LTC1625
No R_{SENSE}™ Current Mode Synchronous Step-Down Switching Regulator

FEATURES

- **Highest Efficiency Current Mode Controller**
- **No Sense Resistor Required**
- **Stable High Current Operation**
- **Dual N-Channel MOSFET Synchronous Drive**
- Wide V_{IN} Range: 3.7V to 36V
- Wide V_{OUT} Range: 1.19V to V_{IN}
- ±1% 1.19V Reference
- Programmable Fixed Frequency with Injection Lock
- Very Low Drop Out Operation: 99% Duty Cycle
- Forced Continuous Mode Control Pin
- Optional Programmable Soft Start
- Pin Selectable Output Voltage
- Foldback Current Limit
- Output Overvoltage Protection
- Logic Controlled Micropower Shutdown: i_Q < 30µA
- Available in 16-Lead Narrow SSOP and SO Packages

APPLICATIONS

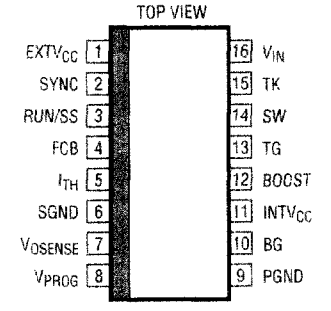
- Notebook and Palmtop Computers, PDAs
- Cellular Telephones and Wireless Modems
- Battery Chargers
- Distributed Power

DESCRIPTION

The LTC®1625 is a synchronous step-down switching regulator controller that drives external N-Channel power MOSFETs using few external components. Current mode control with MOSFET V_{DS} sensing eliminates the need for a sense resistor and improves efficiency. The frequency of a nominal 150kHz internal oscillator can be synchronized to an external clock over a 1.5:1 frequency range.

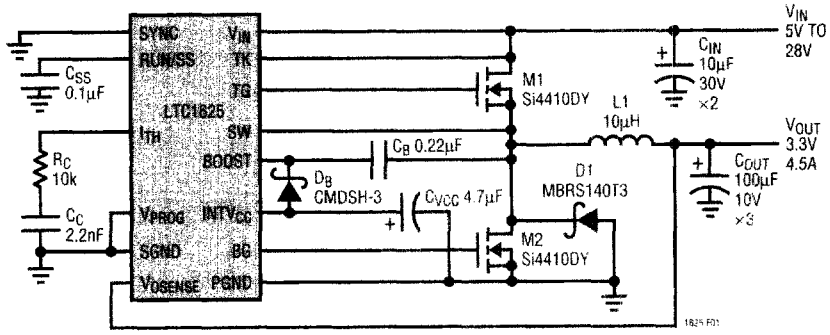
Burst Mode™ operation at low load currents reduces switching losses and low dropout operation extends operating time in battery-powered systems. A forced continuous mode control pin can assist secondary winding regulation by disabling Burst Mode operation when the main output is lightly loaded.

Fault protection is provided by foldback current limiting and an output overvoltage comparator. An external capacitor attached to the RUN/SS pin provides soft start capability for supply sequencing. A wide supply range allows operation from 3.7V (3.9V for LTC1625I) to 36V at the input and 1.19V to V_{IN} at the output.



LTC1625CGN
LTC1625CS
LTC1625IGN
LTC1625IS

High Efficiency Step-Down Converter



Efficiency vs Load Current