MPQ4230

36V, 6A Peak, Buck-Boost Converter with I2C Interface for Automotive Power Delivery, AEC-Q100

PRELIMINARY SPECIFICATIONS SUBJECT TO CHANGE

DESCRIPTION

The MPQ4230 is a Buck-Boost converter with 4 integrated power switches. The device can deliver up to 6A output current at certain input-supply range with excellent load and line regulation.

The MPQ4230 is suitable for USB power delivery (USB PD) application. It can work well with external USB PD controller through I2C interface.

The I2C interface and MTP (2 times programmable) provide flexibility of programmable features.

Fault condition protection includes CC current limiting, output OVP, and thermal shutdown (TSD).

The MPQ4230 requires a minimum number of readily available, standard, external components. The MPQ4230 is available in a QFN-21 (4mmx5mm) package.

FEATURES

- Support 60W Buck-Boost or 6A Peak Iout
- Wide 4V to 36V Operating Input-Voltage Range
- 1V to 21V Output-Voltage Range
- 250kHz, 350kHz and 420kHz Frequency Selectable or SYNC Input
- 11mΩ/22mΩ/12mΩ/12mΩ Low R_{DS_ON} for Switch A/B/C/D
- Frequency Spread Spectrum Selectable
- Line Drop Compensation
- Accurate CC Output-Current Limit
- I2C Interface and 2 times programmable MTP(PMBus compatible):
  - PFM/PWM Mode, Current Limit, Output Voltage, Frequency Spread Spectrum, Line Drop Comp, etc.
  - CRC Check for MTP Integrity
- Battery Short to Ground Protection Driver
- Load Shedding Alert
- EN Shutdown Passive Discharge
- Available in a QFN-21 (4mmx5mm) Package with Wettable Flanks
- Available in AEC-Q100 Grade

APPLICATIONS

- USB Type-C with PD Charging Only Port
- USB Type-C with PD for Hub or Head Unit
- Wireless Charging

TYPICAL APPLICATION