

ISL95869

3-Phase Controller with Integrated Drivers Supporting Intel IMVP9 CPUs

The [ISL95869](#) is fully compliant with Intel IMVP9 specifications and provides a complete solution for the processor's main input rail power supply. It provides a Voltage Regulator (VR) with two integrated and one external gate drivers. The VR can be configured as 3-, 2-, or 1-phase, providing maximum flexibility. The VR uses the serial control bus (SVID) to communicate with the CPU and achieves lower cost and smaller board area.

Based on the Renesas Robust Ripple Regulator (R3™) technology, the R3 modulator has many advantages compared to traditional modulators. These advantages include faster transient settling time, variable switching frequency in response to load transients, and improved light load efficiency due to Diode Emulation mode with load-dependent low-switching frequency.

The ISL95869 has several other key features. The output supports DCR current sensing with single NTC thermistor for DCR temperature compensation or accurate resistor current sensing. The output comes with remote voltage sense, programmable V_{BOOT} voltage, programmable I_{CCMAX} , programmable voltage transition slew rate, adjustable switching frequency, overcurrent protection, and VR_READY power-good output. The ISL95869 supports the system input power (PSYS) monitoring with alternate VSYS mode. The controller complies with PS4 power requirements and supports ISL95808 drivers that are compatible.

Related Literature

For a full list of related documents, visit our website:

- [ISL95869](#) device page

Features

- V_{IN} input range: +4.5V to +25V
- Supports Intel DAC and serial data bus interface
 - 10mV step 2.74V DAC support
- Output configurable 3-, 2-, or 1-phase using two integrated gate drivers
- 0.5% system accuracy over-temperature
- Low supply current in PS4 state meeting Intel specifications
- Supports multiple current sensing methods
 - Lossless inductor DCR current sensing
 - Precision resistor current sensing
- Differential remote voltage sensing
- Supports system input power monitor (PSYS)
- Programmable V_{BOOT} voltage at start-up
- Resistor programmable I_{CCMAX} , slew rate and switching frequency
- Adaptive body diode conduction time reduction
- Acoustic Noise Reduction (ANR) with advanced decay slew rate limiter
- Up to 750kHz switching frequency
- RoHS-compliant 4x4 TQFN package

Applications

- IMVP9 notebook and Ultrabook computers
- IMVP9 desktop computers
- IMVP9 tablets or similar hand-held devices

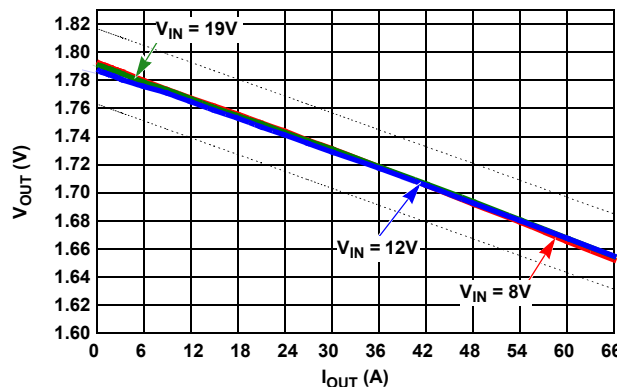


Figure 1. Typical Loadline Regulation

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