

## NCV8842

# Buck Regulator, 1.5 A, 170 kHz, with Synchronization Capability

## Product Overview

For complete documentation, see the data sheet.

The NCV8842 is a 1.5 A buck regulator IC operating at a fixed frequency of 170 kHz. The device employs the V2™ control architecture to provide unmatched transient response, the best overall regulation and the simplest loop compensation. The NCV8842 accommodates input voltages from 4.0 V to 40 V and contains synchronization circuitry. The on-chip NPN transistor is capable of providing a minimum of 1.5 A of output current and is biased by an external boost capacitor to ensure saturation, thus minimizing on-chip power dissipation. Protection circuitry includes thermal shutdown, cycle-by-cycle current limiting and frequency foldback short-circuit protection.

### Features

- V2™ Control Architecture
  - 2.0% Error Amp Reference Voltage Tolerance
  - Cycle-by-Cycle Current Limiting
  - Switch Frequency Decrease of 4:1 in Short Circuit
  - Bootstrapped Operation (BOOST)
  - Synchronization to External Clock (SYNC)
  - 1.0 A Shutdown Quiescent Current
  - Thermal Shutdown
  - Soft-Start
  - Pb-Free Packages are Available
- For more features, see the data sheet

### Applications

- Automotive
- Industrial

### Benefits

- Ultra-fast Transient Response, Improved Regulation and Simplified Design
- Tight Output Regulation
- Limits Switch and Inductor Current
- Reduces Short Circuit Power Dissipation
- Increased Efficiency and Minimized On-Chip Power Dissipation
- Parallel Supply Operation or Noise Minimization
- Minimize Current Consumption when SHDNB is Asserted
- Protect IC from Over-Temperature
- Decrease Inrush Current and Minimize Output Over-shoot During Start-Up

### End Products

- Dc-dc power supplies

# Application Diagram

