COMPUTATIONAL FLUID DYNAMICS FOR HEAT TRANSFER CALCULATIONS OF ELECTRONIC DEVICES

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We have developed the techniques to study heat transfer off of electronic systems using computational fluid dynamic simulations. We are able to accurately model conduction, free and forced convection, as well as radiation off of surfaces of various geometries and different temperatures. We can examine thermal boundary layers formed in the air around the device and are able to study the thermal effects of elements in close proximity to each other on the same device or circuit board. The simulations provide information to the board designed who can then better position components to be more thermally stable.