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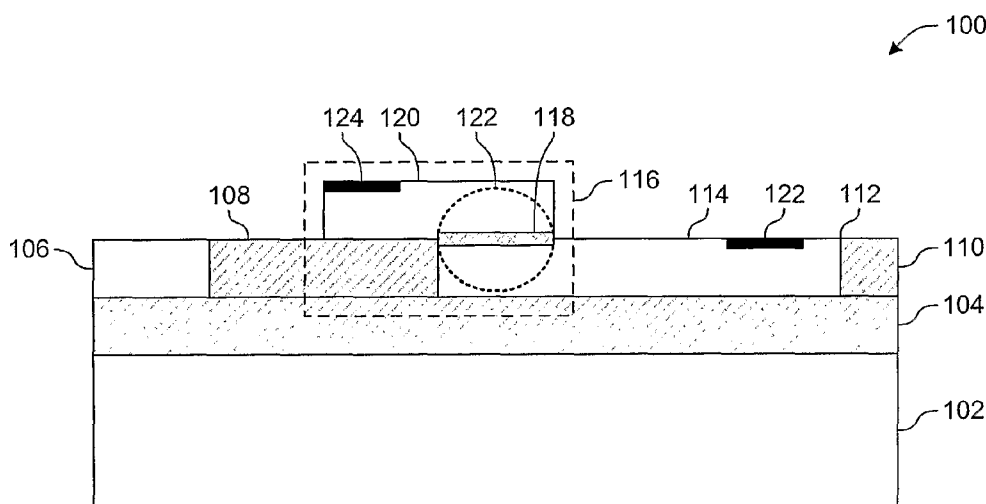
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(54) Title: SEMICONDUCTOR-INSULATOR-SEMICONDUCTOR STRUCTURE FOR HIGH SPEED APPLICATIONS



(57) Abstract: A semiconductor-insulator-semiconductor (SIS) device is presented along with a device for fabricating the same. The SIS device includes a lower semiconductor layer, an upper semiconductor layer, and a central insulating layer located between the overlapping portions of the lower semiconductor layer and the upper semiconductor layer. The central insulating layer is nitridized in order to make the layer less permeable to dopant species and to therefore minimize dopant cross-diffusion. Subsequently the switching characteristics of the SIS device are optimized when the SIS device is used as, for example, an integrated optical modulator.

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