Abstracts

Dielectric properties of oxidized porous silicon in a low resistivity substrate

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Oxidized porous silicon (OPS) is characterized for its high frequency electrical properties up to 50 GHz. Transmission line properties are determined from measurement data and are compared with high and low resistivity silicon benchmark designs. Best OPS performance of 50 Ohm lines is observed on oxide-capped OPS, having attenuation of approximately 2.93 dB/cm at 4 GHz with an effective dielectric constant of 3.25. This technology offers promise for extending the use of CMOS circuitry to higher RF frequencies.

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