

WING GATE TRANSISTOR FOR INTEGRATED CIRCUITS

ABSTRACT

A system is provided for forming a semiconductor device. Layers of gate dielectric material, gate material, and cap material are formed on a semiconductor substrate. The cap material and a portion of the gate material are processed to form a cap and a gate body portion. A wing on the gate body portion is formed from a remaining portion of the gate material. The gate dielectric material under a portion of the wing on the gate body portion is removed to form a gate dielectric. A lightly-doped source/drain region is formed in the semiconductor substrate using the gate body portion and the wing.

Fig. 12