Abstracts

Integral microwave circulators for multi-chip module (MCM) applications

V. Krishnamurthy, B. Whitmore and K. Paik. "Integral microwave circulators for multi-chip module (MCM) applications." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 1829-1832.

The integration of passive components into multichip modules (MCM) provides a path for reducing the size and cost of microwave modules while minimizing interconnect parasitics. One passive component which is frequently used in transmit/receive modules of active phased array systems is the circulator. In this paper, an S-band Y-junction circulator was integrated into a MCM using High Density Interconnect (HDI) technology. HDI is a chips first approach where ICs are placed in cavities formed in a ceramic or plastic substrate. An interconnect layer is formed above the ICs, vias are used to make contact with the pads of the IC and Ti/Cu/Ti metalization is used to form the multi-layer interconnect. The S-band circulator fabricated in HDI displayed excellent electrical characteristics while minimizing losses incurred when a circulator is interconnected to a microwave module.

❑ Return to main document.