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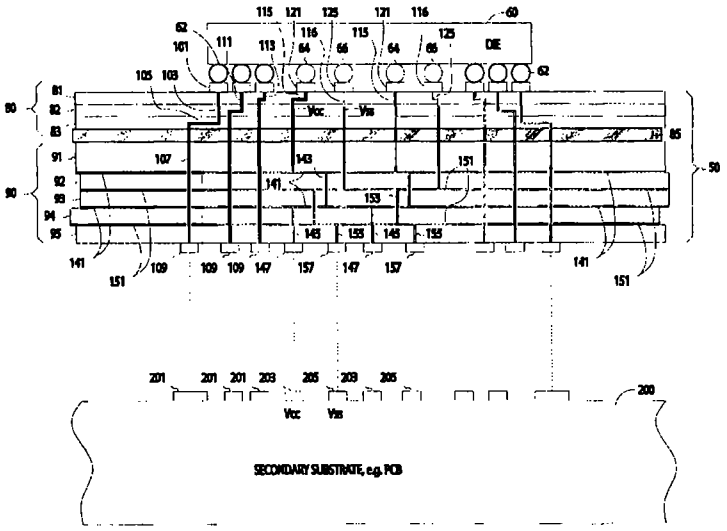
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(54) Title: HYBRID SUBSTRATE WITH EMBEDDED CAPACITORS AND METHODS OF MANUFACTURE



(57) Abstract: To reduce switching noise, the power supply terminals of an integrated circuit die are coupled to the respective terminals of at least one embedded capacitor in a multilayer ceramic/organic hybrid substrate. In one embodiment, a ceramic portion of the substrate includes at least one capacitor formed of a high permittivity layer sandwiched between conductive planes. An organic portion of the substrate includes suitable routing and fan-out of power and signal conductors. The organic portion includes a build-up of multiple layers of organic material overlying the ceramic portion. Also described are an electronic system, a data processing system, and various methods of manufacture.

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