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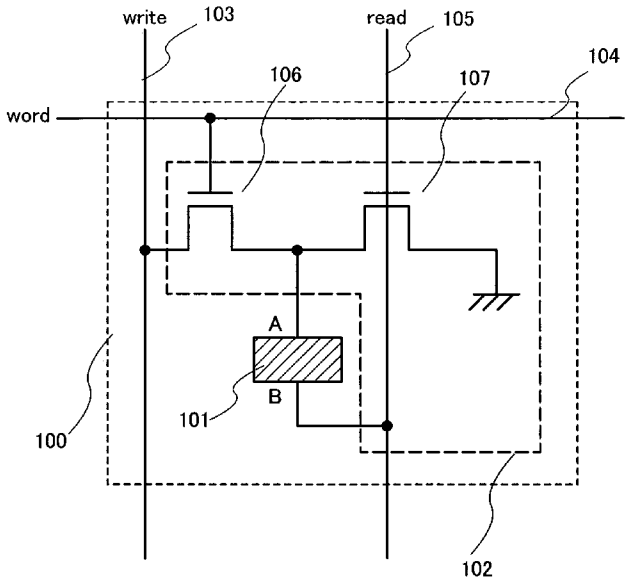
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(54) **Title:** SEMICONDUCTOR DEVICE INCLUDING STORAGE DEVICE AND METHOD FOR DRIVING THE SAME



(57) **Abstract:** A structure of a storage device which can operate memory elements utilizing silicide reaction using the same voltage value for writing and for reading, and a method for driving the same are proposed. The present invention relates to a storage device including a memory element and a circuit which changes a polarity of applying voltage to the memory element for writing (or reading) into a different polarity of that for reading (or writing). The memory element includes at least a first conductive layer, a film including silicon formed over the first conductive layer, and a second conductive layer formed over the silicon film. The first conductive layer and the second conductive layer of the memory element are formed using different materials.

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