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(54) Title: METHODS OF PROVIDING THIN LAYERS OF CRYSTALLINE SEMICONDUCTOR MATERIAL, AND RELATED STRUCTURES AND DEVICES

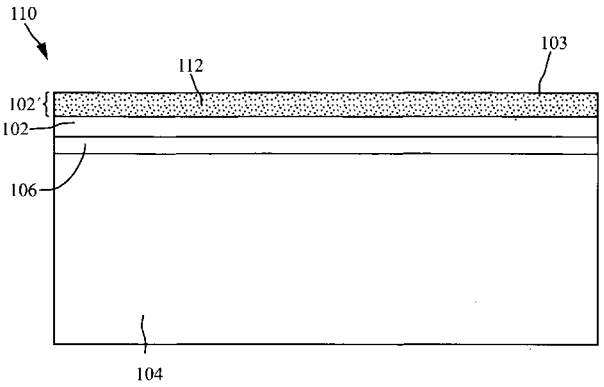


FIG. 3

(57) Abstract: Methods of fabricating semiconductor devices include forming a metal silicide in a portion of a crystalline silicon layer, and etching the metal silicide using an etchant selective to the metal silicide relative to the crystalline silicon to provide a thin crystalline silicon layer. Silicon-on-insulator (SOI) substrates may be formed by providing a layer of crystalline silicon over a base substrate with a dielectric material between the layer of crystalline silicone and the base substrate, and thinning the layer of crystalline silicon by forming a metal silicide layer in a portion of the crystalline silicon, and then etching the metal silicide layer using an etchant selective to the metal silicide layer relative to the crystalline silicon.

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