

June, 2000

DESCRIPTION

The TI SR1622AB is a BiCMOS monolithic integrated circuit designed for use with 4-terminal magneto-resistive read and thin film write composite recording heads. It provides a low noise 5 volt GMR head amplifier, GMR bias current control, thermal asperity detection and correction, GMR pin layer reset function, an 8 volt thin film write driver, write current control, and TFH fault detection circuit for up to four channels. The device features programmable read gain, write damping resistance and thermal asperity threshold level. The device allows multiple channel write functions for servo writing in the bank write mode. Control of features and thresholds is provided through a serial port interface. The SR1622AB requires a +5V and a +8V supply, and comes in a 38 TSSOP package. Part marking is SR1622AB. Note “/” in the part marking is a placeholder for a letter designating the manufacturing site.

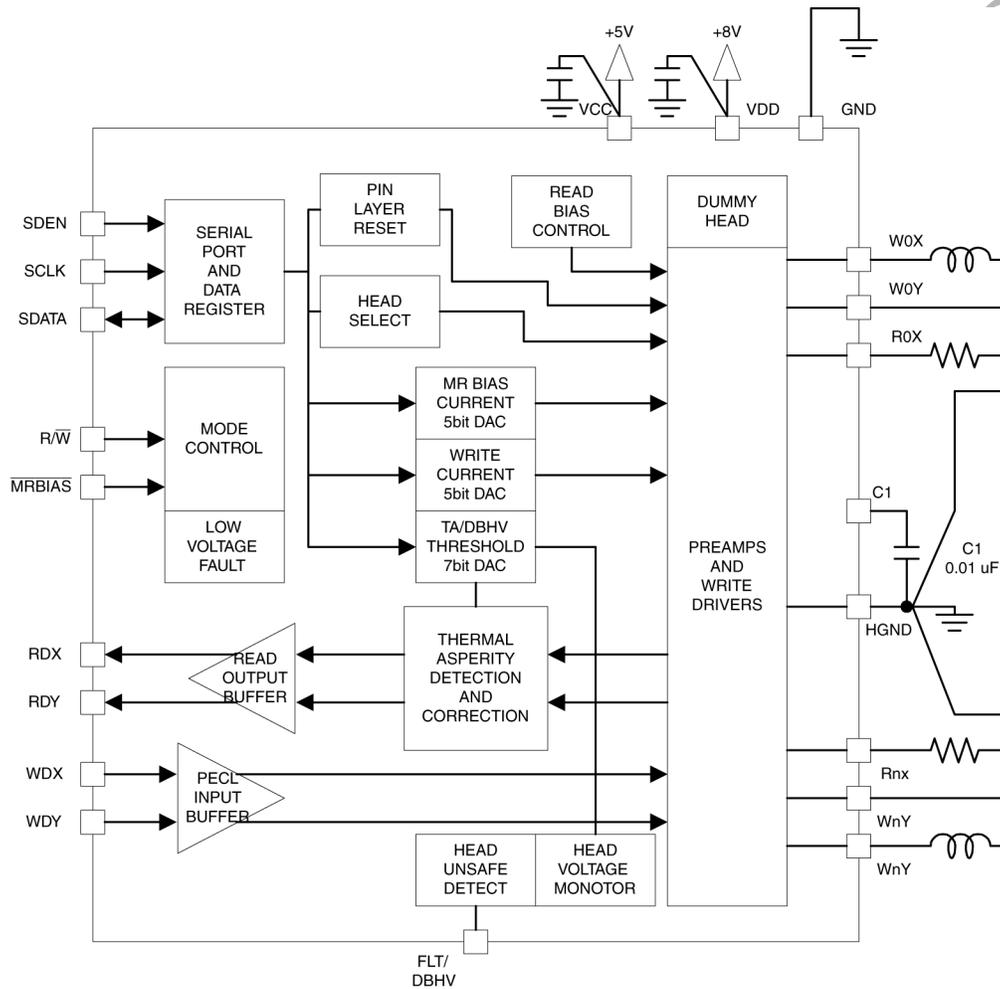
FEATURES

- One side grounded input, fully differential output
- Unselected Read/Write heads at GND potential
- Thermal asperity detection and compensation
- MR resistor measurement mode
- MR bias current range = 2 to 9.75mA (5bit) (all range guaranteed)
- MR resistor range =25 to 75 Ω
- Programmable read gain =150 V/V or 190 V/V @45 Ω , IMR=6 mA
- Input equivalent noise 1.1 nV/ $\sqrt{\text{Hz}}$ @45 Ω (TBD)
- Read Frequency boost
- Write current range = 16.17 to 61.20 mA (5bit)
- Active write damping
- Programmable write current boost control (2 bit)
- Programmable write current undershoot control (1 bit)
- Impedance matched differential write data input, no flip-flop
- Bank write mode
- Power fault protection
- 3.3 V CMOS compatible logic interface
- Fast write current rise/fall times = 0.9 ns (L_{tf} = 90 nH, R_{tf} = 18 Ω , I_w = 39.65 mA)
- GMR pin layer reset voltage pulse capability
- Internal reference resistor

SR1622AB

+5, +8V, 4-CHANNEL GMR READ/WRITE DEVICE

BLOCK DIAGRAM



TEXAS