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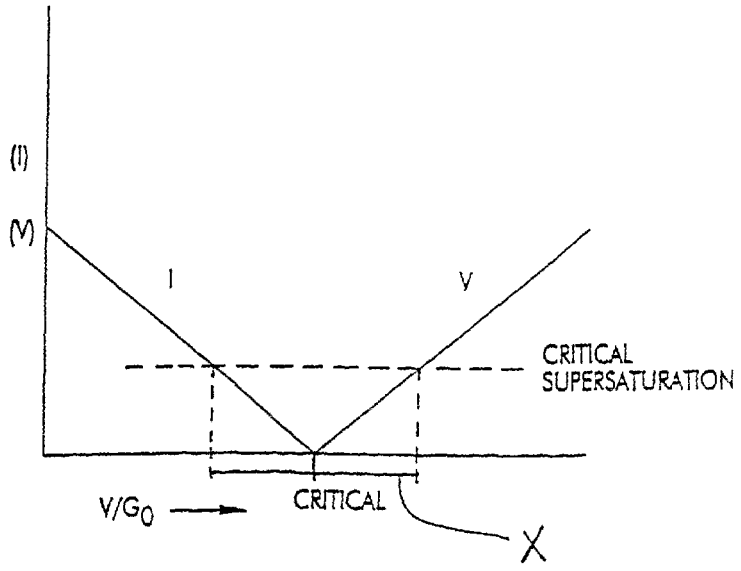
(54) Title: PROCESS FOR PREPARING LOW DEFECT DENSITY SILICON USING HIGH GROWTH RATES



(57) Abstract: The present invention relates to a process for growing a single crystal silicon ingot which contains an axially symmetric region which is substantially free of agglomerated intrinsic point defects. The process comprises (i) forming a region within the constant diameter portion in which vacancies are the predominant intrinsic point defect; (ii) heating the lateral surface of the ingot to cause a thermally induced inward flux of silicon self interstitial atoms into the region from the heated surface which reduces the concentration of vacancies in the region; and (iii) maintaining the temperature of the region in excess of the temperature, TA, at which agglomeration of vacancy point defects into agglomerated defects occurs during the period of time between the formation of the region and the reduction of the concentration of vacancies in the region.

WO 02/075025 A2