



The Future of Analog IC Technology®

MP5417

2.8V-5.5V, Power Management IC with Four Buck Converters, Two LDOs, Input Voltage Supervisory for PFI, I²C Interface, and 2 GPIO Pins

PRELIMINARY SPECIFICATIONS SUBJECT TO CHANGE

DESCRIPTION

The MP5417 is a complete power management solution that integrates four high-efficiency, step-down, DC/DC converters, two low-dropout regulators, and two controllable GPO ports.

The constant-on-time (COT) control DC/DC converter provides fast transient response. The 1.5MHz, default, fixed switching frequency during continuous conduction mode (CCM) reduces the external inductor and capacitor values greatly. Four DC/DC converters work with 90-degree phase-shift mode. Full protection features include under-voltage lockout (UVLO), over-current protection (OCP), and thermal shutdown.

The output voltage is adjustable through the I²C bus or preset by the one-time programmable (OTP) function. The power-on/-off sequence is also programmable by the OTP or can be controlled through the I²C bus online. Two GPO pins can be used to expand the power rails needed for different applications.

The MP5417 requires a minimal number of external components and is available in a space-saving, 28-pin QFN (4mmx4mm) package.

FEATURES

- Four High-Efficiency Step-Down Converters
 - Buck1: 4A DC/DC Converter
 - Buck2: 2A DC/DC Converter
 - Buck3: 4A DC/DC Converter
 - Buck4: 2A DC/DC Converter
 - 2.8V to 5.5V Operating Input Range
 - Adjustable Switching Frequency
 - Programmable Forced PWM, Auto PFM/PWM Mode
 - Hiccup Over-Current Protection (OCP)
- Two Low-Dropout Regulators
 - Two 300mA Low Noise LDOs
 - 100mV Dropout at 300mA Load
- System
 - I²C Bus and OTP
 - Programmable Power Failure Threshold
 - Open-Drain Power Fail Output Pin
 - Flexible Power On/Off Sequence via OTP
 - Flexible DC/DC, LDO On/Off Control
- Available in a Small QFN-28 (4mmx4mm) Package

APPLICATIONS

- Solid-State Drives (SSDs)
- Smart TVs
- MID, Tablet
- POS Machine
- IP Camera

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

TYPICAL APPLICATION

