MPQ2166

6V, Dual 2A/2A or 3A/1A, Low Quiescent Current, Synchronous Buck with PG and SS AEC-Q100 Qualified

DESCRIPTION

The MPQ2166 is an internally compensated, dual, PWM, synchronous, step-down regulator that operates from a 2.7V to 6V input and generates an output voltage as low as 0.6V. The MPQ2166 can be configured as a 2A/2A or 3A/1A output current regulator and is ideal for powering portable equipment that runs on a single-cell lithium-ion (Li+) battery due to a low 60μA quiescent current.

The MPQ2166 integrates dual, 55mΩ, high-side switches and 20mΩ synchronous rectifiers for high efficiency without an external Schottky diode. The MPQ2166 has peak-current-mode control and internal compensation and is capable of low dropout configurations. Both channels can operate at 100% duty cycle.

Full protection features include cycle-by-cycle current limit and thermal shutdown.

The MPQ2166 requires a minimum number of readily available, standard, external components and is available in QFN-18 (2mmx3mm) and QFN-18 (2.5mmx3.5mm) packages.

FEATURES

- 2.7V to 6V Operating Input Range
- 2A/2A or 3A/1A Continuous Current
- 55mΩ/20mΩ RDS(ON)
- Programmed Frequency up to 3MHz
- External Sync Clock Up to 3MHz
- 180o Phase Shifted Operation
- PG Indicators
- External SS and Track
- Adjustable Advanced Asynchronous Mode (AAM) or Forced Continuous Conduction Mode (CCM)
- Peak Efficiency >90%
- Output Adjustable from 0.6V to VIN
- 100% Duty Cycle Operation
- 60μA Quiescent Current
- Cycle-by-Cycle Over-Current Protection (OCP)
- Short-Circuit Protection (SCP) with Hiccup Mode and Valley Current Detection
- Thermal Shutdown
- Available in QFN-18 (2mmx3mm) and QFN-18 (2.5mmx3.5mm) Packages
- Available in AEC-Q100 Grade-1

APPLICATIONS

- Small/Handheld Devices
- DVD Drivers
- Smartphones and Feature Phones
- Battery-Powered Devices
- Portable Instruments

TYPICAL APPLICATION