Abstracts

Four-Watt 20-GHz Partial Monolithic Amplifier

R. Yarborough, P. Saunier, H.Q. Tserng, K. Salzman, B. Smith and D. Heston. "Four-Watt 20-GHz Partial Monolithic Amplifier." 1993 MTT-S International Microwave Symposium Digest 93.3 (1993 Vol. III [MWSYM]): 1381-1384.

A 4-watt power amplifier with 28-percent power-added efficiency at 20 GHz has been demonstrated using 0.25-µm heterostructure FET (HFET) device technology. The 4-watt, two-stage amplifier features a mostly monolithic approach with a portion of the input and output matching networks on alumina. The output matching network employs reactive matching elements on GaAs, followed by a Chebyshev coupled-line transformer/combiner on aIumina to achieve a low-impedance match with minimal loss. This paper presents discrete 0.25-µm HFET device results at 18 GHz and 20 GHz, as well as amplifier design and performance over a >3 GHz band.

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