# SEMICONDUCTOR DEVICE HAVING IMPROVED FREQUENCY RESPONSE


## Abstract of the Disclosure

A technique for improving the frequency response of a semiconductor device employing silicon as the semiconductor material. Parasitic components inherent in semiconductor devices degrade the performance of these devices at higher frequencies. Typically, a parasitic capacitor includes a dielectric material sandwiched between a conductive interconnect (31A, 31B) and a substrate (10) or a bottom contact (18). Further, in the past, the thickness of this dielectric material has been similar to that of the third dielectric material (17) of the present invention. However, in the present invention the effective thickness of the dielectric material has been increased by including a first and second dielectric material (15, 16) as well as the third dielectric material (17). Increasing the thickness of the dielectric of a parasitic capacitor decreases the value of the parasitic capacitance; and therefore increases the cut-off frequency of the semiconductor device.

**(FIGs. 4 and 5 accompany this abstract)**