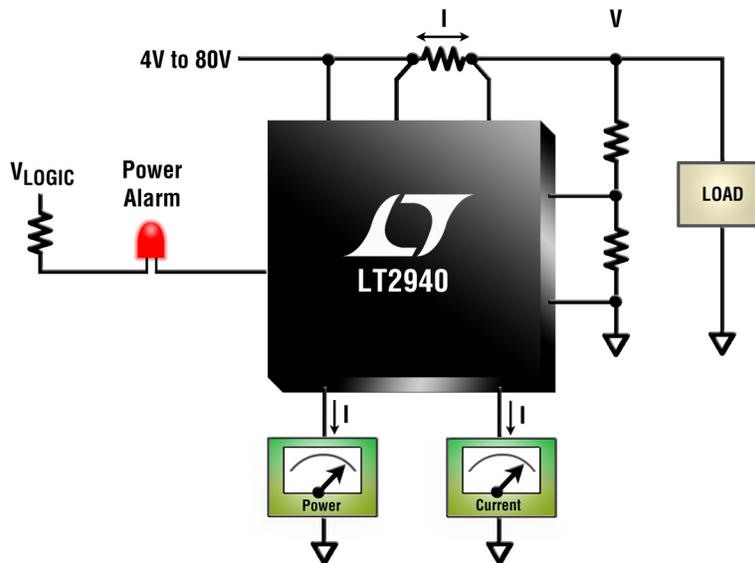


True Analog Power and Current Monitoring



4-Quadrant Multiplication Handles Bidirectional Currents and Bipolar Voltages

The LT[®]2940 is a power and current monitor for 4V to 80V systems that brings together the necessary circuits to accurately measure, monitor and control power. Unlike traditional power monitors that rely on data converters and multiplying registers to calculate power, the LT2940 uses a true 4-quadrant analog multiplier for continuous results with 500kHz bandwidth, ideal for use in many pulsed, chopped AC and control applications.

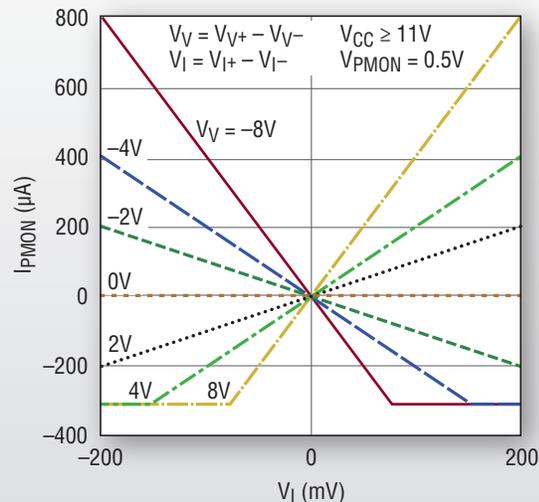
Features

- 4-Quadrant Power Measurement
- $\pm 5\%$ Power Measurement Accuracy
- 4V to 80V High-Side Sense, 100V Max
- Current Mode Power and Current Outputs
- 500kHz Bandwidth
- $\pm 3\%$ Current Measurement Accuracy
- 6V to 80V Supply Range, 100V Max
- Inverting and Noninverting Open-Collector Comparator Outputs
- Available in 12-Pin 3mm \times 3mm DFN and 12-Lead MSOP Packages

Applications

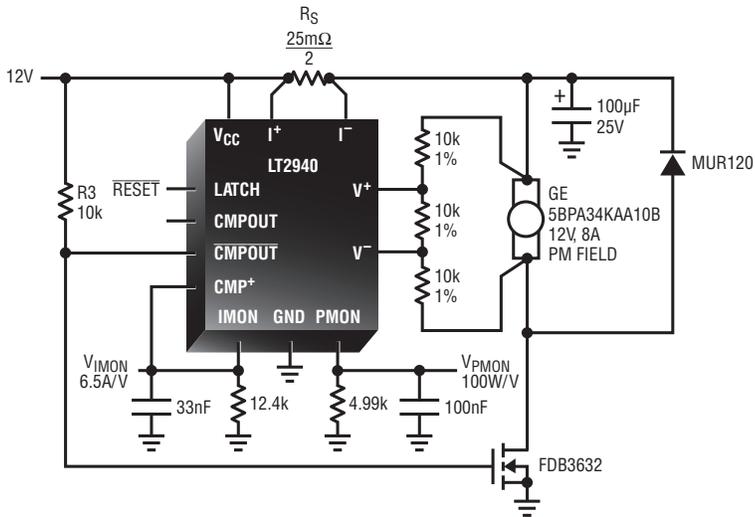
- Board Level Power and Current Monitoring
- Line Card and Server Power Monitoring
- Power Sense Circuit Breaker
- MOSFET Power Monitoring
- Power/Energy Meters
- Battery Charger Metering
- Power Control Loops

PMON Output Current vs Sense Input Voltages



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Application Ideas

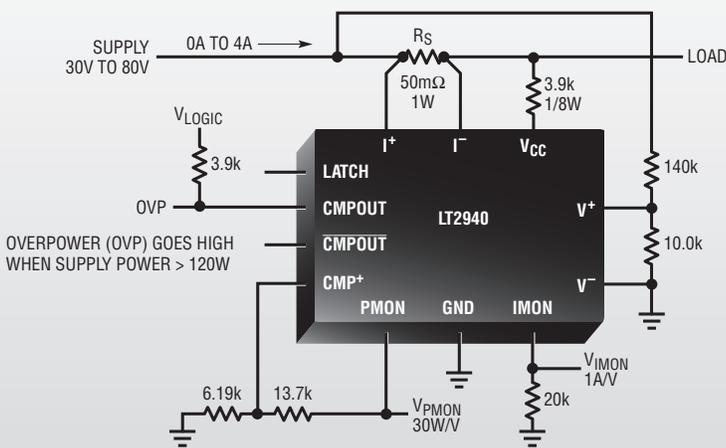
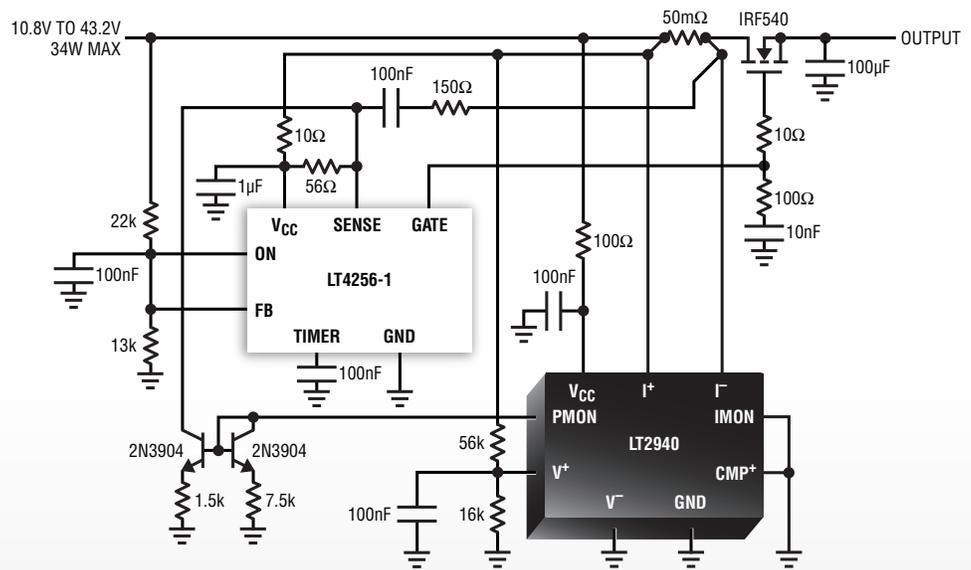


Motor Monitor with Circuit Breaker

The LT2940 monitors a 12V, 8A motor, with a MOSFET serving as a circuit breaker in case the current exceeds the specified value. If tripped, a reset command at the latch input pin re-enables the motor. Motor input power is monitored at the PMON output.

Hot Swap Controller with Power Limiting

Input power is accurately limited to 34W over a 4:1 input voltage range. The LT2940 measures the power, while the LT4256-1 high voltage Hot Swap™ controller acts as the limiting element.



Supply Power and Current Monitor

The LT2940 monitors a 30V to 80V supply rail, including its own supply current. The PMON output is scaled at 30W/V, the IMON output at 1A/V. The comparator output trips when power exceeds 120W.