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## 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
- 2 and 6 channel capability
- Single ended input to reader with one side grounded
- True differential read output
- Wide MR resistor range:  $R_{mr} = 10 \Omega$  to  $40 \Omega$
- Programmable MR head bias current:
  - $I_b = 7 \text{ mA}$  to  $17 \text{ mA}$
- Gain of  $230 \text{ V/V}$  @  $R_{mr} = 20 \Omega$
- Bandwidth:
  - $BW = 65 \text{ MHz}$  at  $-1 \text{ dB}$  ( $R_{mr} = 20 \Omega$ )
  - $BW = 140 \text{ MHz}$  at  $-3 \text{ dB}$  ( $R_{mr} = 20 \Omega$ )
- Equivalent input noise:
  - $V_n = 0.55 \text{ nV}/\sqrt{\text{Hz}}$  @  $R_{mr} = 20 \Omega$
- PSRR  $50 \text{ dB}$  at  $25 \text{ MHz}$  (input referred)
- Channel separation  $70 \text{ dB}$  at  $f = 25 \text{ MHz}$
- Buffered head voltage (BHV) monitor
- PECL inputs for WDX and WDY
- Write data divided-by-2 (FF) circuit available (metal option, disabled)
- Programmable write head current:
  - $I_w = 10 \text{ mA}$  to  $35 \text{ mA}$  (base to peak)
- Output capacitance =  $8.5 \text{ pF}$  for writer
- First rise/fall time  $3.7 \text{ ns}$  ( $I_w = 25 \text{ mA}$  (0-p),  $L_{tf} = 180 \text{ nH}$ ,  $R_{tf} = 15 \Omega$ ,  $L_{lead} = 50 \text{ nH}$ )
- Multi-channel servo write:
  - Upper or lower half, every two channels, or all
- Fast recovery times:
  - $W/R = 0.8 \mu\text{s}$  typical ( $\overline{IBON} = L$ )
  - $R/W = 50 \text{ ns}$  typical
- Read fault (RUS) and write fault (WUS) detection
- MR head short protection available (metal option, disabled)
- Thermal asperity detection available (metal option, disabled)
- MR bias on during write mode. Programmable on/off ( $\overline{IBON}$ ).
- Input control lines:
  - Head select, with internal pull-up resistors
  - $\overline{R/W}$  with internal pull-up resistor
  - $\overline{CS}$  with internal pull-up resistor
  - $\overline{IBON}$  with internal pull-down resistor
- Plastic 30-Pin (2-channel) and 38-Pin (6-channel) TSSOP packages
- The device is optimized for package-on-arm application

# **TLS24302/06** **2- and 6-Channel Magneto Resistive/ Thin-Film Read/Write Preamplifiers**

## **BLOCK DIAGRAM**

