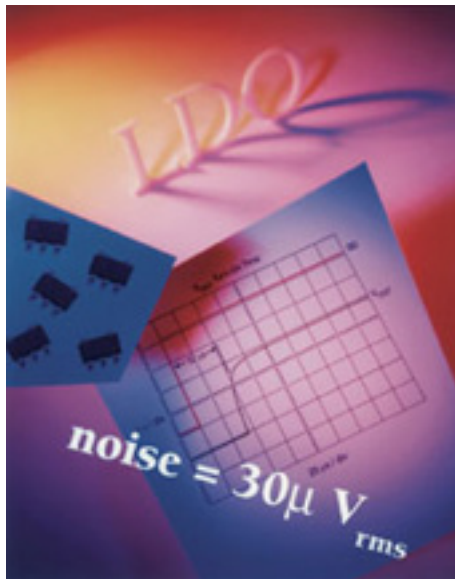


Voltage Regulators With Low Ground Current



Two new 150 mA low-noise low dropout (LDO) regulators designed for use in battery-powered equipment such as cell phones, wireless handsets and modems, PDAs, notebooks, pagers and digital cameras were announced by Siliconix incorporated, a subsidiary of Vishay Intertechnology.

The Si91841 and Si91843 feature a low ground current of 110 μ A at 150 mA \pm 1% ideal for low-voltage battery-operated power systems \pm 1% and a low dropout voltage of 130 mV, prolonging battery life in portable electronics. The devices' ultra-low noise output provides a quiet voltage source, while an external noise bypass capacitor further reduces noise levels for RF systems and other applications requiring low output noise to 30 μ V_(rms).

Designed to maintain regulation while delivering 300-mA peak output current in applications with high surge currents at turn-on, the Si91841 and Si91843 are available in a range of 14 fixed output voltage options from 1.8 V to 5.0 V. Both devices feature 1.5% guaranteed output voltage accuracy, a fast start-up time of 50 μ s and fast transient response of \geq 30 μ s. A built-in active pull-down clamp circuit improves transient response and regulation by actively sinking current from the output if it exceeds the desired regulation voltage. The Si91841 discharges the output during shutdown mode through a 100 Ω n-channel MOSFET, while the Si91843 maintains an open circuit on the output.

Integrated short-circuit and thermal protection ensure reliable operation. Reverse battery protection limits reverse current flow to a 1- μ A maximum shutdown current. When no output is required, an ON/OFF feature allows digital circuitry to shut off the device to save power. Packaged in a 5-pin SOT23, the Si91841 and Si91843 may be used with low-ESR ceramic capacitors or tantalum capacitors, giving designers a flexible choice of magnetic components.

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