



**THE DATASHEET OF  
MP8865GQ-Z**





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## MP8865

High-Efficiency, 6A, 21V, Synchronous Step-Down Converter with I2C Interface

### DESCRIPTION

The MP8865 is a high-frequency, synchronous, rectified, step-down, switch-mode converter with a I2C control interface. It offers a very compact solution to achieve a 6A continuous output current with excellent load and line regulation over a wide input-supply range. The MP8865 has synchronous-mode operation for higher efficiency over the output-load range. The reference voltage level can be controlled, on-the-fly through a 3.4Mbps I2C serial interface. The voltage range can be adjusted from 0.6V to 1.87V in 10mV steps. Also, the voltage slew rate, switching frequency, enable, and power-saving mode are selectable through the I2C interface. Current-mode operation provides fast transient response and eases loop stabilization. Full protection features include over-current protection (OCP), over-voltage protection (OVP), and thermal shut down (TSD).

The MP8865 requires a minimal number of readily available, standard, external components and is available in a 15-pin QFN15 (3x3mm) package.

### FEATURES

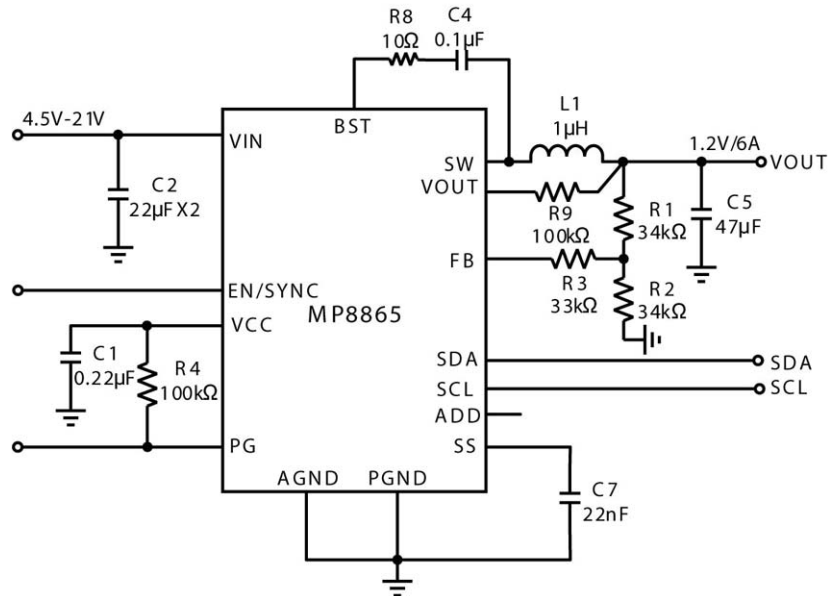
- Wide 4.5V to 21V Operation Input Range
- 45mΩ/18mΩ Low RDS(ON) Internal Power MOSFETs
- 1% VOUT Accuracy
- I2C Programmable Reference-Voltage Range from 0.6V to 1.87V in 10mV Steps with Slew-Rate Control
- I2C Selectable Switching Frequency. Default 600kHz Switching Frequency.
- Programmable Output Voltage
- Power-Saving Mode, OTP, and OCP via I2C
- Power Good Indication
- 1-Bit I2C Address Set
- OCP Protection in Hiccup Mode
- External Soft-Start
- Available in a QFN3x3 Package

### APPLICATIONS

- SoC and Media Processors
- General Consumers
- Distributed Power Systems

All MPS parts are lead-free and adhere to the RoHS directive. For MPS green status, please visit MPS website under Products, Quality Assurance page. "MPS" and "The Future of Analog IC Technology" are registered trademarks of Monolithic Power Systems, Inc.

### TYPICAL APPLICATION





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