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(57) **ABSTRACT**

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A semiconductor structure includes an active region including a source region, a drain region, and a channel region extending between the source region and the drain region, a gate stack, and a gate dielectric layer located between the gate stack and the active region. The gate stack includes an electrically conductive gate electrode and a single crystalline III-nitride ferroelectric plate located between the electrically conductive gate electrode and the gate dielectric layer, and an entirety of the single crystalline III-nitride ferroelectric plate is single crystalline.

