Silicon Systems®

A Texas Instruments Company

SSI 34P3214

Read Channel for High Density Floppy and Disk/Tape Drives

Prototype

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DESCRIPTION

The SSI 34P3214 is a high performance BiCMOS single chip read channel IC that contains all the functions needed to implement zoned recording for high density floppy disk drive and tape applications. Functional blocks include the pulse detector, programmable filter, servo demodulator, time base generator, and data synchronizer. VCO range of 0.6 MHz to 13 MHz is selectable through the serial port. Programmable functions of the SSI 34P3214 device are controlled through a bi-directional serial port and banks of internal registers. This allows zoned recording applications to be supported without changing external component values from zone to zone. The SSI 34P3214 utilizes an advanced BiCMOS process technology along with advanced circuit design techniques which result in a high performance device with low power consumption. The SSI 34P3214 supports a sleep mode for minimal power dissipation in non-operational periods. The SSI 34P3214 is available in a 64-lead TQFP package.

FEATURES

- **Complete zoned recording application support**
- **VCO range: 0.6 MHz to 13 MHz selectable through the serial port**
- **Supports 1,7 RLL, MFM, FM, and GCR encoding format**
- **Fast attack/decay modes for rapid AGC recovery**
- **Dual rate charge pump for fast transient recovery**
- **Programmable cutoff frequency of 0.4 to 4 MHz in data mode and servo mode**
- **Tracking threshold for rapid LEVEL discharge**
- **Time base generator with better than 1% frequency resolution**
- **Fast acquisition phase lock loop with zero phase restart technique**
- **Fully integrated data synchronizer with programmable window shift control**
- **4-burst servo capture with A, B, C, D outputs**
- **Bi-directional serial port for register access**
- **Register programmable power management (sleep mode <8 mW)**
- **Separate settings for filter cut-off, filter boost, AGC bypass capacitor and hysteresis threshold for data mode and servo mode**
- **Low operating power (400 mW typical @ 5 V)**

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BLOCK DIAGRAM