ABSTRACT

A semiconductor device includes: an active pattern extending in a first direction, parallel to an upper surface of a substrate, on the substrate; a gate structure extending in a second direction, intersecting the first direction, on the active pattern; a source/drain region disposed in a region, adjacent to the gate structure, on the active pattern; an interlayer insulating layer covering the gate structure and the source/drain region; and a contact structure penetrating through the interlayer insulating layer and contacting the source/drain region. The contact structure may include a contact plug, an insulating liner surrounding a sidewall of the contact plug, and a conductive barrier layer disposed between the insulating liner and the contact plug and on a bottom surface of the contact plug. The conductive barrier layer may have a barrier extension portion extending downwardly from a lower end of the insulating liner.

FIG. 4