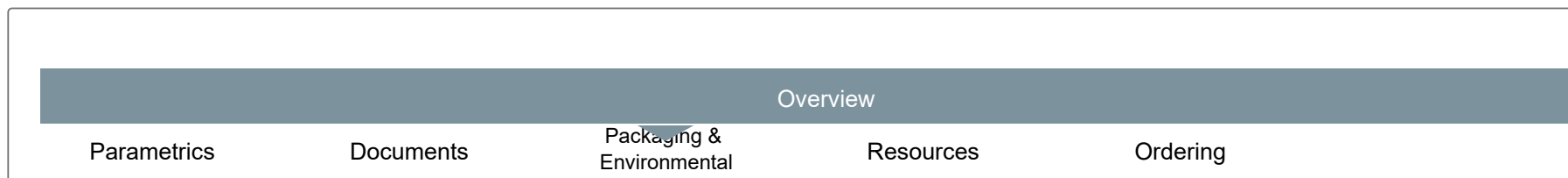


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ISL95837

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



Key Features

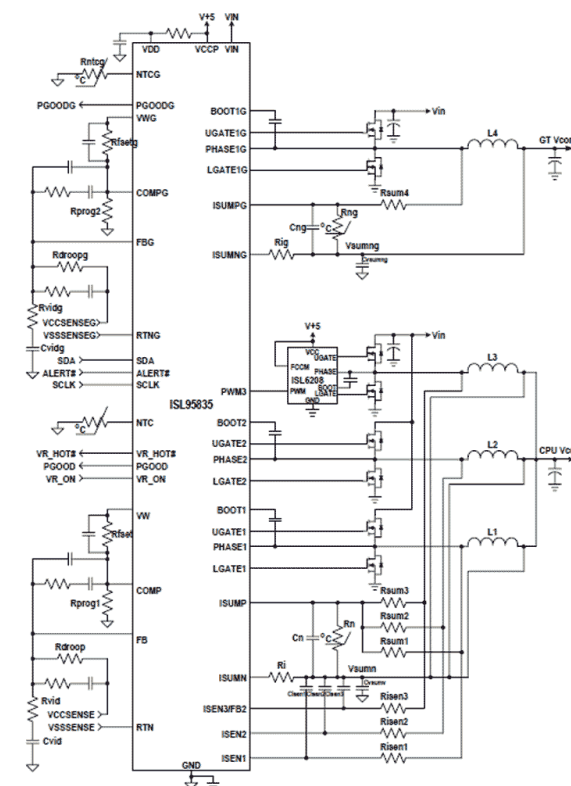
- Serial Data Bus
- Dual Outputs:
 - Configurable 1-phase for the 1st Output using an integrated Gate Driver
 - 1-phase for the 2nd Output using an Integrated Gate Driver
- 0.5% System Accuracy Over-Temperature
- Supports Multiple Current Sensing Methods
 - Lossless Inductor DCR Current Sensing
 - Precision 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 ISL95835 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

TYPICAL DIAGRAM



efficiency with its ability to automatically change switching frequency. The ISL95835 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.



The ISL95837 can be considered as ISL95835 dedicated for 1+1 application. VR1 and VR2 are both 1-phase VR.

Applications


- IMVP-7/VR12 Compliant Computers

Parameters	ISL95837	Alternatives		
		ISL6261	ISL6266A	ISL9500
Max # of Outputs	2		1	1
Max # of Phases	1		2	2
V_{IN} (min) (V)	4.5	4.75	4.75	4.75
V_{IN} (max) (V)	5.5	24	24	5.25
V_{OUT} (min) (V)	0	0.3	0.3	0.7
V_{OUT} (max) (V)	1.52	1.5	1.5	1.708
I_{OUT} (max) (A)	30	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


Application Notes

Title	Type	Updated	Size	Other Languages
 AN1681: Grounding Techniques Grounding Techniques	PDF	19 Jul 2018	509 KB	
 AN1684: Nonideality of Ground Nonideality of Ground	PDF	19 Jul 2018	398 KB	


Datasheets

Title	Type	Updated	Size	Other Languages
 ISL95835, ISL95837 Data Short 3+1 And 1+1 Voltage Regulator for IMVP-7/VR12 CPUs	PDF	18 Jul 2018	186 KB	

Simulation Models









Title	Type	Updated	Size	Other Languages
 ISL95837 iSim Model		19 Feb 2015		

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
ISL95837HRZ	 40 Ld QFN	0.074	40	3	260	 Details
ISL95837HRZ-T	 40 Ld QFN T+R	0.074	40	3	260	 Details
ISL95837IRZ	 40 Ld QFN	0.074	40	3	260	 Details
ISL95837IRZ-T	 40 Ld QFN T+R	0.074	40	3	260	 Details

Resources

Related Videos

Digital Multiphase Family with ISL99227 Smart Power Stage

Flexible configurations to meet any rail requirements

Application	Dual Output Device	Compatible Interface	Output Phase Configuration
AVSBus	ISL68137	PMBus, AVSBus	X _V 6.7
	ISL68134	PMBus, AVSBus	X _V 6.4
General Purpose	ISL68127	PMBus	X _V 6.7
	ISL68124	PMBus	X _V 6.4
SV2	ISL69147	PMBus, AMO SV2	X _V 6.7
	ISL69144	PMBus, AMO SV2	X _V 6.4
IMVP8	ISL69137	PMBus, IMVP8	X _V 6.7
	ISL69134	PMBus, IMVP8	X _V 6.4
IMVP8 & VR13	ISL69128	PMBus, IMVP8/VR13	X _V 6.7
	ISL69127	PMBus, VR13	6-1
	ISL69125	PMBus, VR13	X _V 6.4
	ISL69124	PMBus, VR13	X _V 6.4

12 New Digital Multiphase Controllers

6:52

Digital Multiphase Power for 10A to 450A Applications

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

PowerNavigator
Design, configure & monitor power systems fast.
www.intersil.com

Innovation
Leads in power management & precision analog technology
www.intersil.com

5:54

Digital Multiphase Family: Using PowerNavigator Software

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

PowerNavigator v5.3.45

5:52

Digital Multiphase Controllers with PowerNavigator: Overview

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

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precision analog technology
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Digital Multiphase Controllers with PowerNavigator: Control Loop

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