Abstracts

A Faraday cage isolation structure for substrate crosstalk suppression

J.H. Wu, J. Scholvin, J.A. del Alamo and K.A. Jenkins. "A Faraday cage isolation structure for substrate crosstalk suppression." 2001 Microwave and Wireless Components Letters 11.10 (Oct. 2001 [MWCL]): 410-412.

We have exploited a recently-developed, through-wafer via technology in silicon to implement a novel Faraday cage scheme for substrate crosstalk suppression in system-on-chip (SOC) applications. The Faraday cage structure consists of a ring of grounded vias encircling sensitive or noisy portions of a chip. The via technology features high aspect ratio, through-wafer holes filled with electroplated Cu and lined with a silicon nitride barrier layer. The new Faraday cage structure has shown crosstalk suppression of 40 dB at 1 GHz and 36 dB at 5 GHz at a distance of 100 /spl mu/m. This is about 10 dB better than any other isolation technique previously reported.

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