Abstracts

High Density Microwave Packaging Program Phase 1 - Texas Instruments/Martin Marietta Team

J.A. Reddick, III, R.K. Peterson, M. Lang, W.R. Kritzler, P. Piacente and W.P. Kornrumpf. "High Density Microwave Packaging Program Phase 1 - Texas Instruments/Martin Marietta Team." 1995 MTT-S International Microwave Symposium Digest 95.1 (1995 Vol. I [MWSYM]): 173-176.

On the ARPA sponsored High Density Microwave Packaging (HDMP) program, a team composed of Texas Instruments (TI), Martin Marietta, and General Electric (GE) is developing a packaging system to support tile conformal phased arrays. Significant volume and weight reductions are projected relative to todays microwave module technology. The team's approach utilizes a stacked module configuration, with a surface contact vertical interconnect between module layers. The module layers are built on a metal matrix composite AlSiC substrate with silicon and MMIC devices mounted face-up in substrate wells. Chip-to-chip interconnect is provided by an enhanced version of Martin Marietta's Microwave High Density Interconnect (MHDI) process. Stacked module assemblies are surface mounted on an RF/DC manifold on the back of the conformal array surface. Incremental technology demonstrations are planned as part of the program, culminating in a 96-element brassboard array demonstration.

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