

METHOD FOR READING AND RESTORING DATA IN  
A DATA STORAGE ELEMENT

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Abstract of the Disclosure

A method for reading and restoring data in a FERAM (10) is provided. The FERAM (10) comprises a FET (11) and a ferroelectric capacitor (12). The FET (11) has a gate  
10 connected to a word line (14), a source coupled to a plate line (15) via the ferroelectric capacitor (12), and a drain connected to a bit line (16). The reading process begins by placing a predetermined amount of charge in a  
15 bit line capacitor (17), which in turn charges the ferroelectric capacitor (12) after the FET (11) is switched on, resulting in a voltage drop determined by data stored in the FERAM (10) at the bit line (16). A sense amplifier (18) adjusts the voltage at the bit line (16) accordingly to read data from the FERAM (10).  
20 Applying a voltage at the plate line (15) and switching the FET (11) off restore the data to the FERAM (10).

Figure 1 accompanies this abstract.