

METHOD OF TREATING SILICON WAFERS TO HAVE INTRINSIC GETTERING AND GATE OXIDE INTEGRITY YIELD

Abstract

The disclosure is directed to a method to recover the gate oxide integrity yield of a silicon wafer after rapid thermal anneal in an ambient atmosphere comprising a nitrogen containing gas, such as NH_3 or N_2 . Generally, rapid thermal anneals in an ambient atmosphere comprising a nitrogen containing gas, such as NH_3 or N_2 to thereby imprint an oxygen precipitate profile can degrade the GOI yield of a silicon wafer by exposing as-grown crystal defects (oxygen precipitate) and vacancies generated by the silicon nitride film. The present invention restores GOI yield by stripping the silicon nitride layer, which is followed by wafer oxidation, which is followed by stripping the silicon oxide layer.

FIGURE 8