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(54) Title: GROUP III-V SEMICONDUCTOR STRUCTURES HAVING CRYSTALLINE REGROWTH LAYERS AND METHODS FOR FORMING SUCH STRUCTURES

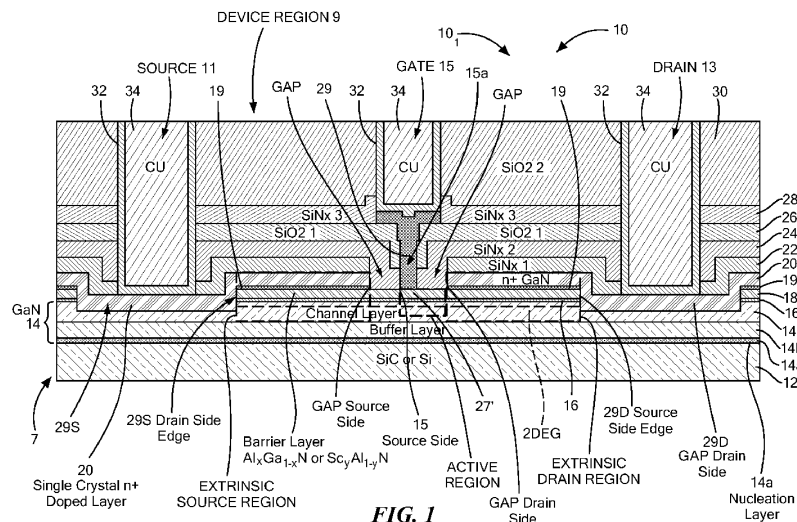


FIG. 1

(57) Abstract: A Group III-V semiconductor structure having a semiconductor device. The semiconductor device has a source and drain recess regions (29S, 29D) extending through a barrier layer (18) and into a channel layer (14c). A regrown, doped Group III-V ohmic contact layer (20) is disposed on and in direct contact with the source and drain recess regions. A gate electrode (15) is disposed in a gap in the regrown, doped Group III-V ohmic contact layer and on the barrier layer. A dielectric structure is disposed over the ohmic contact layer and over the barrier layer and extending continuously from a region over the source recess region to one side of the stem portion and then extending continuously from an opposite side of the stem portion to a region over the drain recess region, a portion of the dielectric structure being in contact with the stem portion and the barrier layer.

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