

MAGNETIC MEMORY ARRAY WITH PAIRED ASYMMETRIC MEMORY CELLS
FOR IMPROVED WRITE MARGIN

ABSTRACT

A nonvolatile magnetic memory array that uses magnetic memory cells (A,B) that are formed in two types of shapes is disclosed. The cells (A,B) lie at the intersections of rows and columns of electrically conductive lines, which serve as the conductive paths for the write currents used to change the magnetization states of the magnetic cells. The cells (A,B) have shapes that are mirror images of each other. Each of the cells (A,B) has a parallelogram shape with a length and a width with the predominant axis of magnetization lying substantially along a line between the acute corners of the parallelogram. The cells (A,B) are preferably arranged in the array in an alternating checkerboard pattern, which means that one type of cell is surrounded by neighbouring cells of the other type and there is substantially less likelihood that adjacent neighbouring cells will also be written to.

FIG 4