

Three-Phase Buck PWM Controller with Integrated MOSFET Drivers and Light Load Efficiency Enhancements for Intel VR11.1 Applications; Temperature Range: -40°C to 85°C; Package: 48-QFN T&R

Manufacturers	Renesas Technology Corp
Package/Case	QFN-48
Product Type	Power Management ICs
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for ISL6333IRZ-T or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

The ISL6333 three-phase PWM family of control ICs provide a precision voltage regulation system for advanced microprocessors. The integration of power MOSFET drivers into the controller IC marks a departure from the separate PWM controller and driver configuration of previous multi-phase product families. By reducing the number of external parts, this integration is optimized for a cost and space saving power management solution. The ISL6333 controllers are designed to be compatible with Intel VR11.1 Applications. Features that make these controllers compatible include an IMON pin for output current monitoring, and a Power State Indicator (PSI#) pin for phase dropping and higher efficiency during light load states. An 8-bit VID input is used to select the desired output voltage from the VR11 DAC table. A circuit is provided for remote voltage sensing, compensating for any potential difference between remote and local grounds. The output voltage can also be positively or negatively offset through the use of a single external resistor. The ISL6333 controllers also include advanced control loop features for optimal transient response to load application and removal. One of these features is highly accurate, fully differential, continuous DCR current sensing for load line programming and channel current balance. Active Pulse Positioning (APP) Modulation and Adaptive Phase Alignment (APA) are two other unique features, allowing for quicker initial response to high di/dt load transients. With this quicker initial response to load transients, the number of output bulk capacitors can be reduced, helping to reduce cost. Integrated into the ISL6333 controllers are user-programmable current sense resistors, which require only a single external resistor to set their values. No external current sense resistors are required. Another unique feature of the ISL6333 controllers is the addition of a dynamic VID compensation pin that allows optimizing compensation to be added for well-controlled dynamic VID response. Protection features of these controller ICs include a set of sophisticated overvoltage, undervoltage, and overcurrent protection. Furthermore, the ISL6333 controllers include protection against an open circuit on the remote sensing inputs. Combined, these features provide advanced protection for the microprocessor and power system.

Features

Intel VR11.1 Compatible

IMON Pin for Output Current Monitoring

Power State Indicator (PSI#) Pin for Phase Dropping and Higher Efficiency During Light Load States

~~CPURST_N Input to Eliminate Required Extensive External Circuit for proper PSI# Operation of Intel's Eaglelake Chipset Platform (ISL6333D,~~

ISL6333C Only)

Integrated Multi-Phase Power Conversion

3-Phase or 2-Phase Operation with Internal Drivers

Precision Core Voltage Regulation

Differential Remote Voltage Sensing

±0.5% System Accuracy Over-Temperature

Adjustable Reference-Voltage Offset

Optimal Transient Response

Active Pulse Positioning (APP) Modulation

Adaptive Phase Alignment (APA)

Fully Differential, Continuous DCR Current Sensing

Integrated Programmable Current Sense Resistors

Accurate Load Line Programming

Precision Channel Current Balancing

Gate Voltage Optimization Technology (ISL6333, ISL6333B Only)

Power Saving Diode Emulation Mode (ISL6333, ISL6333B Only)

Optimized for use with Coupled Inductors

Variable Gate Drive Bias: +5V to +12V

Microprocessor Voltage Identification Inputs

8-bit VID Input for Selecting VR11 DAC Voltages

Dynamic VID Technology

Dynamic VID Compensation

Overcurrent Protection and Channel Current Limit

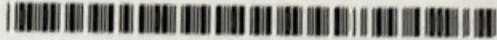
Multi-tiered Overvoltage Protection

Digital Soft-Start

Selectable Operation Frequency up to 1.0MHz Per Phase

Pb-free (RoHS Compliant)

(P) CUST P/N: ADVANTECH/ODM



(1P) RENESAS P/N: ISL6333IRZ-T



(1T) LOT NBR: 25FTB00000C1S1



Product of MALAYSIA

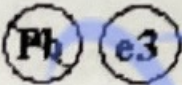
Chips from UNITED STATES

(1D): 1910 (2D): 1914

(Q)QTY: 4000 EA LLQ: 4000

MSL 3 PBT : 260 Deg C

(V)SUPPLIER: RENESAS



Order 0001431677

MY4

No :



SPLIT *N*

DRY *Y*

ROHS YES

LOC

BOXLP 6384098

SO

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16/12/20 08:55 Priority: NORMAL Qty: 4000

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Related Products



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40-WFQFN Exposed Pad



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