

Robust Single/Multi bit Memristor Based Memory

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Abstract : Demand for low power fast memories is increasing with the increase in IC's complexity, in this paper we introduce a proposal for a compact SRAM based on memristor devices. The compact size of the proposed cell (1T2M compared to 6T of traditional SRAMs) allows denser memories on the same area. In this paper, we will discuss the proposed memristor memory cell for single/multi bit data storing configurations along with the writing and reading operations. Stored data stability across successive read operation will be illustrated, operational simulation results and a comparison of our proposed design with previously conventional SRAM and previously proposed memristor cells will be provided.

Keywords : memristor, multi-bit, single-bit, circuits, systems