

VC2100 High-Performance Spindle/VCM Control

Features

VCM Actuator Driver

- 0.325 Ω worst-case value internal power device
- Transconductance amplifier with class AB mode
- 14-bit DAC for actuator current control
- Programmable closed loop retract for ramp load/unload on voltage fault or command
- Programmable on-chip transconductance compensation reduces external component count

Spindle Control

- 0.325 Ω worst-case value internal power device
- Motor inductance sense mode for determination of motor start position
- Microprocessor controlled ramp-to-start speed in start mode
- Sinusoidal current mode or 6-state commutation in run mode
- Programmable wave shape for optimized acoustic performance
- Transconductance configuration in run mode, using PWM for efficiency
- Peak current limit control in start mode, using constant off-time method
- 10-bit DAC with 4-step gain ranging
- Fast restart from partial spindown, using phase frequency comparison of BEMF

Serial Port Interface

- 30 MHz read/write serial port
- 3.3 V TTL compatible digital I/O, 5 V CMOS input tolerant

Voltage Monitor, System Reset, and Auxiliary Supplies

- 5 V, 12 V, and 3.3 V undervoltage fault comparators

- Power on reset signal output
- 3.3 V regulator with voltage margin control and current limit
- Resistor adjustable negative voltage regulator for MR preamplifiers
- Programmable output voltage switching and linear regulators with undervoltage monitoring

Other Features

- On-chip 0.150 Ω worst-case value isolation power device
- 12-bit DAC to drive external microactuator driver
- 10-bit ADC to digitize selected internal and external signals
- Special diagnostic features for observation of on-chip signals
- Supports programmable constant voltage retract

Pin Information

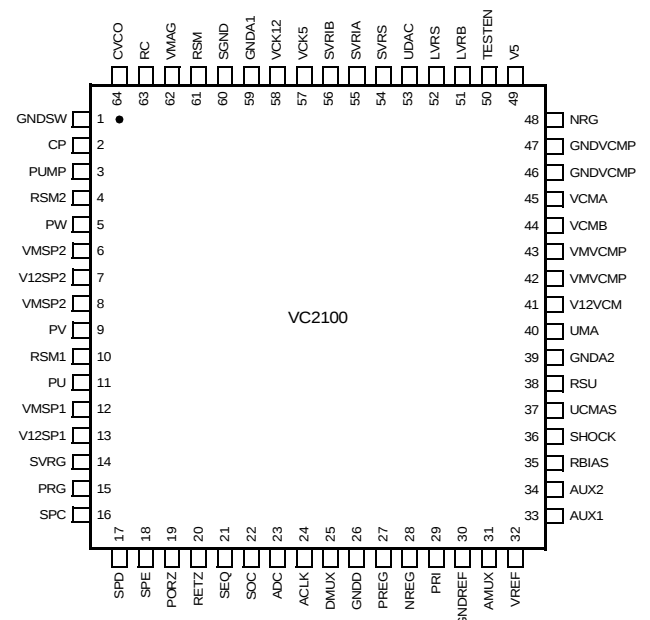
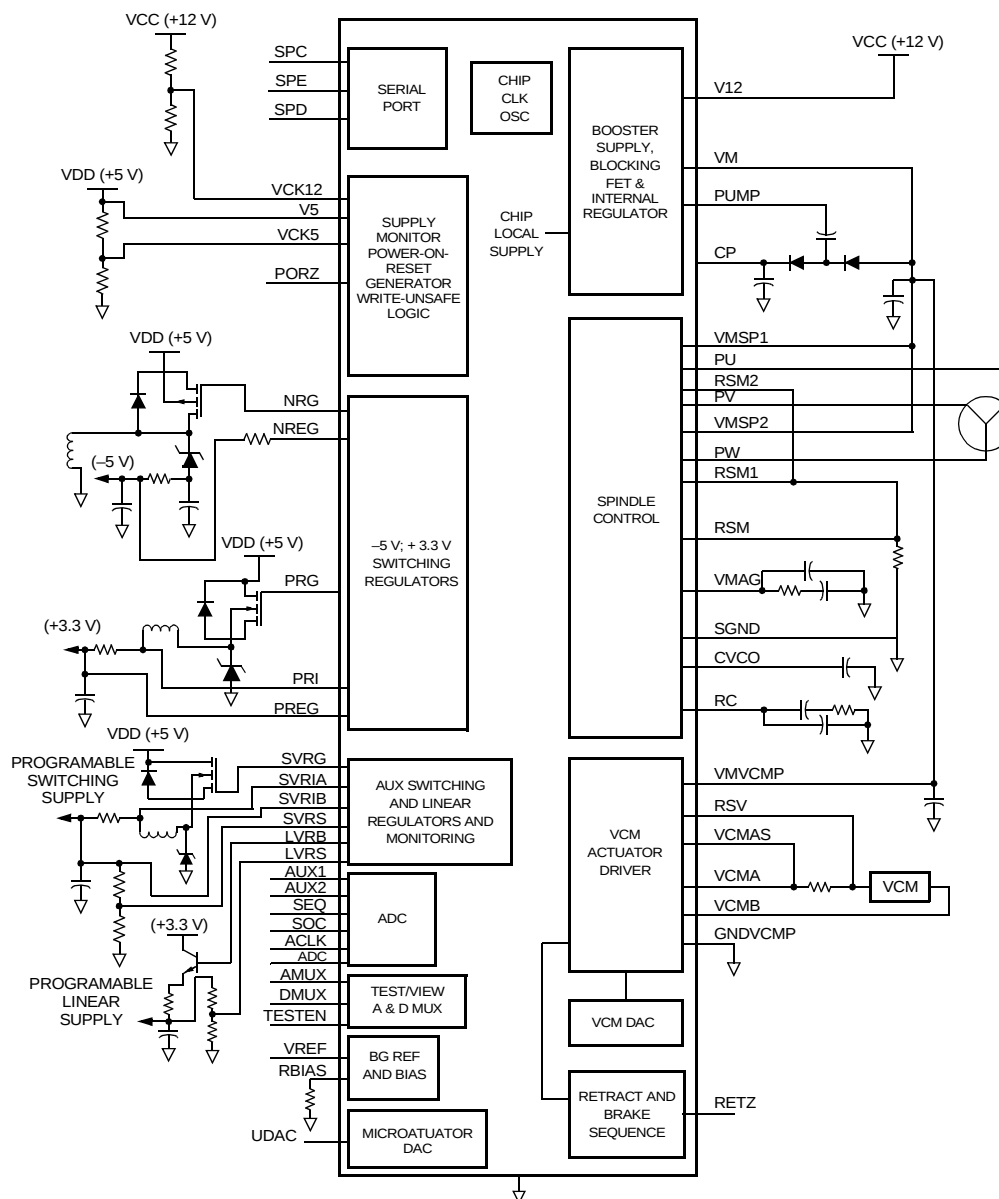


Figure 1. VC2100 Pin Diagram (64-Pin eTQFP)

Block Diagram



2720 (F)

Figure 2. VC2100 Block Diagram

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