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ABSTRACT OF THE DISCLOSURE

In a semiconductor substrate comprising a silicon substrate having a porous region, and a semiconductor layer provided on the porous region, the semiconductor layer comprises a single-crystal compound and is formed on the surface of the porous region with its pores having been sealed at the surface. This substrate can be produced by a process comprising the steps of heat-treating the silicon substrate having a porous region, to seal pores at the surface of the porous region, and forming a single-crystal compound-semiconductor layer by heteroepitaxial growth on the porous region having the pores sealed by the heat treatment.

Single-crystal compound-semiconductor films with less crystal defects can be formed on large-area silicon substrates in a high productivity, a high uniformity, a high controllability and a great economical advantage.

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