Abstract

Semiconductor wafer composed of monocrystalline silicon and method for producing it

The invention relates to a semiconductor wafer composed of monocrystalline silicon, and to a method for producing it. The semiconductor wafer has a zone, DZ, which is free of BMD defects and extends from a front side of the semiconductor wafer into the bulk of the semiconductor wafer, and a region having BMD defects which extends from the DZ further into the bulk of the semiconductor wafer. The method comprises pulling a silicon single crystal in accordance with the Czochralski method, processing the single crystal to form a polished monocrystalline substrate wafer composed of silicon, rapidly heating and cooling the substrate wafer, slowly heating the rapidly heated and cooled substrate wafer, and keeping the substrate wafer at a specific temperature and over a specific period.

Fig. 1