Theoretical Study and Analysis for EEPROM Memory Cell Characters

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ABSTRACT

Abstract Although EEPROM has larger memory size, its reliability and endurance characteristics are better than other non-volatile memories, such as FLASH-EPROM products. Consequently, many applications still use it, such as IC cards、smart cards and phone cards, and so on. Generally speaking, there are some important technologies needed to consider during EEPROM products development, especially in memory cell, For the research of EEPROM memory cell, we focus on the threshold voltage shift due to programming or erasing operation, data retention, and data endurance. The non-volatile memory devices have the capability to store the information. The data storage is mainly determined by the charges on the floating gate. Such that if the change of charge on the floating gate can be accurate to predict, then the shifting of device threshold voltage and the data storage or not can be discriminated. Therefore, in this study, we will investigate the threshold voltage alteration during the programming and erasing operation of EEPROM memory.

Keywords : Volatile Memory ; Nonvolatile Memory ; Threshold Voltage ; Erase ; Write

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