Abstracts

A 4 to 25 GHz 0.5W Monolithic Lossy Match Amplifier

Y. Itoh, M. Nii, Y. Kohno, M. Mochizuki and T. Takagi. "A 4 to 25 GHz 0.5W Monolithic Lossy Match Amplifier." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 257-260.

A 4 to 25 GHz 0.5W monolithic lossy match amplifier has been developed. It employs a novel constant-resistance network and a parallel resonant circuit as pre-matching circuits in the design of input and output networks to make the input and output impedance of FETs purely resistive. In addition a quarter-wavelength impedance transformer having a low characteristic impedance is incorporated into the design of interstate networks to match the output impedance of driver FETs and the input impedance of power FETs over a wide band-width. With the use of these networks, a two-stage lossy match power amplifier has achieved a linear gain of 8.3 ± 2.8dB, a saturated output power of 27.7 ± 2.7dBm, and a drain efficiency of 15.3 ± 8.3% over 4 to 25 GHz.

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