

Abstracts

Very Small Control Modules with Line Unified FET Configuration for Array Processing

S. Hara and T. Tokumitsu. "Very Small Control Modules with Line Unified FET Configuration for Array Processing." 1991 Transactions on Microwave Theory and Techniques 39.1 (Jan. 1991 [T-MTT]): 117-123.

Very small, broad-band circuit function modules which operate as signal pass switches, phase inverters, and balanced modulators are proposed. They are realized by mutual on/off switching of the FET's in the line unified FET (LUFET) configuration, with which a main circuit function can be realized in almost the same size as a conventional FET. It is demonstrated that a balanced modulator with a chip size of only 0.6 mm X 0.5 mm can control signal gain from 0.7 to -0.7 continuously while input and output impedances are independent of control bias and isolation is more than 35 dB up to 18 GHz. These circuit function modules are valuable in constructing miniaturized phase shifters and highly integrated circuits for array processing.

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