



Synchronous Current-Mode with Constant On-time, PWM Buck

Preliminary Technical Data

ADP1872

FEATURES

- Power input voltage range: 2.7V to 20V
- Bias supply voltage range: 2.7V to 5.5V
- Minimum Output voltage 0.6V
- 1.0% Accuracy, 0.6V Reference Voltage
- Supports all N-channel MOSFET power Stage
- Available in 300 KHz, 600 KHz and 1.0 MHz
- No Current Sense Resistor Required
- Power saving mode under light loads
- Resistor Programmable Current Sense Gain
- Thermal overload protection
- Short circuit protection
- Precision Enable Input
- Integrated boot strap diode for High Side Drive
- 180 μ A typical shutdown supply current
- Starts into a pre-charged load
- Small, 10-lead MSOP package

APPLICATIONS

- Telecom and networking systems
- Mid to High End servers
- Set-top boxes
- Medical imaging systems
- DSP core power supplies

GENERAL DESCRIPTION

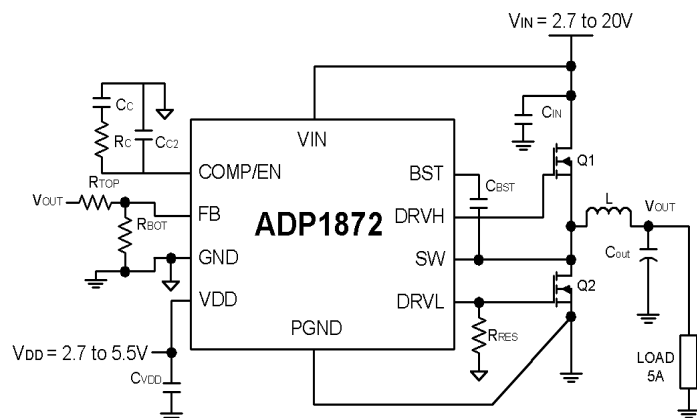
The ADP1872 is a versatile current mode synchronous step-down controller. ADP1872 uses a constant ON-time, pseudo fixed frequency with programmable Current Sense Gain Current Control scheme for superior transient response, optimal stability and current limit protection. It utilizes Valley Current Mode Control architecture for optimum performance at low Duty Cycles. It drives an all N-channel power stage to regulate output voltages as low as 0.6V.

ADP1872 is well suited for a wide range of applications, from Set Top Box design to Communication Infrastructure. The IC can operate from a 2.7V to 5.5V supply but the power input can be as high as 20V.

ADP1872 is available in three versions ADP1872A, ADP1872B and ADP1872C with each version programmed respectively to 300KHz, 600KHz and 1MHz pseudo fixed frequency.

ADP1872 includes an internally fixed, soft start period to limit input in-rush current from the input supply during startup and reverse current protection during soft start for a pre-charged output. The low-side current sense, current-gain scheme and PSM / Forced PWM options reduces external part count and improves efficiency.

The ADP1872 operates over the -40°C to $+125^{\circ}\text{C}$ junction temperature range and is available in a 10-pin MSOP package.



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One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 781.329.4700
Fax: 781.461.3113
www.analog.com
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