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(54) Title: RESISTIVE RANDOM ACCESS MEMORY CELLS INTEGRATED WITH SHARED-GATE VERTICAL FIELD EFFECT TRANSISTORS

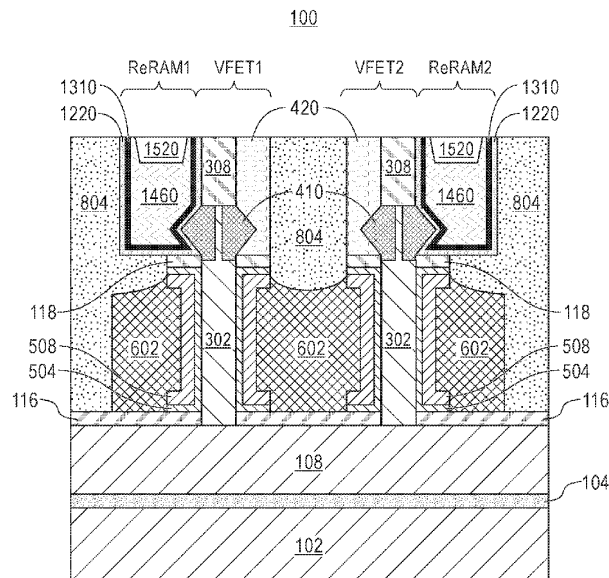


FIG. 15

(57) Abstract: A two-transistor-two-resistor (2T2R) resistive random access memory (ReRAM) structure, and a method for forming the same includes two vertical field effect transistors (VFETs) formed on a substrate (102), each VFET includes an epitaxial region (410) located above a channel region (302) and below a dielectric cap (308). The epitaxial region (410) includes two opposing protruding regions of triangular shape that extend horizontally beyond the channel region (302). A metal gate material (602) is disposed on and around the channel region (302). A portion of the metal gate material (602) is located between the two VFETs. A ReRAM stack is deposited within two openings (1010) adjacent to a side of each VFET that is opposing the portion of the metal gate material (602) located between the two VFETs. A portion of the epitaxial region (410) in direct contact with the ReRAM stack acts as a bottom electrode for the ReRAM structure.

[Continued on next page]

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