Lithography) defined gates, MIM (Metal Insulator Metal) capacitors, air-bridge metal crossovers and plated-thru-substrate vias to the ground plane.

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