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(57) **ABSTRACT**

In an example, a memory device includes a first stack structure and a second stack structure over the first stack structure. Each of the first stack structure and the second stack structure includes alternately stacked conductor layers and first insulating layers. The memory device also includes a first channel structure extending through the first stack structure, and a second channel structure extending through the second stack structure and connected with the first channel structure. A width of an end of the first channel structure closer to the second channel structure is greater than that of the second channel structure closer to the first channel structure. The memory device further includes a pillar structure extending through the first stack structure and the second stack structure. The pillar structure includes a metal layer.

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