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(54) **PRINTED CIRCUIT BOARD DESIGN FOR HIGH SPEED APPLICATION**

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(57) **ABSTRACT**

A printed circuit board includes a reference plane embedded in a substrate and adjacent to the top surface of the substrate. The printed circuit board also includes a first signal net and a second signal net being in close proximity to each other and disposed within a specific region on the top surface of the substrate. An outermost insulating layer on the top surface of the substrate covers the substrate, the first signal net and the second signal net, and includes an opening to expose a portion of the second signal net. A conductive layer is disposed in the opening and on the outermost insulating layer corresponding to the specific region, such that the conductive layer overlaps with the first signal net. A fifth signal net is embedded in the substrate and between the reference plane and the outermost insulating layer.