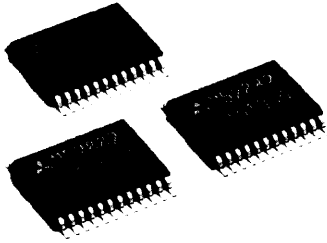


READ/WRITE AMPLIFIER OF THIN FILM HEAD FOR HDD OPERATES WITH A SINGLE 5V POWER SUPPLY. EMPLOYS 24-PIN SSOP SUITABLE FOR COMPACT HDD

M52882FP



DESCRIPTION

Along with the advancement of miniaturization and capacity increase of hard disk drives (HDD), thin film heads are increasingly used even for small HDDs in place of the conventional ferrite or MIG (Metal In Gap) heads. Compared with traditional MIG heads, the thin film head features high density recording and excellent high frequency characteristics.

Mitsubishi Electric has developed the read/write amplifier, M52882FP, which is applicable to thin film heads for compact HDDs. The M52882FP, which operates with a single 5V power supply and employs the compact package (24-pin SSOP), is most

suitable for compact HDDs. The device has achieved the low input capacitance (18pF) and low input conversion noise (0.6nV/√Hz). Two types of packages are available (20-pin SOP-300mil and 375mil) in addition to 24-pin SSOP.

This integrated semiconductor circuit has internal switching circuit to switch the dumping resistor for read and write operations, which was difficult to implement so far. The dumping resistor can be set at the most suitable values for read and write operations. In addition, a new circuit was employed to improve the offset variation of read amplifier output during mode switching, reducing the variation to approximately 10mV.

FEATURES

- Low Power Dissipation
Read 105mW
Write 160mW (except Iw)
Chip Disable 45mW
Power Save 5mW (max.)
- Capable of Driving up to 4 Heads
- The write current correction circuit allows switching of the write current in four stages by the TTL signal.

- The internal write inhibition function is provided in case of power supply failure.

APPLICATION

- Hard Disk Drives
24P2E: 24-Pin SSOP
20P2N: 20-Pin SOP, 300 mil
20P2V: 20-Pin SOP, 375 mil

Table 1 Package and Function

| Function | 24P2E | 20P2N | 20P2V |
|--------------------------|-------|-------|-------|
| Power save | ○ | ✓ | × |
| Write Current Correction | ○ | × | ✓ |

*The function differs slightly according to package type.

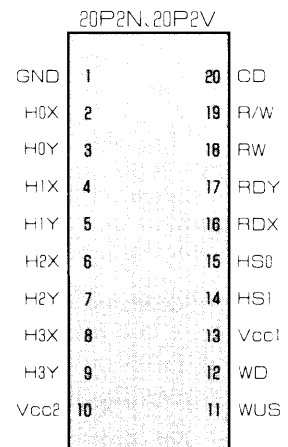
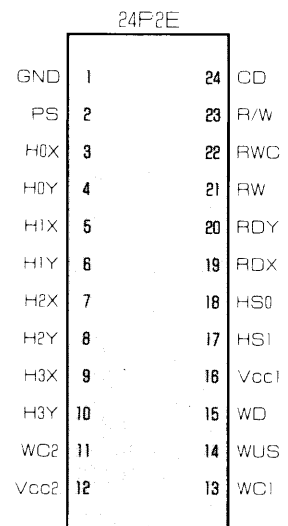


Fig. 2 Pin Configuration (Top View)

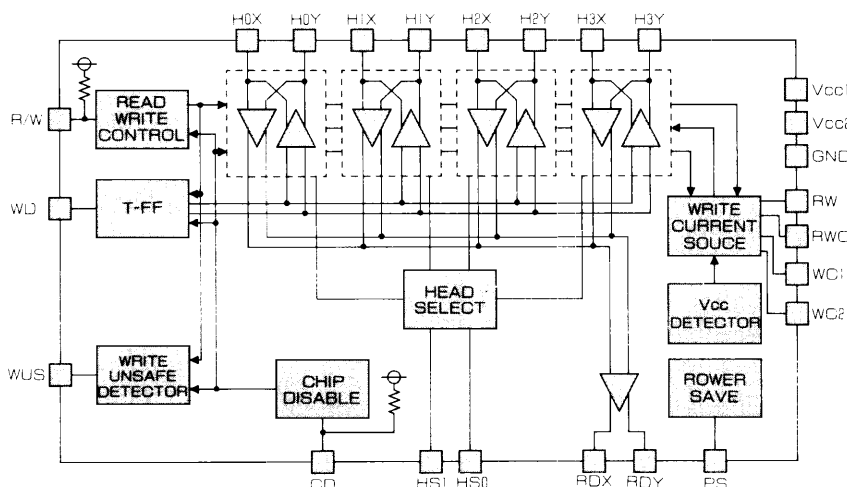


Fig. 1 Block Diagram (24P2E Type)