

EN2362QI 6A PowerSoC Voltage-Mode Synchronous Step-Down Converter with Integrated Inductor

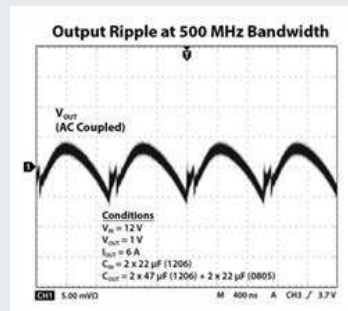
The EN2362QI is a member of the Enpirion® PowerSoC 12 V DC-DC step-down converter family. When combined with the 5 V and 6 V step-down converters, designers of telecommunications, enterprise, storage systems, and industrial and embedded computing equipment have the broadest choice of integrated power management solutions for optimizing footprint and reliability in point-of-load applications without compromising efficiency, noise, or thermals.

The EN2362QI voltage-mode synchronous step-down converter capitalizes on our proven PowerSoC technology which integrates the MOSFET switches, small signal control circuits, compensation, and an integrated inductor in a 8 x 11 mm QFN package.

The EN2362QI is pin compatible with the prior generation EN2360QI, making it very easy to migrate new designs to the feature-enhanced EN2362QI. The EN2362QI operates over a wide input voltage range and is specifically designed to meet the precise voltage and fast transient requirements of high-performance products such as Altera's family of FPGAs.

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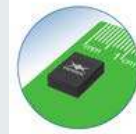
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Figure 1. EN2362QI Output Voltage Ripple

This power management IC significantly helps in system design and productivity by offering greatly simplified board design, layout, and manufacturing requirements. With a total solution size of <math><200\text{ mm}^2</math>, the EN2362QI is an ideal solution for space-constrained designs that cannot sacrifice performance.

Product Highlights

- Simple to use
- Pin compatible with EN2360QI (prior generation 6 A) and EN2340QI/EN2342QI (4 A)
- Excellent AC + DC regulation
- Ideal for noise-sensitive FPGA rails that require tight tolerance such as FPGA core and SERDES



Features

- Integrated inductor, MOSFETs, and controller
- Guaranteed 6 A I_{OUT} at 85°C with no airflow or heatsink
- High efficiency (up to 95%)
- 1% initial accuracy; 2% accuracy over line, load, and temperature
- 4.5 V to 14.0 V input voltage range
- 0.75 V to 5.0 V output voltage range
- Frequency synchronization (external clock)
- Output enable pin and power good signal
- Programmable soft start
- Under-voltage lockout protection
- Over-current and short-circuit protection
- Thermal shutdown protection
- 8 mm x 11 mm x 3.0 mm 68-pin QFN package
- Fully RoHS-compliant and Pb-free manufacturing line compatible

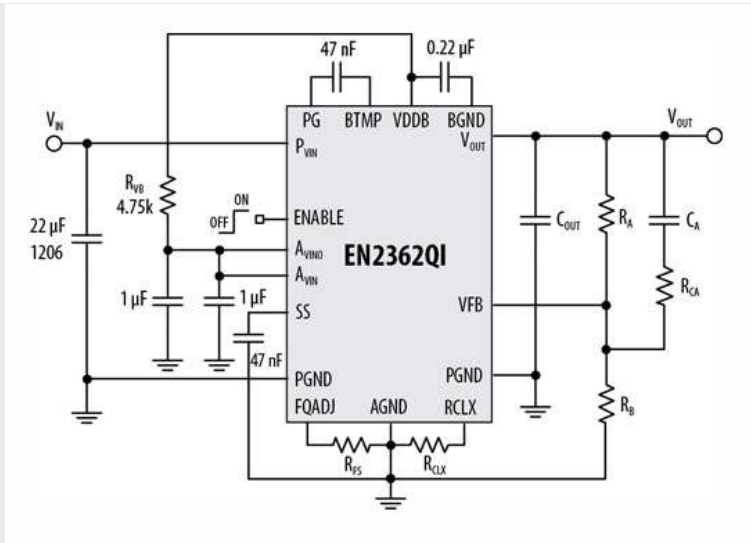


Figure 2. Typical EN2362QI Application Circuit

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