



DESCRIPTION

The LD7000 Servo and Spindle Pre-driver, a CMOS monolithic integrated circuit housed in a 64-lead TQFP package operates from +5 V and +12 V supplies. It is designed to drive a voice coil actuator and a 3-phase, Hall-sensorless motor with **external power MOSFETs**. The device is intended for use in 12 V disk drive applications.

The actuator driver includes a saturation detector to monitor the loop compensation amplifier for saturation, an uncommitted opamp for input signal conditioning, a voltage reference to provide a precise voltage level for internal PWM buffers, and reduced power dissipation.

The spindle driver includes a μ P controlled startup ramp to replace the imprecise analog ramp, an external PWM input to allow PWM frequencies above the audible range, active pullup on the P driver, adjustable N-channel slew rate, and improved spindle brake performance.

A precision low voltage monitor circuit is also added to monitor +5 V and +12 V supplies and to initiate servo head retracts during voltage faults. All functions are controlled by an SSI compatible read/write serial port.

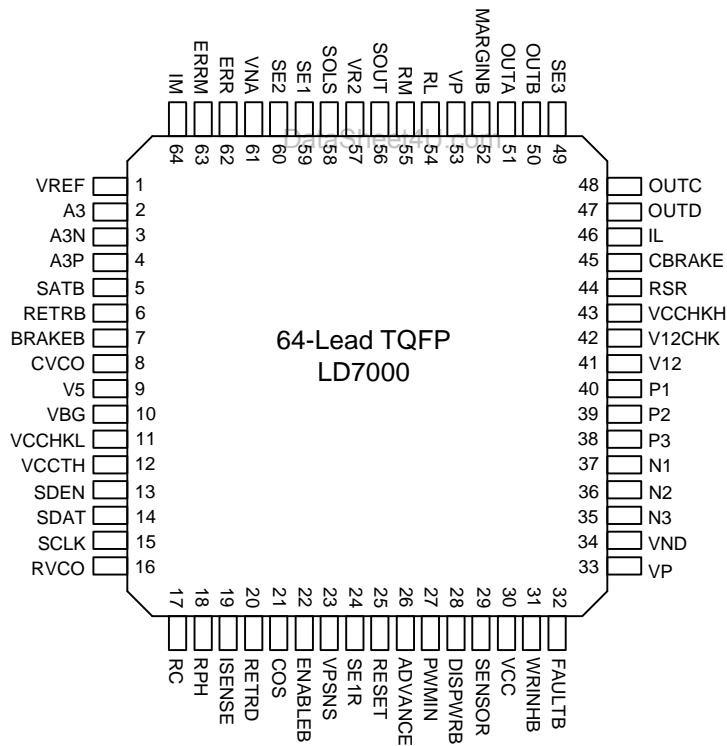
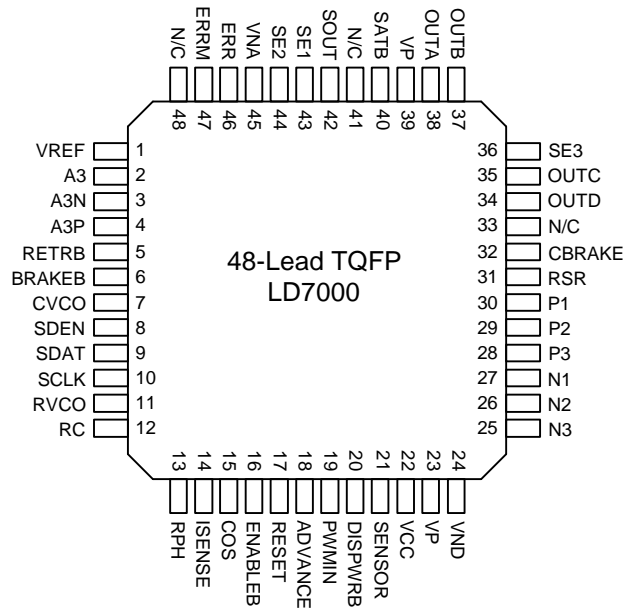
Three DC-DC converter circuits for 2.5V, 3.3V, & -3/-5V supplies are also available for digital chips and MR bias negative supply.

FEATURES

- Small footprint 64 or 48 pin TQFP package
- Spindle driver is PWM during run and start
- Commutator is driven by a phase lock loop for high jitter immunity
- Adjustable slew rate to minimize stress in the power MOSFETs
- Microprocessor controlled spindle startup
- Saturation detector to monitor loop compensation amplifier status
- Precision low voltage monitor circuitry for both +5 V and +12 V supplies, LD7000 only
- Dual level retract scheme includes adjustable pulse mode, LD7000 only
- Serial Port control



LD7000 Spindle/VCM Controller and Pre-driver



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