

**MILLIACTUATOR WITH INTEGRATED SENSOR AND DRIVERS AND
METHOD OF MANUFACTURING THE SAME**

ABSTRACT

A milliactuator (20) integrated with a driver and relative position error sensor circuits formed on a single silicon substrate is disclosed. The integrated milliactuator/electronics module (50) is positioned between the suspension (26) and the slider/transducer assembly to provide rapid, small motion position control of the slider/transducer (56) over data tracks on the disk of a magnetic disk drive. Integration of the milliactuator electronics (50) with the milliactuator (20) reduces parasitic loading and interference problems with the magnetic transducer signals. Electronic circuits are built on a silicon wafer followed by deposition of a planarization layer and a ground plane layer for isolation from the milliactuator (20) which is then built on top of the circuits.

Fig 2



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