PowIRstage® Solution Beats Today's Industry-Best with up to 3% Higher Electrical Efficiency

International Rectifier, IR® introduces the IR3550, the first in a family of integrated PowIRstage® products that delivers higher efficiency and better thermal performance than competing solutions along with smallest footprint while simplifying the DC-DC converter design for next-generation high performance servers, storage and communication systems.

The 60A rated IR3550 simplifies the design and implementation of high current high performance multiphase buck regulators. The resulting system solution helps enable fewer phases and lower cost compared to alternative solutions.

The new PowIRstage® solution integrates a high-performance synchronous buck gate driver, IR's latest generation control and synchronous MOSFETs featuring extremely low on-state resistance (RDS(on)) and gate charge, and a Schottky diode into a high density, low profile 6mm x 6mm x 0.9mm PQFN package. The IR3550 offers superior performance compared to alternative power stage solutions, by achieving up to a 3 percent improvement in electrical efficiency to help reduce overall power losses and heat generation in the system, thereby reducing dependency on complex thermal management techniques and associated costs as well as improving reliability.

IR's IR3550 is compatible with most analog and digital controllers available on the market today, providing the designer the flexibility to select the PWM controller of preference. The PowIRstage® solution features an integrated current sense amplifier that achieves superior accuracy and signal-to-noise ratios compared to alternate controller-based inductor DCR sensing techniques.

Additionally, the device achieves industry best peak and Thermal Design Current (TDC) electrical efficiencies, with up to 95 percent peak efficiency. The high switching frequency capability of the IR3550 allows for the miniaturization of output inductors and input and output capacitors to help reduce overall solution size.

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