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
180µA 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

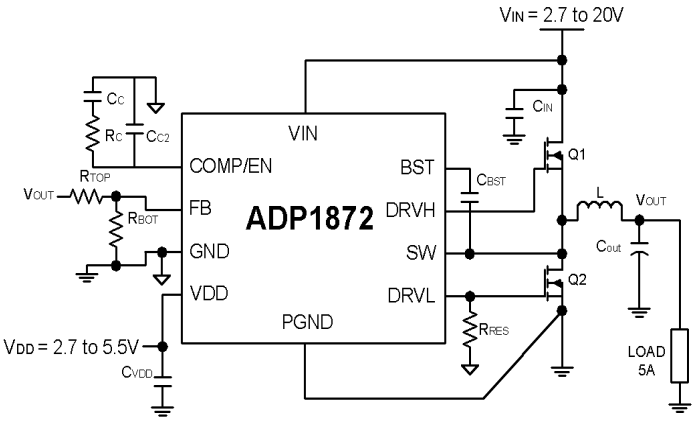
The ADP1872 is a versatile current mode synchronous step-down controller. ADP1872 uses a constant ON-time, pseudo fixed frequency with programmable Current Sense Gain Current Control scheme for superior transient response, optimal stability and current limit protection. It utilizes Valley Current Mode 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°C junction temperature range and is available in a 10-pin MSOP package.



Rev. PrA **PR08297-0-6/09(PrA)**

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