Abstracts

Monolithic 40-GHz 670-mW HBT Grid Amplifier

C.-M. Liu, E.A. Sovero, W.J. Ho, J.A. Higgins, M.P. De Lisio and D.B. Rutledge. "Monolithic 40-GHz 670-mW HBT Grid Amplifier." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 1123-1126.

A 36-element monolithic grid amplifier has been fabricated. The active elements are pairs of heterojunction-bipolar-transistors. Measurements show a peak gain of 5 dB at 40 GHz with a 3-dB bandwidth of 1.8 GHz (4.5%). Here we also report comparisons of patterns and tuning curves between the measurements and theory. The grid includes base stabilizing capacitors which result in a highly stable grid. The maximum saturated output power is 670 mW at 40 GHz with a peak power-added efficiency of 4%. This is the first report of power measurements on the monolithic quasi-optical amplifier.

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