A Post-Package Bit-Repair Scheme Using Static Latches with Bipolar-Voltage Programmable Antifuse Circuit for High-Density DRAMs

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A post-package bit-repair scheme using static latches with bipolar-voltage programmable antifuse circuit is proposed in this paper. Here, the antifuses are programmed by bipolar voltages of V_{CC} and $-V_{CC}$, alleviating high-voltage problems and achieving a smaller layout area than the previous scheme. In addition, an efficient bit-repair scheme is used instead of the conventional line-repair one, reducing a layout area for the redundancy bits. And, using the static latches instead of the dynamic memory cells for the redundancy bits eliminates possible defects in the redundancy area, making this scheme robust.