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## DESCRIPTION

The SSI 32H6840 Advanced Servo and Spindle Predriver with DSP is a CMOS monolithic integrated circuit housed in a 128-lead QFP package, operates at five volts, provides control signals for external MOSFETs operating at twelve volts, and includes all key functionality necessary to implement the control of a hard disk drive spindle motor and head positioning servo. The device includes an industry standard compatible DSP core, data acquisition and conversion, predriver control of brushless, three-phase spindle motors without sensors using Silicon Systems' SilentSpin<sup>™</sup> technology, predriver control of voice coil positioning motor, and power fault detection circuits. The integrated DSP is code compatible with the TMS320C25<sup>™</sup> and includes internal program and data RAM.

## FEATURES

- **Integrated TMS320C25<sup>™</sup> code compatible 15 MIPS DSP core**
- **1568 words of configurable internal program and data memory**
- **Full external DSP bus for peripherals**
- **Relocatable on-chip peripheral paging**
- **Automatic wait state generation for external ROM, RAM, and peripherals**
- **1  $\mu$ s, 10-bit A/D with 8 input MUX**
- **Two 10-bit voltage D/As with references**
- **16-bit D/A in cascade mode**
- **Auto and manual A/D convert modes**
- **SilentSpin<sup>™</sup> spindle predriver**
- **12-bit pulse density PWM spindle D/A**
- **Spindle speed period counter**
- **Synchronized spindle master speed and phase counters**
- **Programmable brake delay**
- **Class B VCM predriver**
- **Error summing amplifier saturation detector**
- **Dual level retract for VCM**
- **Compatible with Silicon Systems' PRML Read Channel 32P49xx family**
- **Precision low voltage +5V and +12V monitors with velocity limited retract**
- **Extensive power saving modes**

# SSI 32H6840

## Advanced Servo and Spindle Predriver with DSP

### BLOCK DIAGRAM

