

Abstracts

A 0-to-40-GHz Direct-Coupled Distributed Baseband Amplifier IC with SCFL Interface

S. Kimura, Y. Imai and Y. Miyamoto. "A 0-to-40-GHz Direct-Coupled Distributed Baseband Amplifier IC with SCFL Interface." 1996 *Microwave and Guided Wave Letters* 6.12 (Dec. 1996 [MGWL]): 444-446.

We have developed a distributed baseband amplifier IC with a distributed source-coupled FET logic (SCFL) level transformer. The amplifier and the SCFL level transformer are directly coupled by a distributed level-shift circuit. The amplifier incorporates our new loss-compensation circuit to improve high-frequency performance. The IC, which was fabricated using commercially-available GaAs MESFET's, has a gain of 5 dB and a 0-to-41-GHz bandwidth. It can also output a 40-Gbit/s pulse waveform on the SCFL logic level, so it can be directly coupled to an SCFL logic circuit. This is the highest performance among all reported GaAs MESFET baseband amplifiers with an SCFL interface.

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