智慧型 IGBT 設計之研究

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摘 要

絕緣閘極雙極性電晶體，乃是因應功率元件在高頻應用上所開發出來的元件。它利用整合高功率雙極性電晶體 (Power Bipolar Transistor)以及高功率金氧半電晶體 (Power MOSFET)結構的方法，克服兩個功率元件在應用上的缺點，達到了中高功率、頻率上的有效應用。 在本論文中，我們利用半導體製程及元件模擬軟體輔助（TMA軟體：Tsuprem4，Medici）來設計一個可以達到200V，20A應用的IGBT元件，最後並且加上ESD以及Latch-Up的防護結構。

關鍵詞 : 絕緣閘極雙極性電晶體 ; ESD ; Latch-Up

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