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(54) **NON-VOLATILE MEMORY CELL**

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(57) **ABSTRACT**

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A non-volatile memory cell includes a tunneling part; a coupling transistor, including a coupling gate part, a first conductive region and a second conductive region, wherein the coupling gate part is coupled to the tunneling part and disposed in the first conductive region; a read transistor with a read gate part coupled to the tunneling part for forming an electron tunneling ejection path in an erase mode, and forming an electron tunneling injection path in a program mode; and a select transistor, connected in series with the read transistor, for forming a read path with the read transistor in a read mode.

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