Abstracts

0-40 GHz GaAs MESFET Distributed Baseband Amplifier IC's for High-Speed Optical Transmission

S. Kimura and Y. Imai. "0-40 GHz GaAs MESFET Distributed Baseband Amplifier IC's for High-Speed Optical Transmission." 1996 Transactions on Microwave Theory and Techniques 44.11 (Nov. 1996 [T-MTT]): 2076-2082.

We describe distributed amplifiers built using advanced circuit design techniques to improve gain and noise performance at low frequencies. Using these techniques, we have developed an amplifier IC with a 0-36 GHz bandwidth and a noise figure of 4 dB at low frequencies. This frequency range starting from 0 Hz makes it possible to use the IC as a baseband amplifier for SDH optical transmission systems and this noise figure is about 1 dB better than conventional distributed amplifiers. We also present another amplifier IC built using our loss compensation technique to improve high-frequency performance of the amplifier. This IC has a 0-44-GHz bandwidth, which is the widest among all reported GaAs MESFET baseband amplifiers.

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