Abstracts

3D integrated LTCC module using /spl mu/BGA technology for compact C-band RF front-end module

S. Pinel, S. Chakraborty, M. Roellig, R. Kunze, S. Mandal, H. Liang, C.-H. Lee, R. Li, K. Lim, G. White, M. Tentzeris and J. Laskar. "3D integrated LTCC module using /spl mu/BGA technology for compact C-band RF front-end module." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1553-1556 vol.3.

This paper presents a novel 3D integration approach for system-on-package (SOP) based solutions for wireless communication applications. This concept has been applied for the 3D integration of a C band Wireless LAN (WLAN) RF front-end module by means of stacking LTCC substrates using /spl mu/BGA technology. Characterization and modeling of RF vertical board-to-board transition, using /spl mu/BGA process are presented for the first time. Specific investigations for 5.8 GHz WLAN applications such as high performance embedded band-pass filter design, and a via-fed stacked cavity-backed patch antenna development are reported. GaAs MESFET-based Rx and Tx chipset is implemented in GaAs MESFET process and combined with the suggested package structure, demonstrating 3D integration concept suitable for C-band wireless communication applications.

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