

ISL95818

3-Phase PWM Controller for VR12.5 and VR12.6+ CPUs

FN8428
Rev 1.00
March 19, 2013

Fully compliant with Intel VR12.5 and VR12.6+ specifications, the ISL95818 provides a complete solution for microprocessor core 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 to communicate with the CPU and achieves lower cost and smaller board area.

Based on Intersil's Robust Ripple Regulator (R3) technology™, the PWM modulator compared to traditional modulators, has faster transient settling time, variable switching frequency during load transients and has improved light load efficiency with its ability to automatically change switching frequency.

The ISL95818 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 Power-Good output.

Features

- Serial data bus
- Output configurable 3-, 2- or 1-phase using two integrated gate drivers
- Precision core voltage regulation
 - 0.5% system accuracy over-temperature
 - Enhanced load line accuracy
- Supports multiple current sensing methods
 - Lossless inductor DCR current sensing
 - Precision resistor current sensing
- Differential remote voltage sensing
- Programmable V_{BOOT} voltage at start-up
- Resistor programmable I_{CCMAX} and voltage transition slew rate
- Adaptive body diode conduction time reduction

Applications

- Notebook computers
- Desktop computers

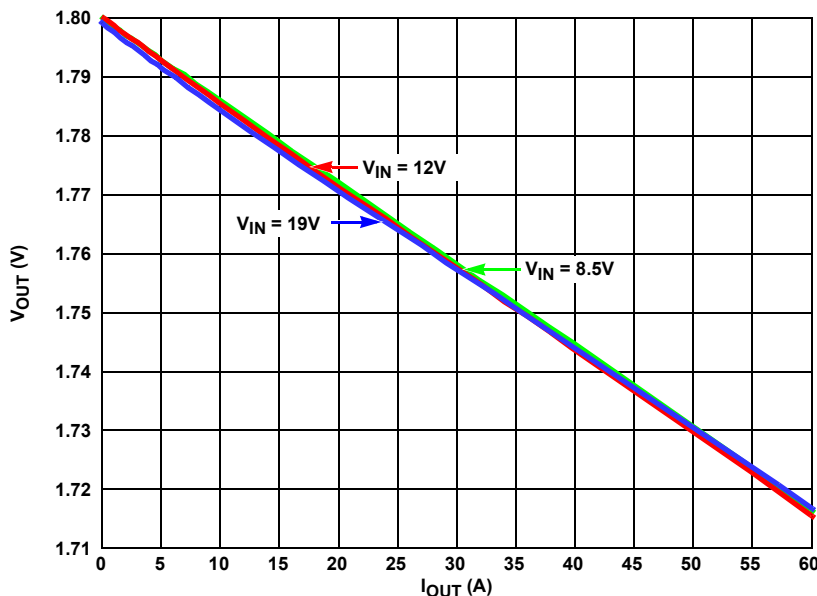


FIGURE 1. LOAD LINE REGULATION

© Copyright Intersil Americas LLC 2013. All Rights Reserved.
All trademarks and registered trademarks are the property of their respective owners.

For additional products, see www.intersil.com/en/products.html

Intersil products are manufactured, assembled and tested utilizing ISO9001 quality systems as noted in the quality certifications found at www.intersil.com/en/support/qualandreliability.html

Intersil products are sold by description only. Intersil may modify the circuit design and/or specifications of products at any time without notice, provided that such modification does not, in Intersil's sole judgment, affect the form, fit or function of the product. Accordingly, the reader is cautioned to verify that datasheets are current before placing orders. Information furnished by Intersil is believed to be accurate and reliable. However, no responsibility is assumed by Intersil or its subsidiaries for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Intersil or its subsidiaries.

For information regarding Intersil Corporation and its products, see www.intersil.com