

TRANSISTOR INCLUDING A GATE ELECTRODE EXTENDING ALL AROUND ONE OR MORE CHANNEL REGIONS

ABSTRACT

A semiconductor structure (100) comprises a substrate (101) and a transistor. The transistor comprises a raised source region (404) and a raised drain region (405) provided above the substrate, one or more elongated semiconductor lines (201, 202, 203), a gate electrode (302, 902) and a gate insulation layer (301, 901). The one or more elongated semiconductor lines are connected between the raised source region and the raised drain region, wherein a longitudinal direction of each of the one or more elongated semiconductor lines extends substantially along a horizontal direction that is perpendicular to a thickness direction of the substrate. Each of the elongated semiconductor lines comprises a channel region. The gate electrode (302, 902) extends all around each of the channel regions of the one or more elongated semiconductor lines. The gate insulation layer (301, 901) is provided between each of the one or more elongated semiconductor lines and the gate electrode.

FIG. 4c