Abstracts

Substrate crosstalk suppression capability of silicon-on-insulator substrates with buried ground planes (GPSOI)

J.S. Hamel, S. Stefanou, M. Bain, B.M. Armstrong and H.S. Gamble. "Substrate crosstalk suppression capability of silicon-on-insulator substrates with buried ground planes (GPSOI)." 2000 Microwave and Guided Wave Letters 10.4 (Apr. 2000 [MGWL]): 134-135.

Experimental s/sub 21/ transmission crosstalk studies have been conducted on silicon-on-insulator substrates with buried ground planes (GPSOI's) where a 2 /spl Omega/ per square metal-silicide buried ground plane existed between a 15 /spl Omega/-cm p-type silicon substrate and a 1 /spl mu/m thick buried CVD oxide layer. Locally grounded transmission test structures fabricated on GPSOI were found to exhibit 20 dB increased crosstalk suppression compared to published data for high resistivity (200 /spl Omega/-cm) SOI substrates incorporating capacitive guard rings over a frequency range from 500 MHz to 50 GHz. This represents an order of magnitude improvement in crosstalk power suppression capability compared to existing state-of-the-art suppression techniques in silicon substrates.

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