

CS 95-007

THREE-DIMENSIONAL POLYSILICON CAPACITOR FOR HIGH DENSITY
INTEGRATED CIRCUIT APPLICATIONS

ABSTRACT OF THE DISCLOSURE

A three-dimensional polysilicon capacitor for use within integrated circuits and a method by which the three-dimensional polysilicon capacitor is formed. Formed upon a semiconductor substrate is a first polysilicon layer which has a series of apertures formed at least partially through the first polysilicon layer. A conformal insulator layer is then formed upon the first polysilicon layer and into the apertures within the first polysilicon layer. The conformal insulator layer has a series of apertures corresponding to the series of apertures within the first polysilicon layer. A second polysilicon layer is then formed upon the surface of the conformal insulator layer and filling the apertures within the conformal insulator layer. Optionally, the first polysilicon layer may be formed from a multi-coating stack comprising two polysilicon coatings separated by an metal silicide etch stop layer.

(FIGURE 2a IS SUGGESTED FOR PUBLICATION)

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