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(54) **SEMICONDUCTOR DEVICE AND FABRICATION METHOD THEREFOR**

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(57) ABSTRACT

Aspects of the disclosure provide a memory system, a semiconductor device and fabrication method for the semiconductor device. The semiconductor device includes a memory stack with gate layers and insulating layers, and the gate layers and the insulating layers are stacked alternately. The semiconductor device also includes a first channel structure formed in a first channel hole in the memory stack. The first channel structure includes a channel plug in connection with a channel layer of the first channel structure. The semiconductor device also includes an isolation stack including a landing liner layer and an isolation layer. A first portion of the landing liner layer is laid on the channel plug. The semiconductor device includes a first contact structure formed in the isolation stack. The first contact structure is connected to the channel plug via an opening in the first portion of the landing liner layer.

