
Features

- Operates from Single Supply: 3.3V
- Small Footprint 64-Pin TQFP Package or Flip Chip
- Precision Low-voltage Monitor Circuitry for the Power Supply
- Master Power on Reset
- Serial Port Interface with Read-back Capability
- Over-temperature Protection/Warning
- Shock Sensor Signal Processing
- On-chip 1.8V, 2.5V and -3V Regulators
- Low Power Consumption, 9 mA in Normal Run Mode
- Spindle Driver
 - Commutator is Driven by a FLL for High Immunity to Jitter
 - Programmable 10-bit DAC
 - Adjustable Slew Rate Control
 - External Startup Capability
 - 0.4A Current Capability with $R_{on} = 1.4\Omega$
 - Digital Commutation Delay and Blanking
 - Programmable Delay from BEMF Zero Crossing
 - External INDEX Signal for Spin Lock
 - Active Spindle Braking Capability
- VCM Driver
 - 0.4A Current Capability with $R_{on} = 2.2\Omega$
 - Programmable 14-bit DAC
 - Ramp Load/Unload Capability with 10-bit ADC
 - Programmable VCM Current Controlled by Sense Resistor
- Packaging: Variety Available Depending on Customer Needs

Description

The AT78C7015 is a CMOS monolithic device that integrates Spindle and VCM controllers as well as power stages into one chip. The device operates from 3.3V power supply. The AT78C7015 is designed for a small-form-factor hard disk drive application.

A precision low-voltage detection circuit monitors the power supply and initiates VCM retract at voltage fault condition. A 3-line serial port interface with read back capability provides interface to the microprocessor.

The Spindle driver features a transconductance amplifier, a current sense amplifier, power output drivers, sequencer, internal delay/masking logic, Spindle brake circuit, FLL, and charge-pump for locking the spindle to the programmed rotational speed.

The VCM driver features a transconductance amplifier, differential input current sense amplifier, ramp load/unload capability, and power output amplifier.



Spindle/VCM Motor Controller/ Drivers

AT78C7015

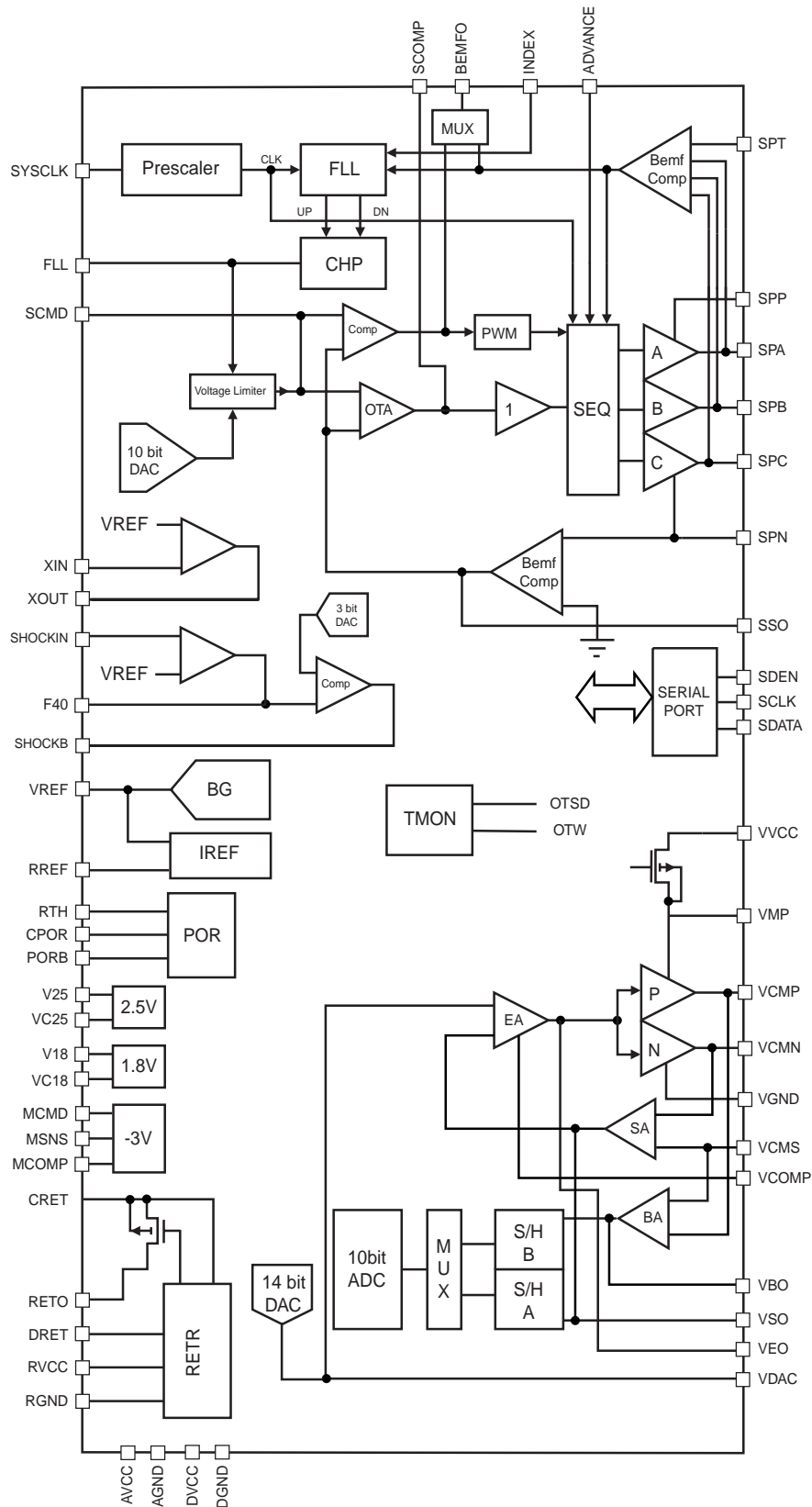
Summary

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Note: This is a summary document. A complete document is available under NDA. For more information, please contact your local Atmel sales office.

Figure 1. AT78C7015 Block Diagram





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3439AS-NETST-2/04