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DESCRIPTION

The SSI 32P4912 is a high performance BiCMOS read channel IC that provides all of the functions needed to implement an entire Partial Response Class 4 (PR4) read channel for zoned recording hard disk drive systems with data rates from 42 to 125 Mbit/s or 33 to 100 Mbit/s. Functional blocks include AGC, programmable filter, adaptive transversal filter, Viterbi qualifier, 8,9 GCR ENDEC, data synchronizer, time base generator, and 4 or 6 burst servo. Programmable functions such as data rate, filter cutoff, filter boost, etc. are controlled by writing to the serial port registers so no external component changes are required to change zones. The part requires a single +5V power supply. The SSI 32P4912 utilizes an advanced BiCMOS process technology along with advanced circuit design techniques which result in high performance devices with low power consumption.

FEATURES

GENERAL

- Register programmable data rates from 42 to 125 Mbit/s or 33 to 100 Mbit/s
- Sampled data read channel with Viterbi qualification
- Programmable filter for PR4 equalization
- Five tap transversal filter with adaptive PR4 equalization
- 8/9 GCR ENDEC
- Data Scrambler/Descrambler
- Presetable Precoder State
- Programmable write precompensation
- Low operating power (0.925W typical at 5V)
- Register programmable power management (<5 mW power down mode)
- 4-bit nibble and byte wide bi-directional NRZ data interfaces
- 4 or 6 burst servo capture using peak detection
- 8-bit direct write mode automatically configured for $RCLK = VCO/8$
- Serial interface port for access to internal program storage registers
- Single power supply ($5V \pm 10\%$)
- 100-lead TQFP packages

SSI 32P4912

PRML Read Channel with PR4, 8/9 ENDEC, 4 or 6 Burst Servo

BLOCK DIAGRAM

