

## Product Overview

### CS51413: Buck Regulator, Low Voltage, 1.5 A, 520 kHz, with Synchronization Capability

For complete documentation, see the data sheet.

The CS5141X products are 1.5A buck regulator ICs. These devices are fixed-frequency operating at 260kHz and 520kHz. The regulators use the V2 control architecture to provide unmatched transient response, the best overall regulation and the simplest loop compensation for today's high-speed logic. These products accommodate input voltages from 4.5V to 40V. The CS51411 and CS51413 contain synchronization circuitry. The CS51412 and CS51414 have the option of powering the controller from an external 3.3V to 6V supply in order to improve efficiency, especially in high input voltage, light load conditions. The on-chip NPN transistor is capable of providing a minimum of 1.5A 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. The CS51411 and CS51413 are functionally pin-compatible with the LT1375. The CS51412 and CS51414 are functionally pin-compatible with the LT1376.

#### Features

- V2 Architecture Provides Ultra-Fast Transient Response, Improved Regulation and Simplified Design
- 2.0% Error Amp Reference Voltage Tolerance
- Switch Frequency Decrease of 4:1 in Short Circuit Conditions
- BOOST pin for Bootstrapped Operation
- Synchronization Function
- Shutdown Lead Provides Power-Down Option
- 85uA Quiescent Current During Power-Down
- Thermal Shutdown
- Soft Start
- Pin-Compatible with LT1375 and LT1376

For more features, see the data sheet

#### Benefits

- Reduced output capacitance
- Accurate Output Voltage
- Reduces Short Circuit PowerDissipation
- Maximized Efficiency
- Parallel Supply Operation or Noise Minimization
- Increased system flexibility
- Low power dissipation in stand-by mode
- Circuit Protection
- Increased system flexibility
- Easy drop in replacement

#### Applications

- Distributed Power

#### End Products

- Battery Charger

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