ISL95836

Dual 3+2 PWM Controller for IMVP-7/VR12™ CPUs

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Datasheet

ISL95836

The ISL95836 datasheet is restricted to a very limited number of customers. To request a datasheet please email Jia Wei at jwei@intersil.com

V_{IN} (min) (V)	4.75
V_{IN} (max) (V)	5.25
V_{OUT} (min) (V)	.25
V_{OUT} (max) (V)	1.52
I_{OUT} (max) (A)	90
V_{BIAS} (V)	5
Applications	VR12/IMVP7
Max # of outputs	2
Max # of phases	3
Droop	Y
Integrated MOSFET Driver	Y

Product Information

Key Features

- Serial Data Bus
- Dual Outputs:
    - Configurable 3-, 2- or 1-phase for the 1st Output using two integrated Gate Drivers
    - Configurable 2- or 1-phase for the 2nd Output using one Integrated Gate Driver
- R3 Modulator
    - Excellent Transient Response
    - High Light Load Efficiency
- 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}, Switching Frequency for Both Outputs
- Adaptive Body Diode Conduction Time Reduction

Description

The ISL95836 Pulse Width Modulation (PWM) controller IC provides a complete solution for IMVP-7/VR12™ compliant microprocessor and graphic processor core power supplies. It provides the control and protection for two Voltage Regulators (VRs). The first VR, typical for Vcore, incorporates 2 integrated drivers and can operate in 3-, 2- or 1-phase configurations. The second VR, typical for Graphics, incorporates 1 integrated driver and can operate in 2- or 1-phase configurations. The two VRs share a serial control bus to communicate with the CPU and achieve lower cost and smaller board area compared with the two-chip approach.

Both VRs utilize Intersils Robust Ripple Regulator R3 Technology™. The R3 modulator has numerous advantages compared to traditional modulators, including faster transient response, variable switching frequency during load transients, and improved light load efficiency due to its ability to automatically change switching frequency.

The ISL95836 has several other key features. Both outputs support either DCR current sensing with a single NTC thermistor for DCR temperature compensation, or more precise resistor current sensing if desired. Both outputs come with remote voltage sense, programmable V_{BOOT} voltage, I_{MAX}, and switching frequency, adjustable overcurrent protection and separate Power-Good signals.

Pricing / Packaging / Samples / Ordering

- **iBuy direct from Intersil**
- **iBuy direct - out of stock**
- **Request samples**
- **Check distributor inventory**
- **Available in RoHS/Pb-Free**

Part No.	Design-In Status	Temp.	Package	MSL	Price US $			
ISL95836HRTZ	Active	Hi-Temp Comm	40 Ld TQFN	3		✔	🟡	🔵
ISL95836HRTZ-T	Active	Hi-Temp Comm	40 Ld TQFN T+R	3		✔	🟡	
ISL95836IRTZ	Active	Ind	40 Ld TQFN	3		✔	🟡	🔵
ISL95836IRTZ-T	Active	Ind	40 Ld TQFN T+R	3		✔	🟡	

The price listed is the manufacturer's suggested retail price for quantities of 1K units. However, prices in today's market are fluid and may change without notice.

MSL = Moisture Sensitivity Level - per IPC/JEDEC J-STD-020

SMD = Standard Microcircuit Drawing

Technical Documentation

Datasheet(s):

- **EN** The ISL95836 datasheet is restricted to a very limited number of customers. To request a datasheet please email Jia

Wei at jwei@intersil.com

Tools And Support

iSim Design Simulation
No Models Available

Applications

- IMVP-7/VR12 Compliant Computers

Related Devices   PT Parametric Table

ISL6353	Multiphase PWM Regulator for VR12 DDR Memory Systems
ISL6363	Multiphase PWM Regulator for VR12™ Desktop CPUs
ISL6364	Dual 4-Phase + 1-Phase PWM Controller for VR12/IMVP7 Applications
ISL6364C	Dual 4-Phase + 1-Phase PWM Controller for VR12 Desktop Applications
ISL6366	Dual 6-Phase + 1-Phase PWM Controller for VR12/IMVP7 Applications
ISL95831	3+1 Voltage Regulator for IMVP-7/VR12™ CPUs
ISL95833	Dual 2+1 PWM Controller for IMVP-7/VR12 CPUs
ISL95835	3+1 and 1+1 Voltage Regulator for IMVP-7/VR12™ CPUs
ISL95837	3+1 and 1+1 Voltage Regulator for IMVP-7/VR12™ CPUs

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