

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

ABSTRACT

Embodiments of the disclosure provide a semiconductor device and a manufacturing method thereof. The method for manufacturing a semiconductor device includes: forming a plurality of first trenches extending in a first direction on the substrate; forming a plurality of second trenches extending in a second direction on the substrate on which the first trenches are formed, in which the first direction is perpendicular to the second direction, and a first depth of the first trenches is greater than a second depth of the second trenches; forming a first isolation layer in each of the first trenches and the second trenches, in which on a section along the second direction, first gaps are respectively provided between the first isolation layer and sidewalls on both sides of each of the first trenches, and a depth of the first gaps is less than the first depth; forming two bit lines which are parallel to each other and extend in the first direction by depositing conductive layers of a first conductive material at bottoms of the first gaps on both sides of each of the first trenches; and forming word lines extending in the second direction above the conductive layers in the first trenches and the second trenches.

[Fig. 1]