CS51312

Synchronous CPU Buck Controller for 12 V Only Applications

The CS51312 is a synchronous dual NFET Buck Regulator Controller. It is designed to power the core logic of the latest high performance CPUs and ASICs from a single 12 V input. It uses the V^2™ control method to achieve the fastest possible transient response and best overall regulation. It incorporates many additional features required to ensure the proper operation and protection of the CPU and Power system. The CS51312 provides the industry's most highly integrated solution, minimizing external component count, total solution size, and cost.

The CS51312 is specifically designed to power Intel's Pentium® II processor and includes the following features: 5−bit DAC with 1.2% tolerance, Power−Good output, overcurrent hiccup mode protection, overvoltage protection, V_{CC} monitor, Soft Start, adaptive voltage positioning, adaptive FET non−overlap time, and remote sense. The CS51312 will operate over a 9.0 V to 20 V (V_{CC2}) range using either single or dual input voltage and is available in 16 lead narrow body surface mount package.

Features

- Synchronous Switching Regulator Controller for CPU V_{CORE}
- Dual N−Channel MOSFET Synchronous Buck Design
- V^2 Control Topology
- 200 ns Transient Loop Response
- 5−Bit DAC with 1.2% Tolerance
- Hiccup Mode Overcurrent Protection
- 40 ns Gate Rise and Fall Times (3.3 nF Load)

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