ABSTRACT OF THE DISCLOSURE

An object of the present invention is to provide a high-performance and high-reliability semiconductor device. A silicon nitride film 17 for self alignment, which film is formed to cover the gate electrode of MISFET, is formed at a substrate temperature of 400°C or greater by plasma CVD using a raw material gas having monosilane and nitrogen. A silicon nitride film 44 constituting a passivation film is formed at a substrate temperature of about 350°C by plasma CVD using a raw material gas having monosilane, ammonia and nitrogen. The hydrogen content contained in the silicon nitride film 17 is smaller than that contained in the silicon nitride film 44, making it possible to suppress hydrogen release from the silicon nitride film 17.