

# ISL95833

Dual 2+1 PWM Controller for IMVP-7/VR12 CPUs

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## Datasheet



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$V_{IN}$ (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)	60
$V_{BIAS}$ (V)	5
Applications	VR12/IMVP7
Max # of outputs	2
Max # of phases	2
Droop	Y
Integrated MOSFET Driver	Y

## Product Information

### Key Features

- Serial Data Bus
- Dual Outputs:
  - Configurable 2- or 1-phase for the 1st Output using one Integrated Gate Driver
  - 1-phase for the 2nd Output using an 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 VBOOT Voltage at Start-up
- Resistor Programmable I<sub>MAX</sub>, Switching Frequency for Both Outputs
- Adaptive Body Diode Conduction Time Reduction






## Description













The ISL95833 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, typically for V<sub>CORE</sub>, incorporates 1 integrated driver and can operate in 2- or 1-phase configurations. The second VR, typically for Graphics, is a single phase regulator incorporating an integrated driver. 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 Intersil's 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 ISL95833 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 VBOOT voltage, I<sub>MAX</sub>, 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 \$ 
ISL95833HRTZ	Active	Hi-Temp Comm	32 Ld TQFN	3	   
ISL95833HRTZ-T	Active	Hi-Temp Comm	32 Ld TQFN T+R	3	 
ISL95833IRTZ	Active	Ind	32 Ld TQFN	3	  
ISL95833IRTZ-T	Active	Ind	32 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](#) Dual 2+1 PWM Controller for IMVP-7/VR12 CPUs

## Tools And Support

### iSim Design Simulation

No Models Available

### Applications

- IMVP-7/VR12 Compliant Computers

### Related Devices

 [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="#">ISL95831</a>	3+1 Voltage Regulator for IMVP-7/VR12™ CPUs
<a href="#">ISL95835</a>	3+1 and 1+1 Voltage Regulator for IMVP-7/VR12™ CPUs
<a href="#">ISL95836</a>	Dual 3+2 PWM Controller 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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