FLOATING BODY FIELD-EFFECT TRANSISTORS, AND METHODS OF FORMING FLOATING BODY FIELD-EFFECT TRANSISTORS

ABSTRACT

In one embodiment, a floating body field-effect transistor includes a pair of source/drain regions having a floating body channel region received therebetween. The source/drain regions and the floating body channel region are received over an insulator. A gate electrode is proximate the floating body channel region. A gate dielectric is received between the gate electrode and the floating body channel region. The floating body channel region has a semiconductor SixGe(1_X)-comprising region. The floating body channel region has a semiconductor silicon-comprising region received between the semiconductor SixGe(1_X)-comprising region and the gate dielectric. The semiconductor SixGe(1_X)-comprising region has greater quantity of Ge than any quantity of Ge within the semiconductor silicon-comprising region. Other embodiments are contemplated, including methods of forming floating body field-effect transistors.

FIGURE 5