HAVING PARASITIC SHIELD FOR ELECTROSTATIC DISCHARGE PROTECTION

ABSTRACT

A magneto-resistive read head (107) having a "parasitic shield" (124) provides an alternative path for currents associated with sparkovers, thus preventing such currents from damaging the read head (107). The parasitic shield is provided in close proximity to a conventional magnetic shield. The electrical potential of parasitic shield (124) is held essentially equal to the electrical potential of the sensor element (111). If charges accumulate on the conventional shield, current will flow to the parasitic shield (124) at a lower potential than would be required for current to flow between the conventional shield and the sensor element (111). Alternatively, conductive spark gap devices are electrically coupled to sensor element leads and to each magnetic shield (113, 115). Each spark gap device is brought within very close proximity of the substrate to provide an alternative path for charge that builds up between the sensor element (111) and the substrate (119) to be discharged.

Fig. 6a