MPQ4430

36V, 3.5A, Low Iq Synchronous Step-Down Converter AEC-Q100 Qualified

The Future of Analog IC Technology

PRELIMINARY SPECIFICATIONS SUBJECT TO CHANGE

DESCRIPTION

The MPQ4430 is a frequency programmable (350k to 2.5MHz) synchronous step-down switching regulator with integrated internal high-side and low-side power MOSFETs. It provides a 3.5A (or less) highly efficient output with current mode control for fast loop response.

The wide 3.3V to 36V input range accommodates a variety of step-down applications in automotive input environments. A 1µA shutdown mode quiescent current allows use in battery-powered applications.

High power conversion efficiency over a wide load range is achieved by scaling down the switching frequency during a light-load condition to reduce the switching and gate driving losses.

An open drain power good signal indicates the output is within 90% to 110% of its nominal voltage.

Frequency foldback helps prevent inductor current runaway during start-up. Thermal shutdown provides reliable, fault-tolerant operation. High-duty cycle and low drop-out mode are provided for the automotive cold-crank condition.

The MPQ4430 is available in QFN-16 (3mmx4mm).

Please email 'productinfo@monolithicpower.com' for more Information.

Features

- Wide 3.3V to 36V Operating Voltage Range
- 3.5A Continuous Output Current
- 1µA Low Shutdown Supply Current
- 10µA Sleep Mode Quiescent Current
- Internal 90mΩ High-Side and 40 mΩ Low-Side MOSFETs
- 350kHz to 2.5MHz Programmable Switching Frequency
- Fixed Output Options: 5V, 3.3V
- Synchronize to External Clock, Selectable In-Phase or 180° Out-of-Phase
- Power Good Output
- External Soft Start
- 70ns Minimum On Time
- Selectable Forced CCM and AAM
- Low Dropout Mode
- Hiccup Over-Current Protection
- QFN-16 (3mmx4mm)
- AECQ-100 Grade-1

APPLICATIONS

- Automotive Systems
- Industrial Power Systems

TYPICAL APPLICATION