

FEATURES

- Peak efficiency up to 95% at 1.2V
- Integrated driver, control MOSFET, synchronous MOSFET and Schottky diode
- Input voltage (VIN) range up to 25V
- Output voltage range from 0.25V up to 3.3V
- Output current capability of 60A
- Operation up to 1.0MHz
- Integrated current sense amplifier
- VCC under voltage lockout
- Thermal flag
- Body-Braking™ load transient support
- Diode-emulation high efficiency mode
- Compatible with 3.3V PWM logic and VCC tolerant
- Compliant with Intel DrMOS V4.0
- PCB footprint compatible with PowIRstage® family
- Efficient dual sided cooling
- Small 6mm x 6 mm x 0.9mm PQFN package
- Lead free RoHS compliant package

APPLICATIONS

- High frequency, low profile DC-DC converters
- Voltage Regulators for CPUs, GPUs, and DDR memory arrays

DESCRIPTION

The IR3550 integrated PowIRstage® is a synchronous buck gate driver IC with co-packed control and synchronous MOSFETs and Schottky diode. It is optimized internally for PCB layout, heat transfer and driver/MOSFET timing. Custom designed gate driver and MOSFET combination enables higher efficiency at lower output voltages required by cutting edge CPU, GPU and DDR memory designs.

Up to 1.0MHz switching frequency enables high performance transient response, allowing miniaturization of output inductors, as well as input and output capacitors while maintaining industry leading efficiency. The IR3550's superior efficiency enables smallest size and lower solution cost. The IR3550 PCB footprint is compatible with PowIRstage® family.

Integrated current sense amplifier achieves superior current sense accuracy and signal to noise ratio vs. best-in-class controller based Inductor DCR sense methods.

The IR3550 incorporates the Body-Braking® feature which enables reduction of output capacitors and is activated quickly. Synchronous diode-emulation mode in the IR3550 removes the zero-current detection and control burden from the PWM controller and increases system efficiency.

The IR3550 is optimized specifically for CPU core power delivery in server applications. The ability to meet the stringent requirements of the server market also makes the IR3550 ideally suited to powering GPU and DDR memory designs.

BASIC APPLICATION

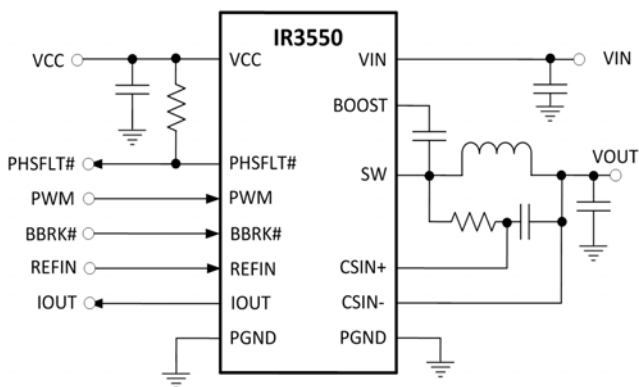


Figure 1: IR3550 Basic Application Circuit

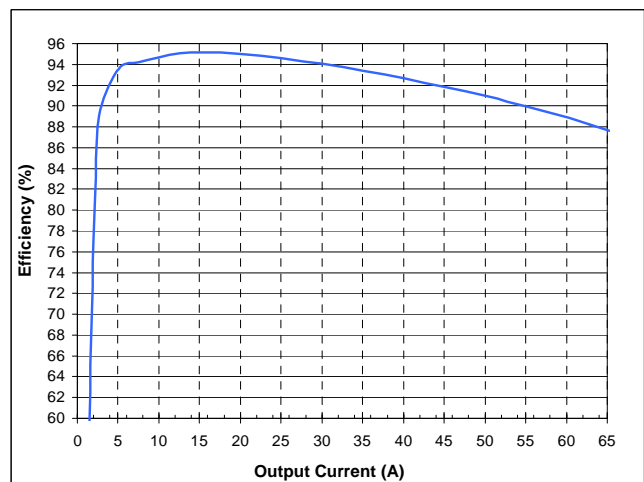


Figure 2: IR3550 Efficiency