

Thermal management of multichipmodule (MCM) using genetic algorithms

Abstract

The placement of power dissipating chips for a multichip module (MCM) is carried out using genetic algorithms. Since high power is to be dissipated over a small area of a module, the heat must be conducted away efficiently. The main design issue is to achieve uniform thermal distribution. The placement of uniform power dissipating chips is tested using an odd and even number of placement locations. Then the chips with non-uniform power are placed and the results obtained compare well with the force-directed method and quadrisection method.

Keywords — Genetic algorithms, thermal management, energy dissipation, boundary conditions