

Home > All Products > Power Management > Computing Power VRM/IMVP > Multiphase Controllers > ISL95831C

ISL95831C

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

Key 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

Description

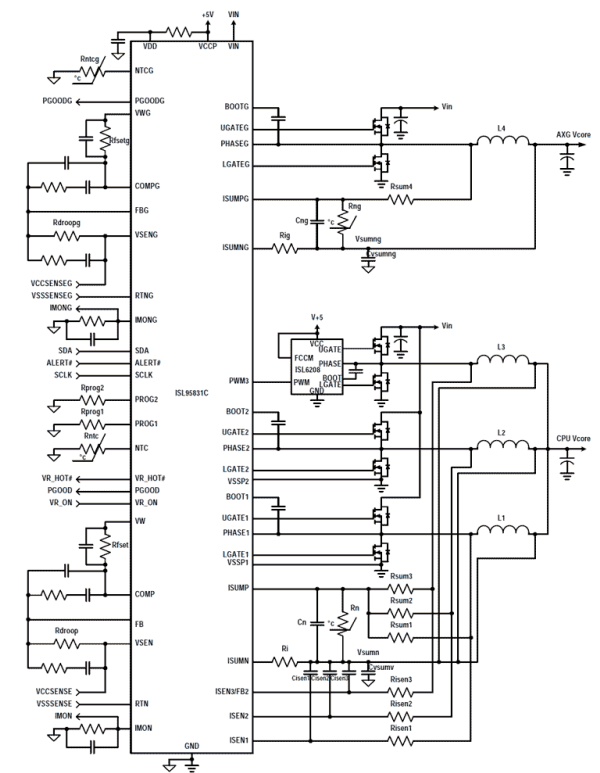
Compliant with IMVP-7/VR12™, the ISL95831C provides a complete solution for microprocessor and graphic processor core power supply. It provides two Voltage Regulators (VRs) with three integrated gate drivers. The first VR can be configured as 3-, 2- or 1-phase VR while the second output is 1-phase VR, 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 its ability to automatically change switching frequency.

The ISL95831C has several other key features. Both outputs support DCR current sensing with single NTC

TYPICAL DIAGRAM

Simplified Application Circuit



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.

Applications

- IMVP-7/VR12 Compliant Computers

Parameters	ISL95831C		Alternatives		
			ISL6261	ISL6266A	ISL9500
Max # of Outputs	1			1	1
Max # of Phases	3			2	2
V _{IN} (min) (V)	4.5		4.75	4.75	4.75
V _{IN} (max) (V)	25		24	24	5.25
V _{OUT} (min) (V)	0.25		0.3	0.3	0.7
V _{OUT} (max) (V)	1.52		1.5	1.5	1.708
I _{OUT} (max) (A)	90		50	100	60
V _{BIAS} (V)	4.75 to 5.25			4.75 to 5.25	4.75 to 5.25
VID	Yes		Yes	Yes	Yes
Applications	VR12/IMVP7		IMVP-6	IMVP-6+	
Qualification Level	Standard		Standard	Standard	Standard
Droop	Yes			Yes	Yes
Integrated MOSFET Driver(s)	Yes			No	Yes

Datasheets

Title	Type	Updated	Size	Other Languages
 ISL95831C Data Short 3+1 Voltage Regulator for IMVP-7/VR12™ CPUs	PDF	16 Dec 2015	107 KB	

White Papers

Title	Type	Updated	Size	Other Languages
 Five Easy Steps to Create a Multi-Load Power Solution	PDF	30 Jan 2017	502 KB	

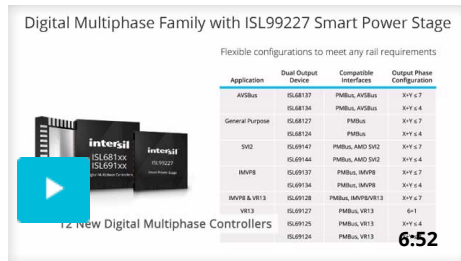
Are you looking for Product Change Notifications? Search PCN/PDN Notices

Devices

Part Number	Package Type	Weight(g)	Pins	MSL Rating	Peak Temp (°C)	RoHS Status
ISL95831CHRTZ	 48 Ld TQFN	0.092	48	3	260	 Details
ISL95831CHRTZ-T	 48 Ld TQFN T+R	0.092	48	3	260	 Details
ISL95831CIRTZ	 48 Ld TQFN	0.092	48	3	260	 Details
ISL95831CIRTZ-T	 48 Ld TQFN T+R	0.092	48	3	260	 Details

Resources

Related Videos



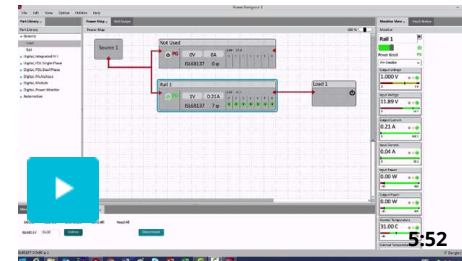
Digital Multiphase Power for 10A to 450A Applications

Introducing 12 new digital multiphase controllers and a companion smart power stage.



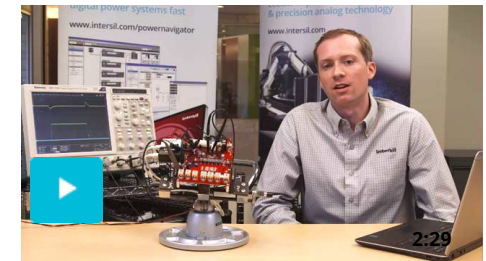
Digital Multiphase Family: Using PowerNavigator Software

This video is an overview of ISL68137 evaluation board, AVSBus and PowerNavigator v5.3.45.



Digital Multiphase Controllers with PowerNavigator: Overview

Introducing PowerNavigator v5.3.45 and its integration of the latest family of digital power multiphase controllers.



Digital Multiphase Controllers with PowerNavigator: Control Loop

Learn about full digital control loop and how easy it is to tune using PowerNavigator GUI software.