

FLOPACK

Web-Based Technology Generates
Optimized Thermal Models of IC Packages Fast

"FLOPACK saved me about 7 hours of package model building time and another 2-3 hours of simulation time, compared to building the model manually."

Mark Peterson,
Applied Micro Circuits Corporation

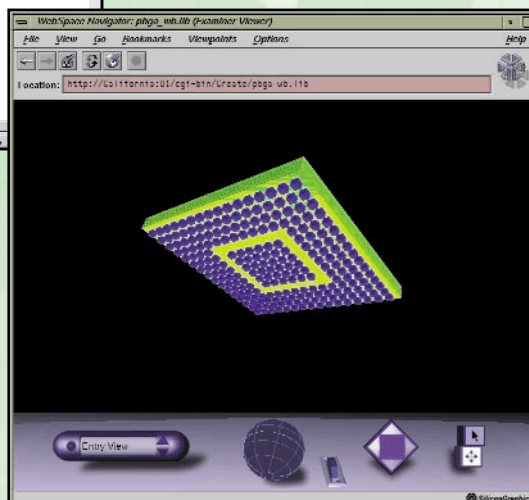
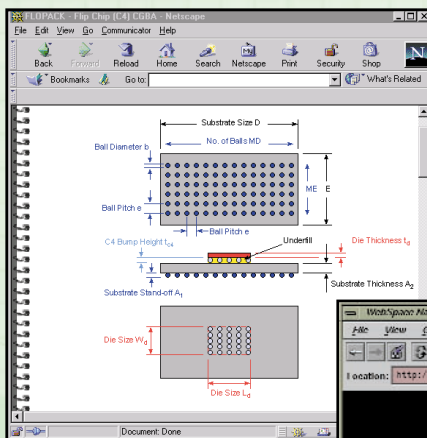
FLOPACK is a web-based software program which produces reliable, accurate thermal models of IC packages and associated parts with the minimum of effort. Designed to fulfill the industry's need for a rapid response to innovations in packaging design, FLOPACK is a Web-based application that contains a parametrically-driven menu for each part type. To take advantage of FLOPACK, you use your standard Web browser (typically, Netscape Navigator™ or Microsoft Internet Explorer™) to enter data describing the IC package you want to use. For example, if you want to build a model of a ball grid array (BGA) package,

the typical data entry items would include: number of balls, substrate conductivity, die size, and substrate metal layer thickness and coverage.

Even if you lack detailed information about the internal geometry of your part, FLOPACK's JEDEC Library SmartPart wizard lets you create accurate thermal models quickly and easily. All you need to do is answer three or four questions about your component. Utilizing built-in intelligent rules based on common industry design practices, the SmartPart wizard derives the rest of the information needed to generate the model.

FLOPACK also enables you to preview models in 3-D -- by means of VRML technology -- to verify that your input parameters are correct. (Required VRML viewers are free and readily available on the web.) After previewing, you can download the model to your local computer and analyze it thoroughly with your own copy of FLOTHERM.

All of FLOPACK's capabilities mean an enormous productivity boost for you. Indeed you can cut your component modeling time by a factor of 20 or more! FLOPACK does all the thinking required for model generation, freeing you to concentrate on optimizing your design. FLOPACK supports just about all the popular package styles in the industry including Ball Grid Arrays, Leaded Packages, Pin Grid Array's, and Transistor Outline Packages.



Since 1988, Flomerics has pioneered a different approach to numerical analysis and simulation.

Flomerics' software tools and services help bridge the gap between science and industry by embedding complex analysis and optimization software deeply into the design process, in a way which enhances productivity in engineering design. This approach is called "Design-Class Analysis".

FLOPACK

Flexibility to Create Both Detailed and Compact Models

By default, FLOPACK generates detailed models, which include elements, such as individual balls, individual thermal vias, and metal layers in organic substrates. However, FLOPACK also provides a variety of modeling options for each package, which allow you to simplify the detailed sub-models. For example, you may represent the effect of a ball grid array as an assembly of individual elements (accurate but computationally expensive) or as a single block with lumped thermal properties.

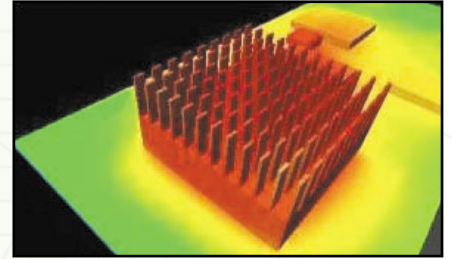
Furthermore, FLOPACK also allows you to generate compact models of your parts. Compact models are far more computationally efficient than detailed models, and are usually in the form of simple thermal resistance networks. FLOPACK supports 2-resistor compact models as well as boundary condition independent, DELPHI-style compact models.

An Outgrowth of 10 Years of R&D with Leading Component Makers

FLOPACK is a direct outgrowth of Flomerics' decade-long experience working with the world's leading semiconductor component manufacturers. Flomerics has published more than 50 papers and technical articles in the area of modeling IC packages in CFD, and teaches the industry's only comprehensive training course in this field. Moreover, Flomerics was the coordinating partner of the EU funded projects DELPHI and SEED, which laid the foundation for many of the modeling methodologies embedded within FLOPACK. No other software company can claim any greater depth of experience and knowledge in this area than Flomerics.

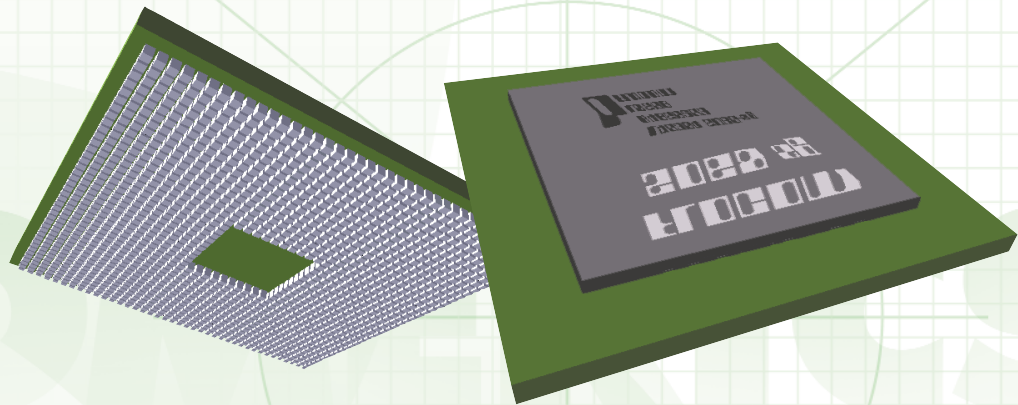
Learn More about FLOPACK

For further information, or to arrange a technical evaluation of FLOPACK, please contact your nearest Flomerics office (www.flomerics.com/contact). Existing Flomerics customers can apply for a free 1 month trial by logging onto the FLOPACK website.



"In half an hour or even less, we can construct a model that previously would have taken us two days to produce."

Dr. Filip Christiaens, Alcatel



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