Semiconductor Chip with Gate Dielectrics for High-Performance and Low-Leakage Applications

ABSTRACT OF THE DISCLOSURE

Both high performance and low leakage current devices can be formed on a single wafer without significant additional processing steps by the formation of an ultra-thin gate dielectric and a high-permittivity gate dielectric, respectively, in regions wherein switching speed and low leakage current, respectively, are desired. Logic and embedded memory regions can be performance optimized on the same integrated circuit.