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ABSTRACT OF THE DISCLOSURE
METHOD FOR FORMING INTEGRATED CIRCUIT DEVICE STRUCTURES FROM SEMICONDUCTOR SUBSTRATE OXIDATION MASK LAYERS

A method for forming integrated circuit device structures upon active semiconductor regions of a semiconductor substrate. The active semiconductor regions are defined by Field OXide (FOX) isolation regions which are formed through a Polysilicon Buffered LOCal Oxidation of Silicon (PBLOCOS) oxidation mask structure. The PBLOCOS oxidation mask structure includes a blanket pad oxide layer which resides upon the semiconductor substrate, a blanket polysilicon buffer layer which resides upon the blanket pad oxide layer and a patterned silicon nitride layer which resides upon the blanket polysilicon buffer layer. Portions of the blanket polysilicon buffer layer and the blanket pad oxide layer exposed through the patterned silicon nitride layer are completely consumed to leave remaining the patterned silicon nitride layer, a patterned polysilicon buffer layer and a patterned pad oxide layer upon the active regions of the semiconductor substrate which are separated by the FOX isolation regions. The portions of the patterned silicon nitride layer, the patterned polysilicon buffer layer and the patterned pad oxide layer are employed in forming integrated circuit device structures upon the active semiconductor region of the semiconductor substrate.

(Fig. 1a)

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