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(54) Title: NON–OXYGEN PRECIPITATING CZOCHRALSKI SILICON WAFERS

(57) Abstract

The present invention relates to a process for the treatment of Czochralski single crystal silicon wafers to dissolve existing oxygen clusters and precipitates, while preventing their formation upon a subsequent oxygen precipitation heat treatment. The process comprises (i) heat–treating the wafer in a rapid thermal annealer at a temperature of at least 1150°C in an atmosphere having an oxygen concentration of at least 1000 ppma, or alternatively (ii) heat–treating the wafer in a rapid thermal annealer at a temperature of at least about 1150°C and then controlling the rate of cooling from the maximum temperature achieved during the heat–treatment through a temperature range in which vacancies are relatively mobile in order to reduce the number density of vacancies in the single crystal silicon to a value such that oxygen precipitates will not form if the wafer is subsequently subjected to an oxygen precipitation heat–treatment.