



ISL95818

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



DATASHEET

Request Full Datasheet

OVERVIEW

PARAMETRICS

DOCUMENTS

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Key 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

Description

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.

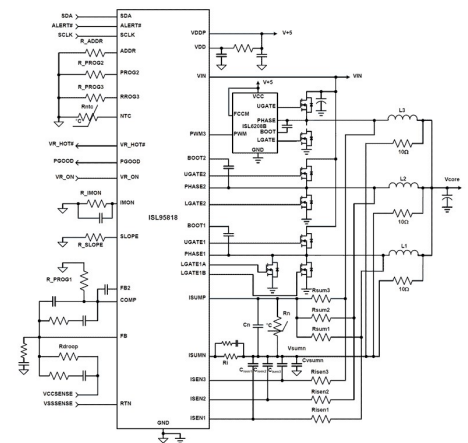
Based on Intersil's Robust Ripple Regulator (R3) technology™, the PWM modulator compared to traditional modulators, has faster transient settling time, variable switching frequency during load transients and has improved light load efficiency with its ability to automatically change switching frequency.

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.

Applications

- Notebook computers
- Desktop computers









TYPICAL DIAGRAM

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Parameters	ISL95818
V _{IN} (min) (V)	4.5
V _{IN} (max) (V)	25
V _{OUT} (min) (V)	0.5
V _{OUT} (max) (V)	2.3
I _{OUT} (max) (A)	90
V _{BIAS} (V)	4.75 to 5.25
Applications	VR12.5 and VR12.6+™
Max # of Outputs	1
Max # of Phases	3
VID	Yes
Droop	Yes
Integrated MOSFET Driver(s)	Yes

Alternatives		
ISL6261	ISL6266A	ISL9500
4.75	4.75	4.75
24	24	5.25
0.3	0.3	0.7
1.5	1.5	1.708
50	100	60
	4.75 to 5.25	4.75 to 5.25
IMVP-6	IMVP-6+	
	1	1
	2	2
Yes	Yes	Yes
	Yes	Yes
	No	Yes

Devices

Part Number	Package Type	Weight(g)	Pins	MSL Rating	Peak Temp (°C)	RoHS Status
ISL95818HRTZ	 40 Ld TQFN	0.074	40	3	260	 Details
ISL95818HRTZ-T	 40 Ld TQFN T+R	0.074	40	3	260	 Details
ISL95818IRTZ	 40 Ld TQFN	0.074	40	3	260	 Details
ISL95818IRTZ-T	 40 Ld TQFN T+R	0.074	40	3	260	 Details