

**TITLE OF INVENTION: GROUP III-V SEMICONDUCTOR
STRUCTURES HAVING CRYSTALLINE REGROWTH LAYERS
AND METHODS FOR FORMING SUCH STRUCTURES**

ABSTRACT

A Group III-V semiconductor structure having a semiconductor device. The semiconductor device has a source and drain recess regions extending through a barrier layer and into a channel layer. A regrown, doped Group III-V ohmic contact layer is disposed on and in direct contact with the source and drain recess regions. A gate electrode 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.

FIG. 1