Multi-Phase Core Controller for Intel® Mobile CPUs

Preliminary Technical Data — ADP3205

FEATURES

Pin Programmable 1, 2 or 3 Phase Operation
Excellent Static and Dynamic Current Sharing
Superior Load Transient Response when used with ADOPT™ Optimal Positioning Technology
Noise-Blanking for Speed and Stability
Synchronous Rectification Control for Optimized Light Load Efficiency
Soft DAC Output Voltage Transition for VID Change
Cycle-by-Cycle Current Limiting
Latched or Hiccup Current Overload Protection
Masked Power Good during Output Voltage Transients
Soft Start-up without Power-On In-Rush Current Surge
Two Level Over-Voltage and Reverse-Voltage Protection

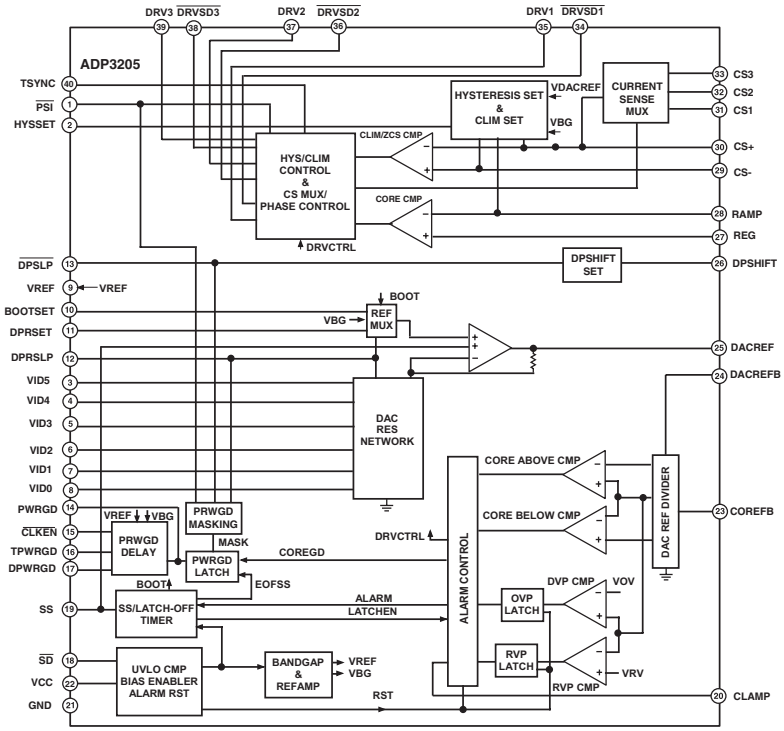
APPLICATIONS

Next Generation Intel Mobile CPU Core DC/DC Converters
Programmable Output Power Supplies

GENERAL DESCRIPTION

The ADP3205 is a 1, 2, or 3 phase hysteretic peak current mode DC-DC buck converter controller dedicated to power a mobile processor's core. The chip optimized low voltage design runs from the 3.3 V system supply. The chip contains a precision 6-bit DAC whose nominal output voltage is set by VID code. The ADP3205 features high-speed operation to allow a minimized inductor size that results in the fastest change of current to the output. To further minimize the number of output capacitors, the converter features active voltage positioning enhanced with ADOPT optimal compensation to ensure a superior load transient response. The output signals interface with ADP3415 MOSFET drivers that are optimized for high speed and high efficiency. The ADP3205 is capable of providing synchronous rectification control to extend battery lifetime in light load conditions.

FUNCTIONAL BLOCK DIAGRAM



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