

# 3+1 Voltage Regulator for IMVP-7/VR12™ CPUs

## ISL95831

Compliant with IMVP-7/VR12™, the ISL95831 provides a complete solution for microprocessor and graphic processor core power supply. It provides two Voltage Regulators (VRs) with three integrated gate drivers. The first VR can be configured as 3-, 2- or 1-phase VR while the second output is 1-phase VR, providing maximum flexibility. The two VRs share the serial control bus to communicate with the CPU and achieve lower cost and smaller board area compared with the two-chip approach.

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 it's ability to automatically change switching frequency.

The ISL95831 has several other key features. Both outputs support DCR current sensing with single NTC thermistor for DCR temperature compensation or accurate resistor current sensing. Both outputs come with remote voltage sense, programmable  $V_{BOOT}$  voltage, programmable  $I_{MAX}$ ,  $T_{MAX}$ , adjustable switching frequency, OC protection and separate Power-Good.

## Features

- Serial Data Bus
- Dual Outputs:
  - Configurable 3-, 2- or 1-phase for the 1st Output using 2 integrated Gate Drivers
  - 1-phase for the 2nd Output using an Integrated Gate Driver
- 0.5% System Accuracy Over-Temperature
- 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  $I_{MAX}$ ,  $T_{MAX}$  for Both Outputs
- Adaptive Body Diode Conduction Time Reduction

## Applications

- IMVP-7/VR12 Compliant Computers

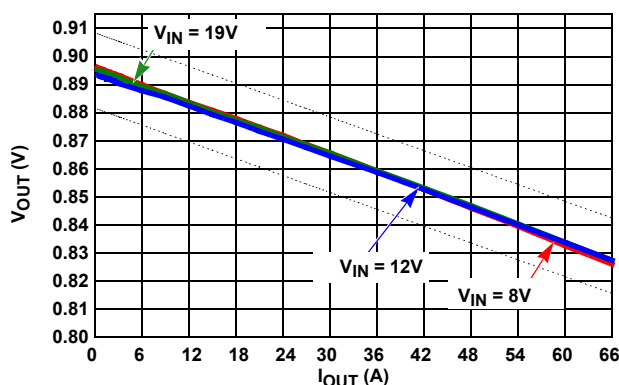


FIGURE 1. LOAD LINE REGULATION

For additional products, see [www.intersil.com/en/products.html](http://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](http://www.intersil.com/en/support/qualandreliability.html)

---

*Intersil products are sold by description only. Intersil Corporation reserves the right to make changes in circuit design, software and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets 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](http://www.intersil.com)