



A Texas Instruments Company

TLS24B774PT/76PT/78PT 4/6/8-Channel Magneto Resistive Thin-Film Read/Write Preamplifiers

Preproduction

March 1997

FEATURES

- Current bias/current sense architecture
- Designed with LinIMPACT-C™ BiCMOS technology
- Operates from a single +5 V supply ($\pm 10\%$)
- Low power idle mode
- 4, 6 and 8 channel capability
- Single ended input to reader with one side grounded
- True differential read output
- Wide MR resistor range: $R_{mr} = 15 \Omega$ to 45Ω
- Programmable MR head bias current: $I_b = 7 \text{ mA}$ to 17 mA
- Gain of 200 V/V @ $R_{mr} = 25 \Omega$
- Bandwidth: $BW = 100 \text{ MHz}$ at -1 dB ($R_{mr} = 25 \Omega$), $BW = 160 \text{ MHz}$ at -3 dB ($R_{mr} = 25 \Omega$)
- Equivalent input noise:
 - $V_n = 0.55 \text{ nV}/\sqrt{\text{Hz}}$ @ $R_{mr} = 20 \Omega$
- PSRR 50 dB at 25 MHz (input referred) (TBD)
- Channel separation 70 dB at $f = 25 \text{ MHz}$ (TBD)
- Buffered head voltage (BHV) monitor
- PECL inputs for WDX and WDY
- Programmable write head current: $I_w = 0 \text{ mA}$ to 45 mA (0-p)
- Output capacitance = 8.5 pF for writer
- Fast rise/fall time 2.7 nS ($I_w = 30 \text{ mA}$ (0-p), $L_{tf} = 200 \text{ nH}$, $R_{tf} = 15 \Omega$, $L_{lead} = 50 \text{ nH}$)
- Multi-channel servo write available: every two channels
- MR bias on during write mode
- Fast recovery times:
 - W/R = $0.4 \mu\text{s}$ typical
 - R/W = 30 ns typical
- Read fault (RUS) and write fault (WUS) detection
- MR head open protection available
- MR head short detection (metal option)
- Thermal asperity compensation and programmable T/A threshold available
- Input control lines:
 - Head select, with internal pull-up resistors
 - R/XW with internal pull-up resistor
 - XCS with internal pull-up resistor
 - BHV/SE with internal pull-down resistor
- 48-Lead (4,6 and 8-channel) TQFP packages
- The device is optimized for Package-On-Arm application

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4/6/8-Channel Magneto Resistive

Thin-Film Read/Write Preamplifiers

BLOCK DIAGRAM

