ABSTRACT

A semiconductor device comprises an active pattern including a lower pattern and a plurality of sheet patterns, a plurality of gate structures disposed on the lower pattern, each of the gate structures including a gate electrode and gate insulating films, source/drain recesses defined between adjacent gate structures and a source/drain pattern filling the source/drain recesses. Each source/drain pattern may include a first semiconductor liner extending along sidewalls and a bottom surface of the source/drain recesses, second semiconductor liners on the first semiconductor liners and extending along the sidewalls and the bottom surface of the source/drain recesses, and a filling semiconductor film on the second semiconductor liners and filling the source/drain recess. The second semiconductor liners may be doped with carbon, and the first semiconductor liners may be in contact with the lower pattern and the sheet patterns, while the first semiconductor liners may include carbon-undoped regions.

FIG. 2