

ABSTRACT

A semiconductor device is provided. The device includes: a stack structure with interlayer insulating layers and gate electrodes; an upper interconnection structure below the stack structure; an upper bonding structure connected to the upper interconnection structure and bonded to the lower bonding structure; a channel structure; etch stop structures in an upper portion of the stack structure, the etch stop structures extending along a second direction, perpendicular to the first direction, and spaced apart along a third direction, perpendicular to the first direction and the second direction, within the first region; a common source conductive layer on the stack structure between the etch stop structures; and a buffer layer on the common source conductive layer.

FIG. 3B