Abstracts

X-Band Monolithic Power Amplifier Using Low Characteristic Impedance Thin-Film Microstrip Transformers

M. Gillick and I.D. Robertson. "X-Band Monolithic Power Amplifier Using Low Characteristic Impedance Thin-Film Microstrip Transformers." 1992 Microwave and Guided Wave Letters 2.8 (Aug. 1992 [MGWL]): 328-330.

A technique is introduced for matching monolithic power amplifiers by using short thin-film microstrip transformers with very low characteristic impedance. An X-band power FET amplifier has been successfully realized with this technique, using a standard GaAs foundry two-level metal process. The amplifier has achieved over 5.5-dB small-signal gain and an output power of 1 watt at a center frequency of 11.3 GHz. This new matching technique can greatly reduce the area of the matching networks compared with conventional microstrip techniques which rely on cluster matching and power dividing/combining.

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