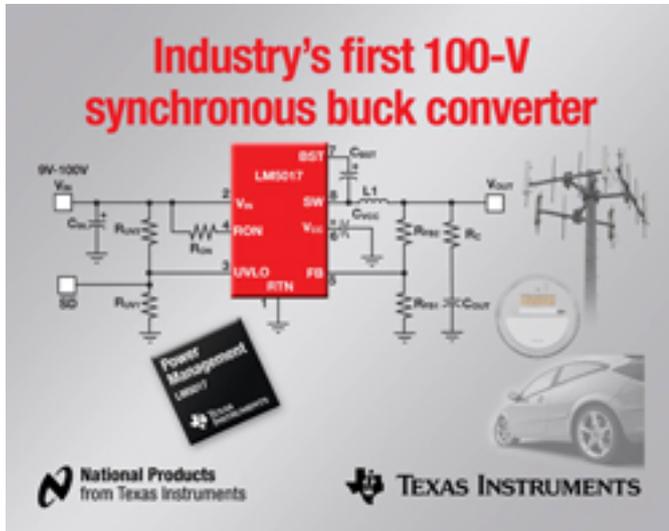


100-V Synchronous Buck Regulator Includes Integrated MOSFETs



Texas Instruments introduced a 100-V synchronous buck regulator with integrated MOSFETs. The 600-mA LM5017 is appropriate for telecommunication, industrial, smart grid and automotive systems. Used in conjunction with the WEBENCH online design tool, the regulator is presented as simplifying high-voltage DC/DC conversion and speeding the design process. The 600-mA LM5017, together with the 300-mA LM5018 and 100-mA LM5019 available in April, enables direct point-of-load voltage regulation from input voltages as high as 100-V. This eliminates external transient voltage suppressors or clamps required to achieve reliable operation in high-voltage applications. Integrated MOSFETs eliminate freewheeling Schottky diodes and improve efficiency. Pin-compatible 4-mm x 4-mm LLP packaging offers a scalable solution that covers a wide range of power requirements. Constant on-time (COT) control architecture provides excellent load transient response with no loop compensation required, further reducing the PCB area and simplifying the power supply design process.

The new switching regulators can also be used as isolated bias supplies for systems requiring small, efficient isolated power supplies. Unlike alternative flyback solutions, the LM5017 operates at switching frequencies up to 1-MHz, dramatically reducing the size and cost of the transformer. Watch a lab demonstration at www.ti.com/lm5017-prvdemo [1].

For applications that require fixed frequency operation, TI's 100-V UCC25230 isolated bias supply switching converter supports up to 200-mA output current and uses a voltage mode control topology with input feed forward.

Key features and benefits of the synchronous buck regulators:

- Wide 9-V to 100-V input voltage range improves system reliability in a variety of designs.
- 600-mA LM5017, 300-mA LM5018 and 100-mA LM5019 are pin compatible and

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support both non-isolated step-down and isolated power supply applications.

- COT control architecture provides fast transient response and eliminates the need for loop compensation, lowering cost and simplifying design.
- Integrated high-side and low-side N-Channel MOSFETs improve efficiency and eliminate external Schottky diode.
- Integrated high-voltage startup regulator provides bias power for internal operation of the IC and for integrated gate drivers.
- Peak current limit and over temperature detection protect the device from overload. Under voltage threshold and hysteresis can be independently programmed.

TI is showcasing the LM5017 in booth #401 at the Applied Power Electronics Conference and Expo (APEC) in Orlando, Florida, Feb. 6-8. APEC is one of the industry's leading conferences for practicing power electronics professionals.

Texas Instruments

800-477-8924, www.ti.com [2]

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Links:

[1] <http://www.ti.com/lm5017-prvdemo>

[2] <http://www.ti.com>