

FEATURES

- 5V to 7V gate drivers with 6A GATEL sink current and 4A GATEH sink current
- 4.5V to 14V VIN range
- Local lossless inductor current sensing with improved noise immunity and accuracy
- Single reference based current reporting output
- Integrated bootstrap synchronous PFET
- Tri-state PWM diode emulation mode for optimal light load efficiency
- 7V tolerant PWM input compatible with 3.3V logic
- MOSFET monitoring with PHSFLT output
- Over temperature reporting
- Only four external components per phase
- Self-calibration of current sense amplifier input offset to maximize accuracy
- Body-Braking™ feature with active low logic
- RoHS compliant , small thermally enhanced 16L 3 X 3mm MLPQ package

APPLICATIONS

- Server, notebook and desktop computers
- Game consoles
- Consumer electronics – STB, LCD, TV, printers
- General purpose POL DC-DC converters

DESCRIPTION

The IR3535 is a high performance, floating N-channel MOSFET driver that is optimized for maximum efficiency delivery of a synchronous buck converter. It is a “Smart” driver that continually monitors MOSFET conditions, contains self-calibrating inductor current sense amplifier, and provides diode emulation mode with local zero current detection.

The integrated current sense amplifier achieves superior current sense accuracy vs. best-in-class controller based inductor DCR sense methods while delivering the clean and accurate current report information.

The IR patented Body-Braking™ feature reduces inductor to output capacitor energy transfer during load release which allows the output capacitor bank to be reduced.

Diode emulation mode in the IR3535 alleviates the zero-current detection and control burden from the PWM controller and increases system light load efficiency.

The IR3535 monitors MOSFET conditions and temperature and reports phase fault if MOSFET short, MOSFET open or over temperature is detected.

Up to 1.0MHz switching frequency capability enables high performance transient response, miniaturization of output inductors, as well as reduced input and output capacitors while maintaining industry leading efficiency. Solution size, thermal performance and cost can be optimized by combining with IR’s DirectFET™ MOSFETs and utilizing a dual sided layout.

BASIC APPLICATION

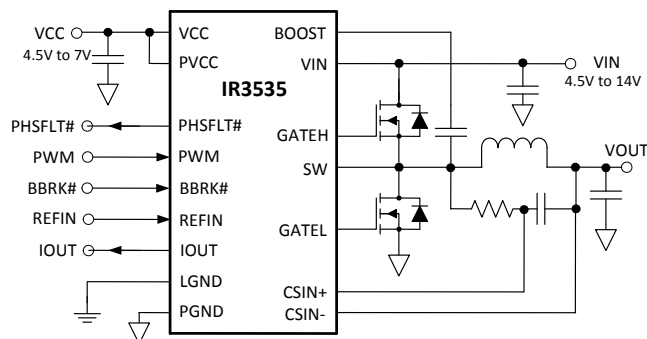


Figure 1: IR3535 Basic Application Circuit

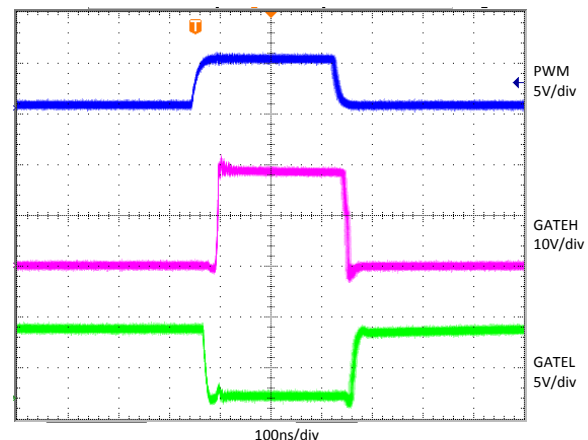


Figure 2: IR3535 Gate Driver Waveforms

ORDERING INFORMATION

Package	Tape & Reel Qty	Part Number
16 Lead MLPQ (3 x 3 mm body)	3000	IR3535MTRPBF

PIN DIAGRAM

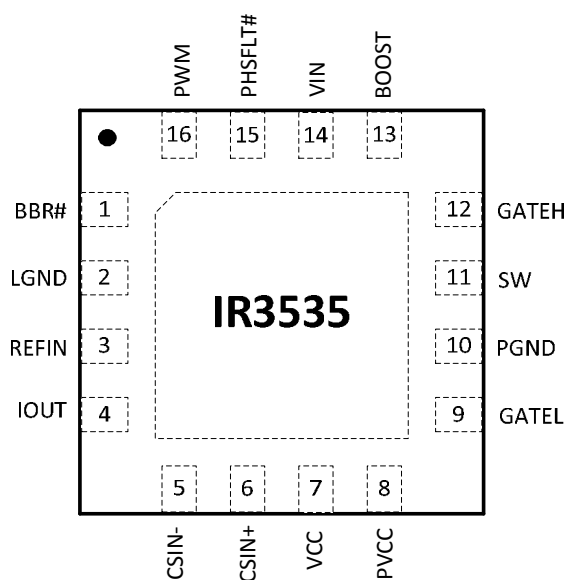


Figure 3: IR3535 Pin Diagram (Top View)