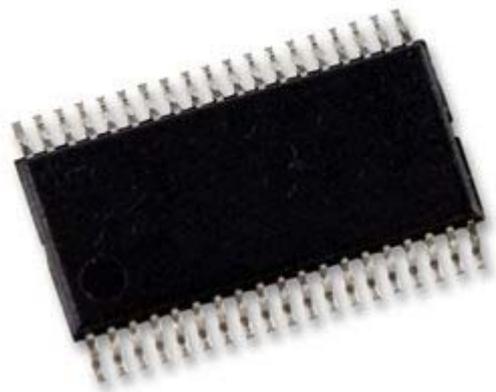




LTC3859EFE#PBF - Low IQ, Triple Output, Buck_Buck_Boost Synchronous Controller

General Description:

The LTC3859 is a high performance triple output (buck/buck/boost) synchronous DC/DC switching regulator controller that drives all N-channel power MOSFET stages. Constant frequency current mode architecture allows a phase-lockable switching frequency of up to 850 kHz. The LTC3859 operates from a wide 4.5V to 38V input supply range. When biased from the output of the boost converter or another auxiliary supply, the LTC3859 can operate from an input supply as low as 2.5V after start-up.

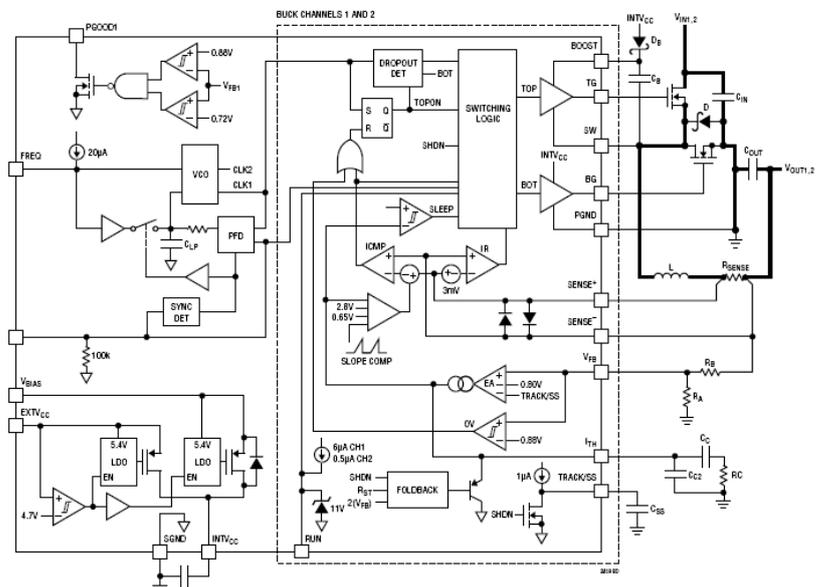


The 55µA no-load quiescent current extends operating runtime in battery powered systems. OPTI-LOOP compensation allows the transient response to be optimized over a wide range of output capacitance and ESR values. The LTC3859 features a precision 0.8V reference for the bucks, 1.2V reference for the boost and a power good output indicator.

Independent TRACK/SS pins for each controller ramp the output voltages during start-up. Current foldback limits MOSFET heat dissipation during short-circuit conditions. The PLLIN/MODE pin selects among Burst Mode operation, pulse-skipping mode, or continuous inductor current mode at light loads.

Key Features:

- Dual Buck Plus Single Boost Synchronous Controllers
- Outputs Remain in Regulation Through Cold Crank Down to 2.5V
- Low Operating I_Q : 55µA (One Channel On)
- Wide Bias Input Voltage Range: 4.5V to 38V
- Buck Output Voltage Range: $0.8V \leq V_{OUT} \leq 24V$
- Boost Output Voltage Up to 60V



- R_{SENSE} or DCR Current Sensing
- 100% Duty Cycle for Boost Synchronous MOSFET
- Phase-Lockable Frequency (75kHz to 850kHz)
- Programmable Fixed Frequency (50kHz to 900kHz)
- Selectable Continuous, Pulse-Skipping or Low Ripple Burst Mode® Operation at Light Loads
- Very Low Buck Dropout Operation: 99% Duty Cycle
- Adjustable Output Voltage Soft-Start or Tracking
- Low Shutdown I_Q : 14 μ A
- Small 38-Pin 5mm × 7mm QFN and TSSOP Packages

Applications:

- Automotive Always-On and Start-Stop Systems
- Battery Operated Digital Devices
- Distributed DC Power Systems

Related Products Information:

Mfr Part #	Farnell #	Newark #	Description
LTC3859EFE#PBF	1799849	70R5698	Low IQ, Triple Output, Buck/Buck/Boost Synchronous Controller, QFN
LTC3859EUHF#PBF	1799847	70R5700	Low IQ, Triple Output, Buck/Buck/Boost Synchronous Controller, QFN