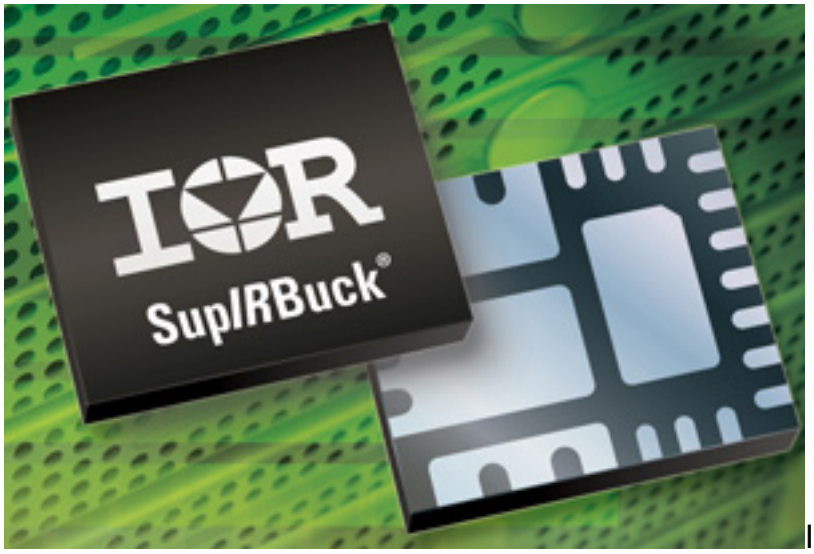
Voltage regulators intended for netcom, server, and storage applications



International Rectifier today introduced its third generation of integrated, feature-rich SupIRBuck synchronous buck voltage regulators designed to address the new requirements of emerging energy efficient netcom, server and storage applications.

The new SupIRBuck single output devices feature a newly patented modulator scheme that generates the industry's smallest, jitter free pulse widths. The ability to generate narrow pulses coupled with robust source/sync current handling capability makes this family ideal for generating DDR memory termination voltage directly from 12Vin.

"With this third generation of SupIRBuck devices, IR has addressed the challenges of high frequency, narrow duty cycle operation. By dramatically reducing jitter for pulse widths as small as 50ns, IR has enabled customers to have higher closed loop bandwidth resulting in even better transient response and lower output capacitance. In addition, the integration of a smart LDO has further increased the SupIRBuck's industry leading efficiency within the same compact footprint" said Cecilia Contenti, IR's POL Product Marketing Manager, Enterprise Power Business Unit.

In addition to standard SupIRBuck features of switching frequency up to 1.5MHz, pre-biased start-up, input voltage aware enable, tracking and programmable power-good, these third generation SupIRBuck devices offer a host of additional features and improvements compared with previous generation devices to address the needs of telecom, netcom, server and storage customers including reference voltage accuracy of 0.5%, enhanced line/load regulation with input voltage feed-forward and thermal compensation for current limit. Other enhancements include analog input for margining, PLL for smooth external frequency synchronization, start/stop ramp and minimum input voltage of 1.0V.

The IR3894 and IR3895 SupIRBuck voltage regulators and trackers integrate IR's latest generation high performance controller with power MOSFETs in a slim PQFN 5x6mm package, and deliver 12A and 16A output current respectively to achieve more than 96% peak efficiency. The IR3897, IR3898 and IR3899 deliver 4A, 6A and 9A respectively in a 4x5mm package. These are ideal for low duty cycle single input applications, from 5V or 6.8V to 21V with operating junction temperatures of -40oC to 125oC. The common footprint of the devices provides design flexibility and allows cut-and-paste layout for fast time-to-market.

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