

ANALOG PRODUCTS

MC33701 FACT SHEET



APPLICATIONS

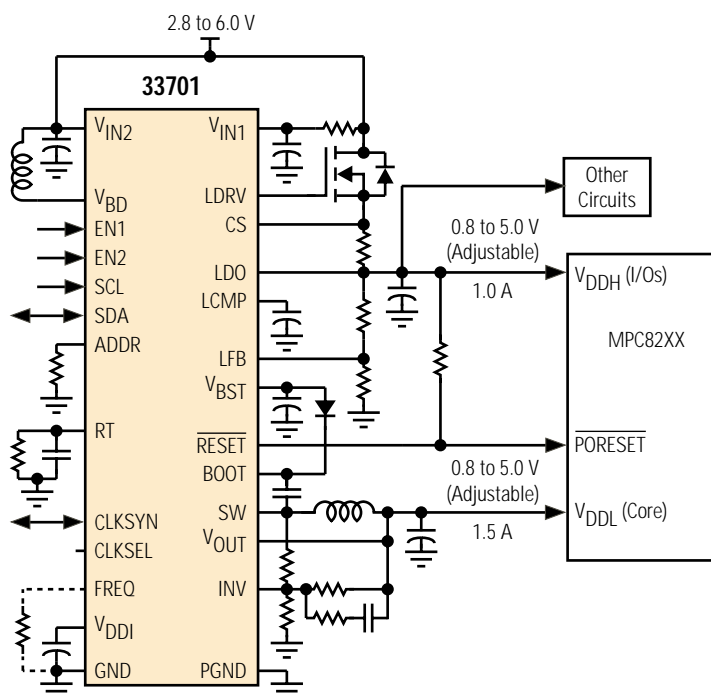
- Power Management of Advanced Microprocessor Based Systems
- Telecom and Network Cards
- Wireless Modems
- ADSL Line Cards
- Cable Modems
- Li-ion Cell Equipment
- Portable Equipment

33701 MICROPROCESSOR POWER SUPPLY (1.5 A)

The 33701 is a monolithic IC providing an efficient means of obtaining power for the Motorola Power QUICC I and II microprocessor families and other advanced microprocessors. The IC incorporates a high-performance synchronous switching regulator. The regulator is capable of delivering 1.5 A to power the microprocessor's core and linear circuitry to control an external low-drop FET for powering the microprocessor's I/O operations. Both regulator output voltages are independently adjustable.

A boost converter allows high-accuracy output voltages to be developed from source operating voltages as low as 2.8 V. Seven $\pm 1.0\%$ Output Voltage Margining steps are provided to facilitate easy system development.

Simplified Application Diagram



FEATURES

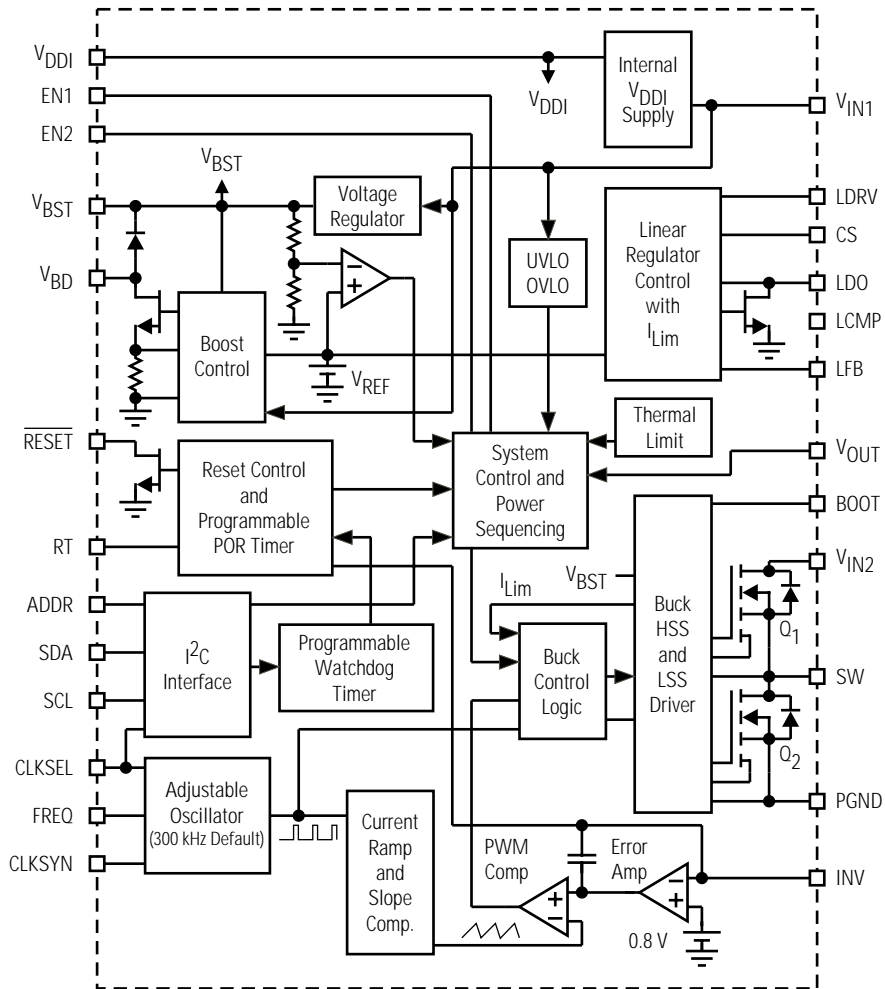
- I²C with address register selection for programming control
- Programmable internal Watchdog and Power-ON Reset to ensure MCU performance integrity
- Synchronous buck converter with cycle-by-cycle PWM current mode control for enhanced output voltage accuracy
- Boost converter for enhanced low-voltage performance
- Adjustable switching regulator output voltage via external resistor divider
- External RC programmed Reset Power-UP Delay timer
- Additional devices available for comparison in Analog Selector Guide SG1002/D

CUSTOMER BENEFITS


- High-performance power source supporting advanced microprocessors
- High-efficiency step-down switching regulator
- Reduced PC board space resulting in enhanced application reliability and lower costs
- Self-contained Watchdog with Power-ON Reset
- Predictable up/down power sequencing to ensure CPU integrity
- Flexible application protection and programmable performance features
- Voltage margining for easy system development

Performance	Typical Values
Operating Voltage	2.8 V to 6.0 V
Output Voltages:	
SW (Adjustable)	0.8 to 5.0 V @ 1.5 A
LDO (Adjustable)	0.8 to 5.0 V @ 1.0 A
Voltage Margining	7 ± 1.0% steps
Buck Converter	
Line & Load Reg.	± 1.0%
Current Limit	3.0 A
PWM Freq. (Adjustable)	200 to 400 kHz
Operating Temp	-40°C ≤ T _A ≤ 105°C

33701 Internal Block Diagram

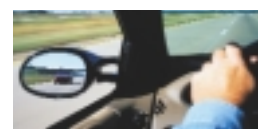


Protection	Detect	Limiting	Shut Down	Auto Recovery
Input Under Voltage	•		•	
Output Over Voltage	•	•		
Output Under Voltage	•		•	
Over Current/SC	•	•	•	
Over Temperature	•		•	•

Ordering Information	Package	Ship Method	Motorola Part Number
	32 SOICW	Rail T/R	**33701DWB **33701DWBR2
Data Sheet Order Number			MC33701/D
Contact Sales for Evaluation Kit Availability			
**Prefix Index: PC = Eng Samples; XC = In Qual; MC = Production			

QUESTIONS

- Do you need an accurate power management IC to power an advanced micro-processor?
- Do you have little PC board space available for power management?
- Are you looking for an easy-to-design power management IC with protection and operating features that can be performance programmed?



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