Abstracts

Silicon-based micromachined packages for high-frequency applications

R.M. Henderson and L.P.B. Katehi. "Silicon-based micromachined packages for high-frequency applications." 1999 Transactions on Microwave Theory and Techniques 47.8 (Aug. 1999 [T-MTT] (Mini-Special Issue on Low-Power/Low-Noise Technologies for Mobile Wireless Communications)): 1563-1569.

A novel low-cost packaging approach is presented in this paper, which is appropriate for high-frequency electronic circuits in discrete, as well as integrated, configurations. This approach is based on silicon micromachining and can effectively provide on-wafer and discrete packaging for high-quality high-precision miniature components. The required fabrication techniques are compatible with standard integrated-circuit processing and, for this reason, are low in fabrication costs. As an example, this paper presents the development of a Ka-band package that can shield and electromagnetically isolate monolithic-microwave integrated-circuit components, such as a phase shifter. The performance of this package is compared to that of a ceramic one and demonstrates excellent electrical response in addition to high design versatility.

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