Abstracts

GaAs FET Ultrabroad-Band Amplifiers for Gbit/s Data Rate Systems

K. Honjo and Y. Takayama. "GaAs FET Ultrabroad-Band Amplifiers for Gbit/s Data Rate Systems." 1981 Transactions on Microwave Theory and Techniques 29.7 (Jul. 1981 [T-MTT]): 629-636.

A novel ultrabroad-band amplifier configuration suitable for GaAs FET's has been developed. The developed amplifier circuit operates as a capacitor-resistor (C-R) coupled mnpfifier circuit in the low-frequency range in which |S/sub 21/| for the GaAs FET's is constant. It also operates as a lossless impedance matching circuit in the microwave frequency range in which |S/sub 21/| for the GaAs FET has a slop of approximately -6 dB/octave. Using this configuration technique, 800-kHz 9.5-GHz band (13.5 octaves), 8.6-dB gain GaAs FET amplifier modules have been realized. The amplifier module has 40-ps step response rise time. It also has low input and output VSWR. By cascading two-amplifier modules, 19-dB gain over the 800-kHz to 8.5-GHz range and 50-ps step response rise time were obtained. NF is lower than 8 dB over the 50-MHz to 6-GHz range.

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