

**MAGNETORESISTIVE SENSOR WITH A THIN ANTIFERROMAGNETIC LAYER
FOR PINNING ANTIPARALLEL COUPLED TABS**

ABSTRACT

A spin valve sensor with a thin antiferromagnetic (AFM) layer exchange coupled to a self-pinned antiparallel coupled bias layer in the lead overlap regions is provided. The spin valve sensor (500) comprises a ferromagnetic bias layer (522) antiparallel coupled to a free layer (516) in first and second passive regions (532, 534) where first and second lead layers (528, 530) overlap the spin valve sensor layers and a thin AFM layer (560) exchange coupled to the bias layer (522) to provide a pinning field to the bias layer (522).

Fig. 5.



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