HIGH PERFORMANCE MULTI-CHIP IC PACKAGE

Abstract

The specification describes a multi-chip IC package in which IC chips are flip-chip bonded to both sides of a flexible substrate. The upper (or lower) surface of the flexible substrate is bonded to a rigid support substrate with openings in the support substrate to accommodate the IC chips bonded to the upper (or lower) surface of the flexible substrate. In a preferred embodiment a plurality of IC memory chips are mounted on one side of the flexible substrate and one or more logic chips to the other. A very thin flexible substrate is used to optimize the length of through hole interconnections between the memory and logic devices. If logic chips are flip-chip mounted in the cavity formed by the openings, a heat sink plate can be used to both cap the cavity and make effective thermal contact the backside of the logic chips.

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