

ABSTRACT:MULTI-STAGE PER CELL MAGNETORESISTIVE RANDOM ACCESS MEMORY

5 A multi-state magnetoresistive random access memory unit (MRAM) having
a plurality of memory cells, each of the cells are written to and read from,
independently of other cells. The plurality of memory cells comprises a recording
layer as a pinned magnetic layer and a read layer as an unpinned layer. The
unpinned layer has a higher Curie point than the pinned layer. The pinned layer in
10 an individual cell is heated to near its Curie point and a bit line current and a word
line current is used to align the magnetization vector of the recording layer at a
plurality of angles relative to the magnetization vector of the read layer.

(Fig. 2)



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