

Device Information

ISL62882C

Multiphase PWM Regulator for IMVP-6.5™ Mobile CPUs and GPUs

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Datasheet**ISL62882C**To request a copy of this datasheet please email Majid Kafi at mkafi@intersil.com

V _{IN} (min) (V)	5
V _{IN} (max) (V)	25
V _{OUT} (min) (V)	.75
V _{OUT} (max) (V)	1.5
I _{OUT} (max) (A)	60
V _{BIAS} (V)	5
Applications	IMVP-6.5

Product Information**Key Features**

- Programmable 1- or 2-Phase CPU or GPU Mode Operation
- Precision Multiphase Core Voltage Regulation
 - 0.5% System Accuracy Over-Temperature
 - Enhanced Load Line Accuracy
- Microprocessor Voltage Identification Input
 - 7-Bit VID Input, 0V to 1.500V in 12.5mV Steps
 - Supports VID Changes On-The-Fly
- Supports Multiple Current Sensing Methods
 - Lossless Inductor DCR Current Sensing
 - Precision Resistor Current Sensing
- Supports PSI# and DPRSLPVR modes
- Superior Noise Immunity and Transient Response
- Current Monitor and Thermal Monitor
- Differential Remote Voltage Sensing
- High Efficiency Across Entire Load Range
- Two Integrated Gate Drivers
- Excellent Dynamic Current Balance Between Phases
- Split LGATE1 Drivers Increases Light Load Efficiency
- FB2 Function Optimizes 1-Phase Mode Performance
- Adaptive Body Diode Conduction Time Reduction
- User-selectable Overshoot Reduction Function
- Small Footprint 40 Ld 5x5 TQFN Packages
- Pb-Free (RoHS Compliant)

Description

The ISL62882C is a multiphase PWM buck regulator for microprocessor or graphics processor core power supply. The multiphase buck converter uses interleaved phases to reduce the total output voltage ripple with each phase carrying a portion of the total load current, providing better system performance, superior thermal management, lower component cost, reduced power dissipation, and smaller implementation area. The ISL62882C uses two integrated gate drivers to provide a complete solution. The PWM modulator is based on Intersil's Robust Ripple Regulator (R³) technology™. Compared with traditional modulators, the R³™ modulator commands variable switching frequency during load transients, achieving faster transient response. With the same modulator, the switching frequency is reduced at light load, increasing the regulator efficiency.

The ISL62882C can be configured as CPU or graphics Vcore controller and is fully compliant with IMVP-6.5™

specifications. It responds to PSI# and DPRSLPVR signals by adding or dropping Phase 2, adjusting overcurrent protection threshold accordingly, and entering/exiting diode emulation mode. It reports the regulator output current through the IMON pin. It senses the current by using either discrete resistor or inductor DCR whose variation over temperature can be thermally compensated by a single NTC thermistor. It uses differential remote voltage sensing to accurately regulate the processor die voltage. The unique split LGATE function further increases light load efficiency. The adaptive body diode conduction time reduction function minimizes the body diode conduction loss in diode emulation mode. User-selectable overshoot reduction function offers an option to aggressively reduce the output capacitors as well as the option to disable it for users concerned about increased system thermal stress. The ISL62882C offers the FB2 function to optimize 1-phase performance.

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 \$				
ISL62882CEVAL2Z	Active		Eval Board	N/A	Contact Us				
ISL62882CHRTZ	Active	Hi-Temp Comm	40 Ld TQFN	1	3.93				
ISL62882CHRTZ-T	Active	Hi-Temp Comm	40 Ld TQFN T+R	1	3.93				
ISL62882CIRTZ	Active	Ind	40 Ld TQFN	1	4.32				
ISL62882CIRTZ-T	Active	Ind	40 Ld TQFN T+R	1	4.32				

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):

To request a copy of this datasheet please email Majid Kafi at mkafi@intersil.com

Evaluation Board(s):

ISL62882CEVAL2Z User Guide

ISL62882EVAL2Z User Guide

Tools And Support

iSim Design Simulation

No Models Available

Application Block Diagrams

Desktop Computers

Notebook Computers

POS Register

POS Self-Service

Applications

Notebook Core Voltage Regulator

Notebook GPU Voltage Regulator



Related Devices



Parametric Table

ISL6217	PWM Controller for Intel Pentium M
ISL6217A	PWM Controller, IMVP License Required, CPU Power for Centrino
ISL6219A	Microprocessor CORE Voltage Regulator Precision Multiphase BUCK PWM Controller for Mobile Applications
ISL6244	Multiphase PWM Controller
ISL6247	Multiphase PWM Controller for Mobile Intel Pentium 4
ISL62882	Multiphase PWM Regulator for IMVP-6.5™ Mobile CPUs and GPUs

ISL62882B	Multiphase PWM Regulator for IMVP-6.5™ Mobile CPUs and GPUs
ISL62883	Multiphase PWM Regulator for IMVP-6.5™ Mobile CPUs
ISL62883B	Multiphase PWM Regulator for IMVP-6.5™ Mobile CPUs
ISL62883C	Multiphase PWM Regulator for IMVP-6.5™ Mobile CPUs and GPUs

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