

## Device Information

### ISL95831

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

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#### Datasheet



#### ISL95831

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

$V_{IN}$ (min) (V)	4.5
$V_{IN}$ (max) (V)	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	1
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 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

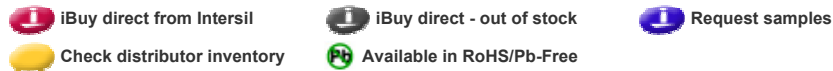
Compliant with IMVP-7/VR12™, the ISL95831 provides a complete solution for microprocessor and graphic processor core power supply. It provides two Voltage Regulators (VRs) with three integrated gate drivers. The first VR can be configured as

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.

## Pricing / Packaging / Samples / Ordering



Part No.	Design-In Status	Temp.	Package	MSL	RoHS	Lead	Sample	Inventory
ISL95831HRTZ	Active	Hi-Temp Comm	48 Ld TQFN	3	✓	✓	✓	✓
ISL95831HRTZ-T	Active	Hi-Temp Comm	48 Ld TQFN T+R	3	✓	✓	✓	✓
ISL95831IRTZ	Active	Ind	48 Ld TQFN	3	✓	✓	✓	✓
ISL95831IRTZ-T	Active	Ind	48 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](#) 3+1 Voltage Regulator for IMVP-7/VR12 CPUs

## Tools And Support

### iSim Design Simulation

[iSim:PE Users Guide](#)

### Application Block Diagrams

[Notebook Computers](#)

### Applications

[IMVP-7/VR12 Compliant Computers](#)

## Related Devices

[PT](#) Parametric Table

<a href="#">ISL6353</a>	Multiphase PWM Regulator for VR12 DDR Memory Systems
<a href="#">ISL6363</a>	Multiphase PWM Regulator for VR12™ Desktop CPUs
<a href="#">ISL6364</a>	Dual 4-Phase + 1-Phase PWM Controller for VR12/IMVP7 Applications
<a href="#">ISL6364C</a>	Dual 4-Phase + 1-Phase PWM Controller for VR12 Desktop Applications
<a href="#">ISL6366</a>	Dual 6-Phase + 1-Phase PWM Controller for VR12/IMVP7 Applications
<a href="#">ISL95835</a>	3+1 and 1+1 Voltage Regulator for IMVP-7/VR12™ CPUs
<a href="#">ISL95837</a>	3+1 and 1+1 Voltage Regulator for IMVP-7/VR12™ CPUs

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