

A Study of Smart IGBTs Design

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ABSTRACT

Insulation-Gate Bipolar Transistor (IGBT) ,which is developed for power devices use on medium-power and medium-frequency. It integrates the structures of Power Bipolar Transistor and Power MOSFET, and then it has better performance in many applications. In this thesis, a smart IGBT device was developed by using semiconductor process and device characteristic simulation tools. Eventually, this device will be with 200V breakdown voltage and 20A on-state current characteristics. Finally, the ESD and Latchup protection structures will be accomplished in this study.

Keywords : Insulation-Gate Bipolar Transistor ; ESD ; Latchup

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