

FAN5029

8-Bit Programmable 2- to 5-Phase Synchronous Buck Controller

Features

- Selectable 2-, 3-, 4-, or 5-phase operation at up to 1 MHz per phase
- ± 8 mV worst-case differential sensing error over temperature
- Logic-level PWM outputs for interface to external high-power drivers
- Active current balancing between all output phases
- Built-in power good/crowbar blanking supports on-the-fly VID code changes
- Digitally programmable 0.5 V to 1.6 V output supports both VR10 and VR11 specifications
- Programmable short circuit protection with programmable latch-off delay

Applications

- Desktop PC/Server power supplies for next generation Intel processors
- VRM modules

Description

The FAN5029 is a highly efficient multi-phase synchronous buck switching regulator controller optimized for converting a 12V main supply into the core supply voltage required by high performance Intel processors. It uses an internal 8-bit DAC to read voltage identification (VID) code directly from the processor, which is used to set the output voltage between 0.5V and 1.6V. It uses a multi-mode PWM architecture to drive the logic-level outputs at a programmable switching frequency that can be optimized for VR size and efficiency. The phase relationship of the output signals can be programmed to provide 2-, 3-, 4-, or 5-phase operation, allowing for the construction of up to five complementary buck switching stages.

The FAN5029 also includes programmable no-load offset and slope functions to adjust the output voltage as a function of the load current, so that it is always optimally positioned for a system transient. The FAN5029 also provides accurate and reliable short circuit protection, adjustable current limiting, and a delayed Power Good output that accommodates on-the-fly output voltage changes requested by the CPU.

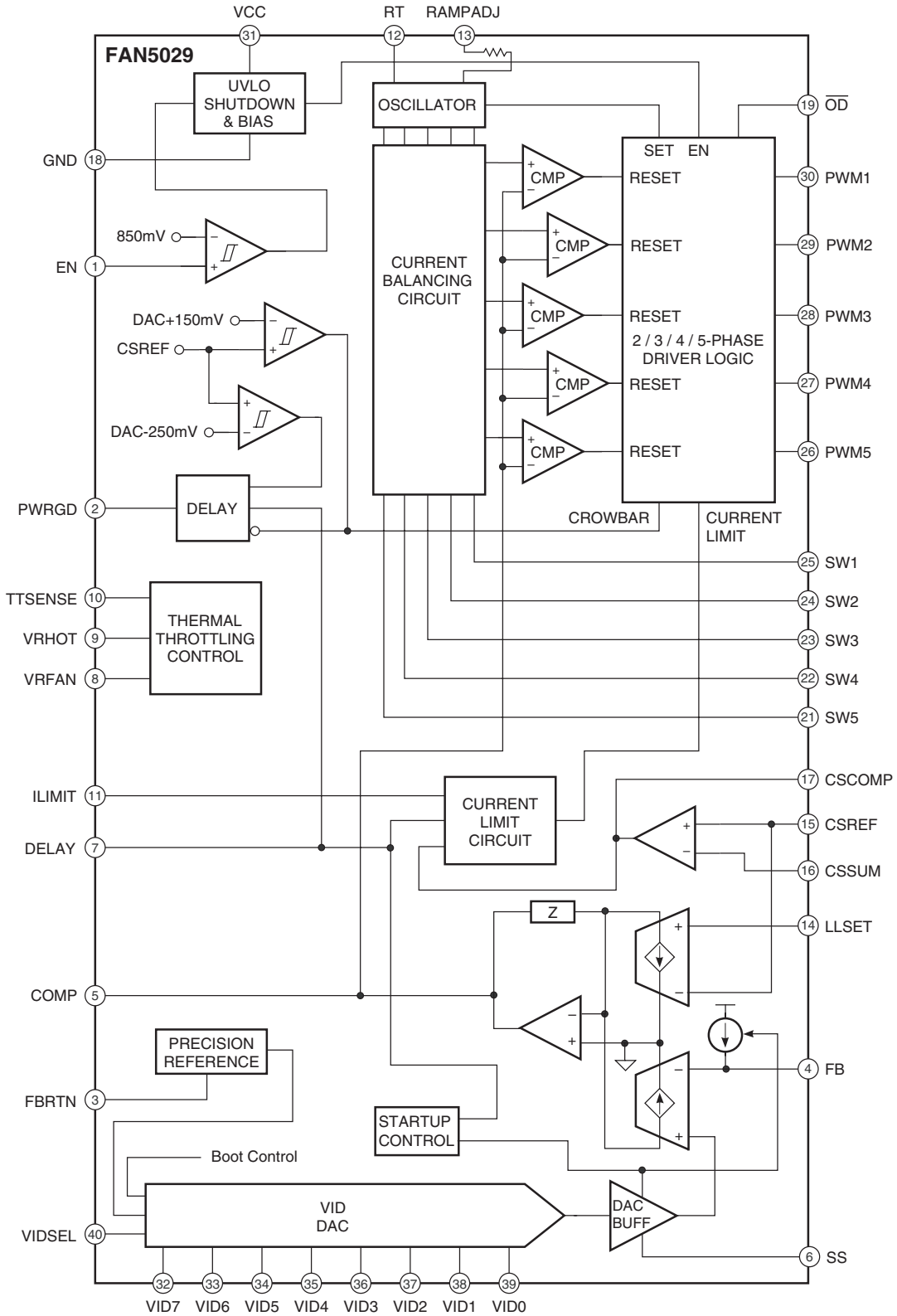
FAN5029 is specified over the extended commercial temperature range of 0°C to +85°C and is available in a 40-lead MLP package.

For more information, please contact
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Related Products

- [FAN5109MX](#) – Dual Bootstrapped 12V MOSFET Driver
- [FAN5068](#) – DDR-1/DDR-2 plus ACPI Regulator Combo
- [FAN5069](#) – PWM and LDO Controller Combo
- [FAN6520A](#) – Single Synchronous Buck PWM Controller

Block Diagram



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Rev. 117