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(54) **NONLINEAR GATE VERTICAL TRANSISTOR**

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(57) **ABSTRACT**

A trench transistor with nonlinear gate-oxide-semiconductor boundary layout, and method of manufacture is provided. The trench transistor includes a gate region, an oxide region adjacent to the gate region, and a semiconductor region adjacent to the oxide region. The semiconductor region includes a channel region along a gate-oxide-semiconductor boundary. The channel region is configured to conduct current along the gate-oxide-semiconductor boundary when the transistor is turned on. The gate-oxide-semiconductor boundary has a nonlinear shape.

