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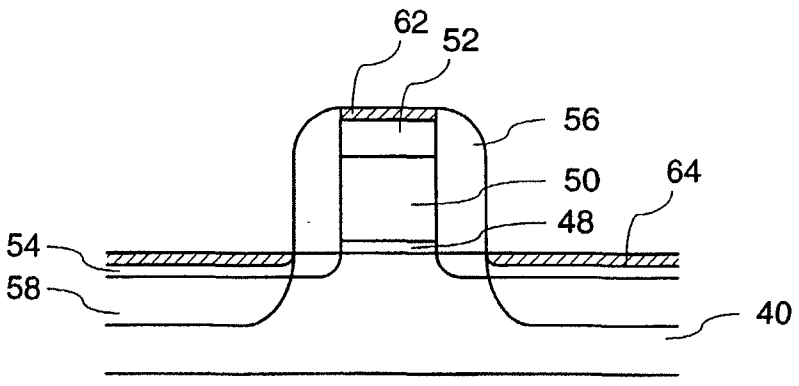
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(54) Title: MOSFETS INCORPORATING NICKEL GERMANOSILICIDED GATE AND METHODS OF THEIR FORMATION



(57) Abstract: A MOSFET gate or a MOSFET source or drain region comprises silicon germanium or polycrystalline silicon germanium. Silicidation with nickel is performed to form a nickel germanosilicide (62, 64) that preferably comprises the monosilicide phase of nickel silicide. The inclusion of germanium in the silicide provides a wider temperature range within which the monosilicide phase may be formed, while essentially preserving the superior sheet resistance exhibited by nickel monosilicide. As a result, the nickel germanosilicide is capable of withstanding greater temperatures during subsequent processing than nickel monosilicide, yet provides approximately the same sheet resistance and other beneficial properties as nickel monosilicide.