ABSTRACT

To shorten a process for manufacturing a semiconductor device comprising a silicide and a non-silicide diffusion layers and to form a stable and highly homogenous non-silicide diffusion layer, ions are implanted to form a source/drain diffusion layer and then the substrate is subjected to rapid thermal oxidation in a short time to activate the ions while forming a new oxide film. A thermal oxide film (6) consisting of the new oxide film including a protective oxide film (3) is etched to form an oxide film for preventing silicidation (8), a Ti film (9) is formed over the whole surface including the oxide film for preventing silicidation (8), the product is annealed for silicidation and the unreacted Ti film (9) is removed. Thus, a diffusion layer (4) as a non-silicide layer which is little silicided and a diffusion layer (5) whose surface is a silicide layer (10) are formed.