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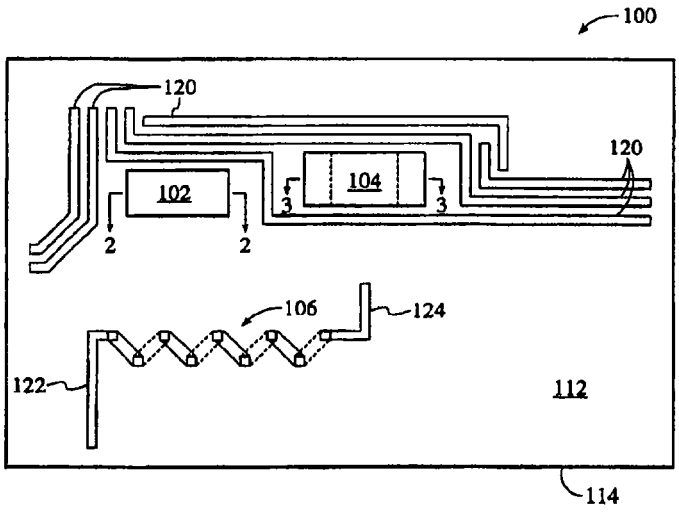
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(54) Title: APPARATUS AND METHOD FOR AN INTEGRATED CIRCUIT HAVING HIGH Q REACTIVE COMPONENTS



(57) Abstract

In an IC packaging scheme, a multilayer substrate (114) is composed of electrically conductive layers of interconnects (120, 122, 124), separated by insulative layers of epoxy resin or ceramic and connected by vias. Passive elements (102, 104, 106) are integrated within the substrate (114) at the definition stage during layout of the interconnects (120, 122, 124). The passives (102, 104, 106) can be used to enhance the electrical performance of the active circuit die to a maximum extent allowed by the material technology used for the substrate. Material selection for the package is made to allow for the best passive integration for a given circuit design. Typical applications include power supply bypass capacitors, radio frequency tuning, and impedance matching. The incorporation of passives in the packaging substrate creates a new class of electrically tailorable packaging that can derive improved performance for any given die design over existing approaches.



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