

SEMICONDUCTOR STRUCTURE AND MANUFACTURING METHOD THEREOF

ABSTRACT

Embodiments of the disclosure relate to a semiconductor structure and a manufacturing
5 method thereof. The manufacturing method includes: providing a substrate; forming an ion
implantation area in the substrate, an upper surface of the ion implantation area having a
distance from an upper surface of the substrate; forming an initial word line trench in the
substrate, the initial word line trench extending from the upper surface of the substrate into the
ion implantation area; widening the initial word line trench to form a word line trench, a width
10 of a bottom of the word line trench being greater than a minimum width of the word line trench.
The manufacturing method for a semiconductor structure of the embodiments of the present
disclosure enables the initial word line trench to be widened to form the word line trench after
the initial word line trench is formed by forming an ion implantation area in the substrate,
thereby increasing the cross-sectional area of the bottom of the formed word line trench, and
15 reducing the resistance of the word line formed in the subsequent manufacturing process, and
avoiding the increase of power consumption of the device and the deterioration of RC delay.

[Fig.3]