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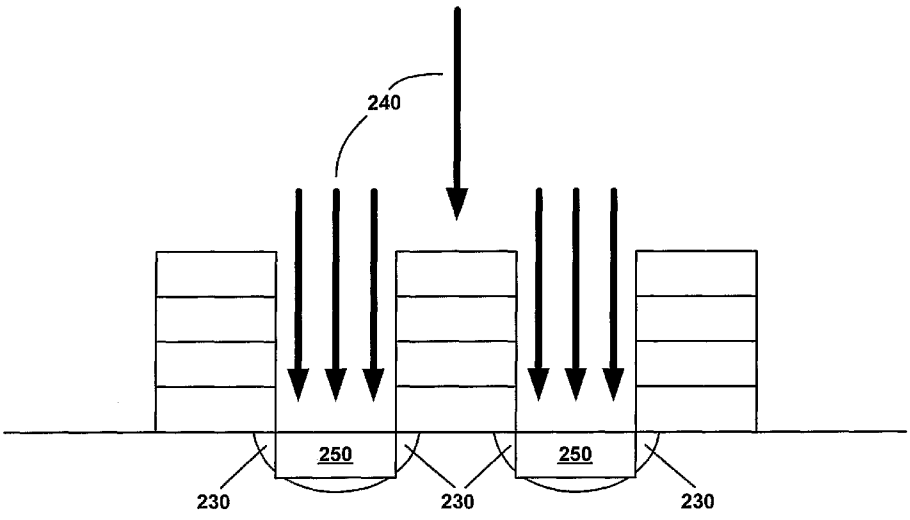
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(54) Title: METHOD OF PRODUCING A LATERALLY DOPED CHANNEL



(57) Abstract: A lateral doped channel, particularly in a MOSFET of a semiconductor memory cell. A first doping material (210) is implanted substantially vertically into a region (220) adjacent to a gate structure. A diffusion process diffuses the first doping material into a channel region beneath the gate structure. A second doping material (240) is implanted substantially vertically into the region (220) adjacent to a gate structure. The second implantation forms source/drain regions (250) and may terminate the channel region. The channel region thus comprises a laterally non-uniform doping profile which beneficially mitigates the short channel effect and is highly advantageous as compensation for manufacturing process variations in channel length. The memory cell may be a floating gate type or a nitride type (SONOS) non-volatile memory.

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