



US 20020145156A1

(19) **United States**(12) **Patent Application Publication**
Igarashi et al.(10) **Pub. No.: US 2002/0145156 A1**(43) **Pub. Date: Oct. 10, 2002**(54) **SEMICONDUCTOR DEVICE AND METHOD
FOR MANUFACTURING THE SAME****Publication Classification**(51) **Int. Cl.⁷** H01L 29/80; H01L 31/112(52) **U.S. Cl.** 257/262(75) **Inventors:** Motoshige Igarashi, Tokyo (JP);
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KAISHA(21) **Appl. No.:** 09/971,958(22) **Filed:** Oct. 9, 2001(30) **Foreign Application Priority Data**

Apr. 6, 2001 (JP) 2001-108720

(57) **ABSTRACT**

To provide a semiconductor device with reduced parasitic capacity in the vicinity of gate electrodes, and a method for manufacturing such a semiconductor device. The semiconductor device comprises a gate electrode formed on a silicon semiconductor substrate 1 through a gate oxide film, and a pair of impurity diffusion layers formed on the surface region of the silicon semiconductor substrate at both sides of the gate electrode. A silicon nitride film acting as a sidewall spacer is formed so as to cover the sidewall of the gate electrode, and the silicon nitride film is allowed to extend to the surface of the silicon semiconductor substrate 1 in the vicinity of the gate electrode in a substantially L-shaped profile.

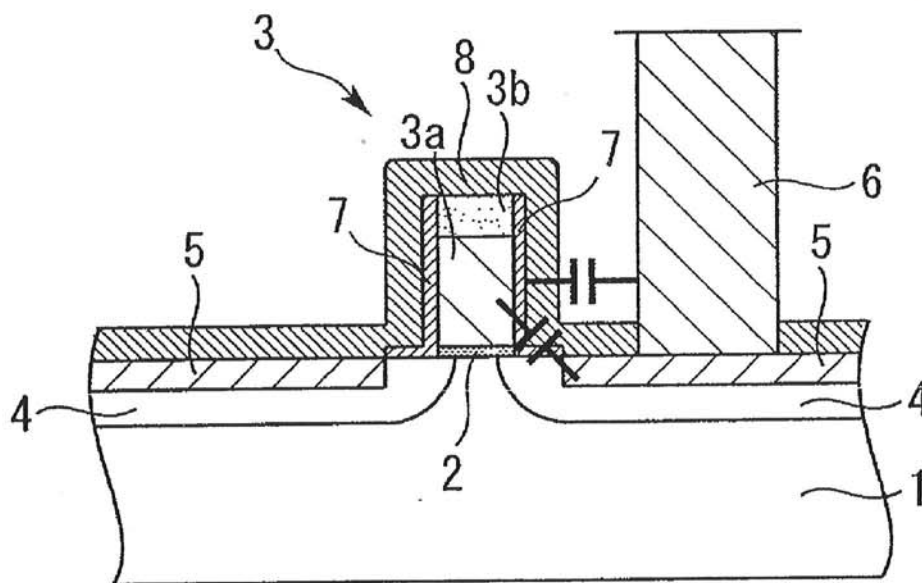
**IP Bridge Exhibit 2002**
TSMC v. Godo Kaisha IP Bridge 1

Fig. 3

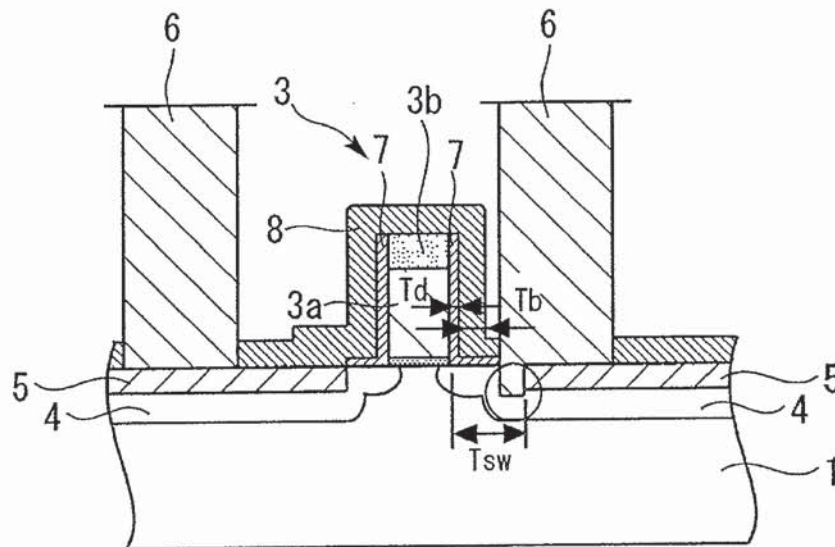
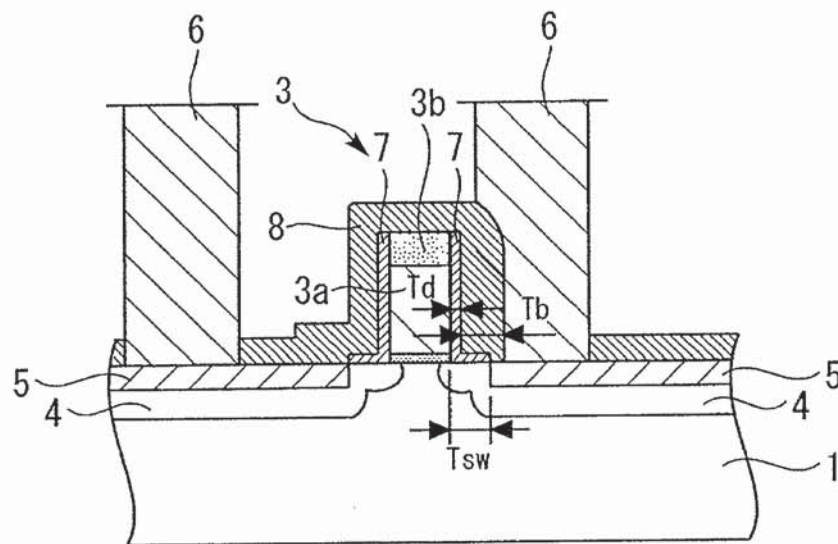


Fig. 4



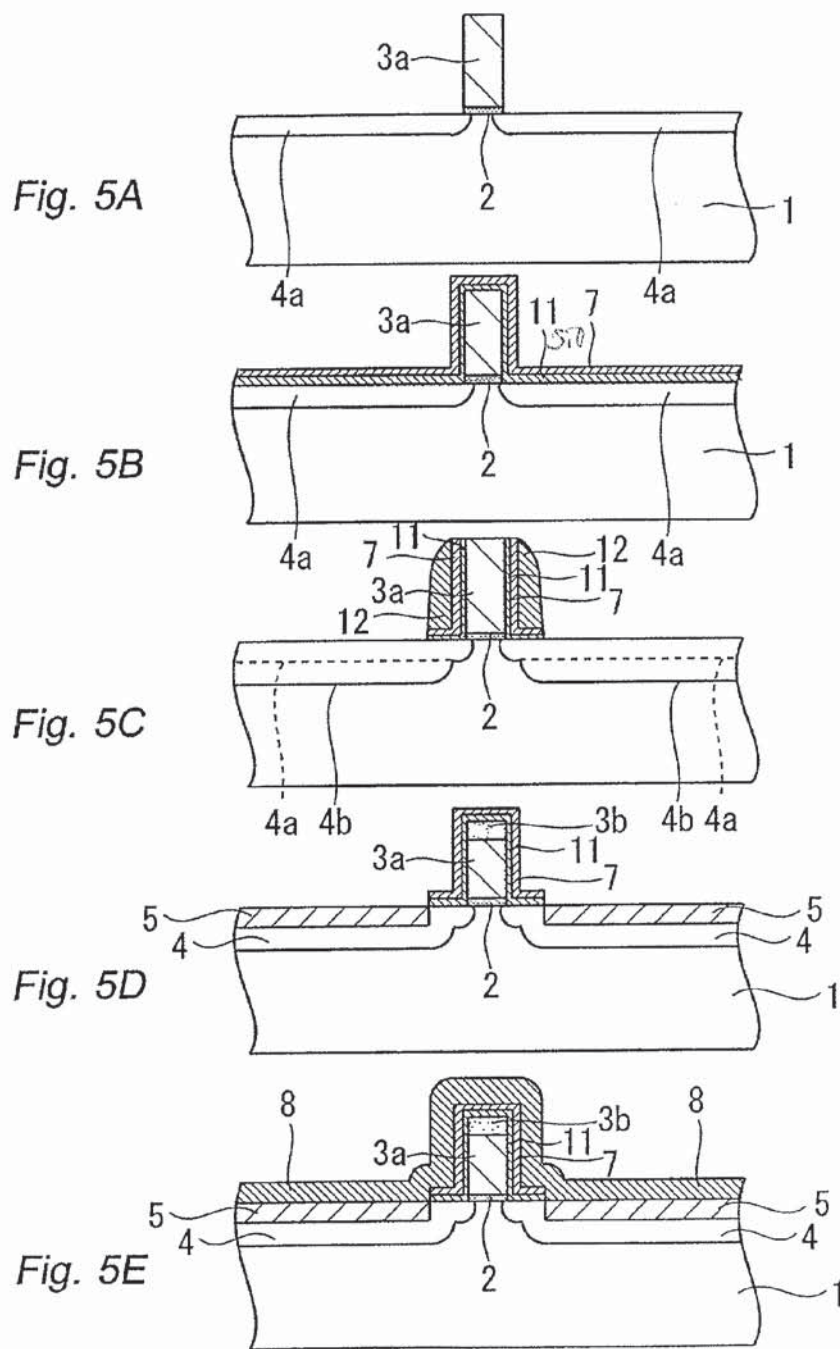


Fig. 6

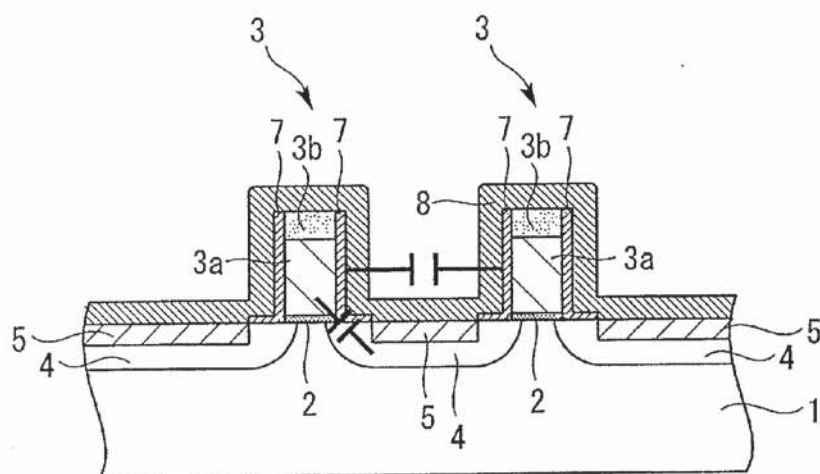
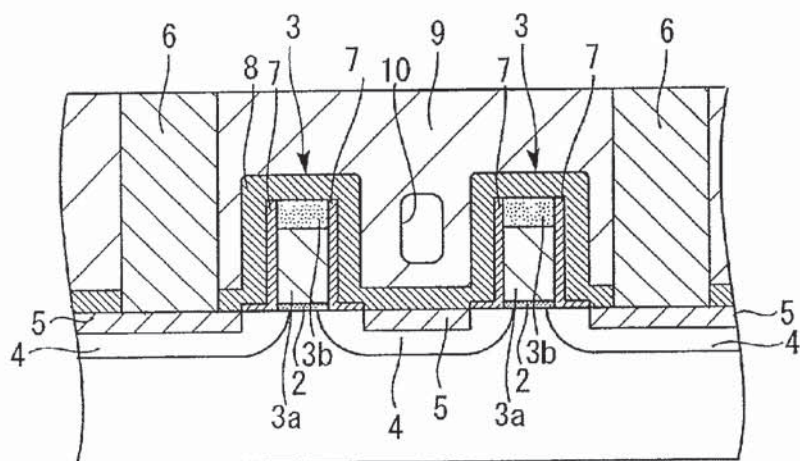


Fig. 7



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