ABSTRACT

DUAL METAL GATE PROCESS: METALS AND THEIR SILICIDES

Dual-metal gate CMOS transistors are described. An NMOS and a PMOS active area of a semiconductor substrate are separated by isolation regions. A metal gate is formed in one active area and a metal silicide gate is formed in the other active area wherein the active area having the gate with the higher work function is the PMOS active area. Alternatively, both gates may be metal silicide gates wherein the silicon concentrations of the two gates differ. The PMOS gate has the higher work function.

Figure 13