Abstracts

Amplifier array for 12 parallel 10 Gb/s optical-fiber links fabricated in a SiGe production technology

A. Schild, H.-M. Rein, J. Mullrich, L. Altenhain, J. Blank and K. Schrodinger. "Amplifier array for 12 parallel 10 Gb/s optical-fiber links fabricated in a SiGe production technology." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 89-92.

A transimpedance amplifier array for 12 parallel optical-fiber channels each operating at 10 Gb/s is presented. It stands out for the following features: high gain (transimpedance 25 k/spl Omega/ in the limiting mode), high input sensitivity and wide input dynamic range (input current swing from 20 to 240 /spl mu/A/sub p-p/), constant output voltage swing (differential 0.5 V/sub p-p/ at 50 /spl Omega/ load) and low power consumption (1.4 W) at a single supply voltage (5 V). Each channel has its own offset current control circuit. To the best of the authors' knowledge, the total throughput of 12 /spl times/ 10 Gb/s = 120 Gb/s is the highest value reported for a single-chip amplifier array.

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