

January 1994

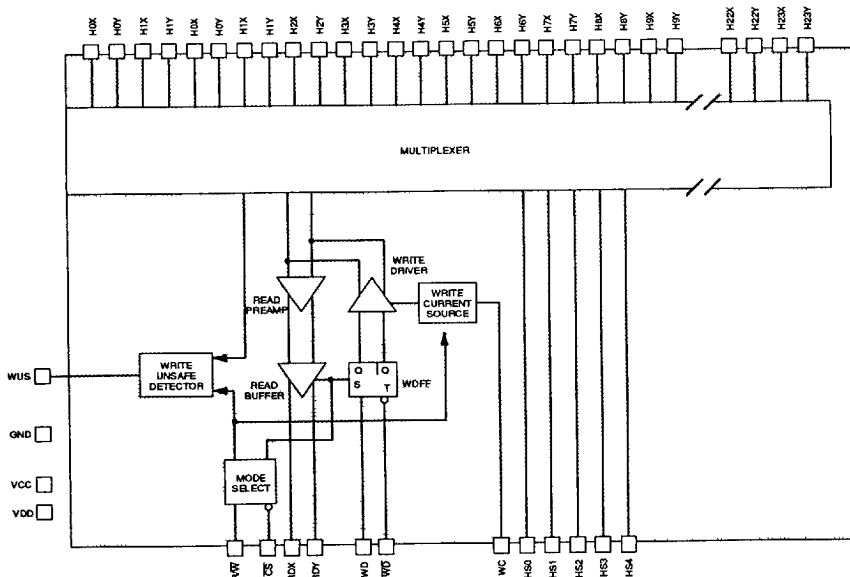
## DESCRIPTION

The SSI 32R2110R/2111R is a BiCMOS monolithic integrated circuit designed for use with two-terminal recording heads. It is intended for use in hard disk drive designs which require data rates exceeding 48 Mbit/s. It provides a low noise read amplifier, write current control, and data protection circuitry for 24 channels. The SSI 32R2110R/2111R provides internal 320 $\Omega$  damping resistors that are switched in during Write mode and switched out during Read mode. Power supply fault protection is provided by disabling the write current during power sequencing. System write-to-read recovery time is significantly improved by controlling the read channel common mode output voltage shift in the Write mode. The device provides the user with a controllable write-current adjustment feature with a current gain of 25x. The device also provides a multiple channel "servo bank write" capability which is useful during servo writing. The 32R2110R has a differential PECL write-data input, whereas the 32R2111R uses a single-ended TTL pin.

## FEATURES

- **+5V, +12V  $\pm$ 10% supply**
- **Low power**
  - PD = 235 mW read mode (Nom)
  - PD = 12 mW idle (Max)
- **High Performance:**
  - Read mode gain = 250 V/V
  - Input noise = 0.45 nV/ $\sqrt{\text{Hz}}$  (Nom)
  - Input capacitance = 12 pF (Nom)
  - Write current range = 10-40 mA
  - Max write current rise/fall time = 7 nsec (typ. head)
  - Head voltage swing = 10Vpp (min), 12V typ.
- **Servo bank-write capability**
- **Unselected heads are at GND potential**
- **Self-switching damping resistance**

### BLOCK DIAGRAM



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# SSI 32R2110R/2111R

## 10-Channel Two Terminal

### Thin-Film Read/Write Device

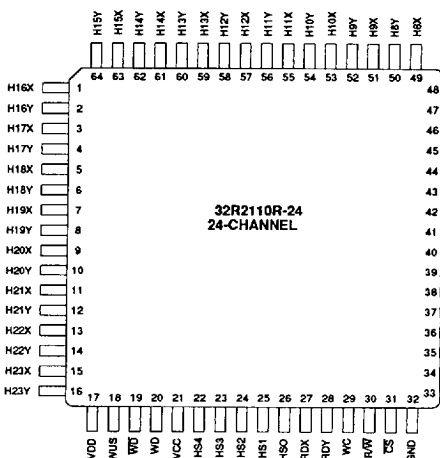
#### FEATURES (continued)

- Designed for two-terminal thin-film or MIG heads with inductance up to 1.0  $\mu$ H
- Write unsafe detection
- Power supply fault protection
- Head short to ground protection
- Differential ECL-like write data input
- 64-Lead TQFP package

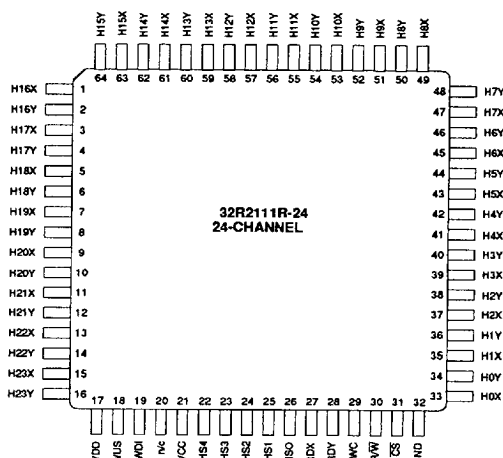
#### PACKAGE PIN DESIGNATIONS

(Top View)

CAUTION: Use handling procedures necessary for a static sensitive component.



24-Channel  
64-Lead TQFP (PECL Input)



24-Channel  
64-Lead TQFP (TTL Input)

**Advance Information:** Indicates a product still in the design cycle, and any specifications are based on design goals only. Do not use for final design.

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Patent Pending  
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