

Electric Property Analysis of SiC Semiconductor Wafer for Power Device Application

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Abstract : We investigated the effects of hydrogen addition to the growth process of SiC single crystal using sublimation physical vapor transport(PVT) techniques. Hydrogen was periodically added to an inert gas for the growth ambient during the SiC bulk growth. Grown 2"-SiC single crystals were proven to be the polytype of 6H-SiC and carrier concentration levels of about $10^{17}/\text{cm}^3$ was determined from Hall measurements. As compared to the characteristics of SiC crystal grown without using hydrogen addition, the SiC crystal without definitely exhibited lower carrier concentration and lower micropipe density as well as reduced growth rate.