



**THE DATASHEET OF
MP1519DQ-LF-Z**



PRELIMINARY SPECIFICATIONS SUBJECT TO CHANGE

DESCRIPTION

The MP161 is a total power stage solution for home automation, industrial automation, and any other applications that adopt relays and MCUs. The MP161 integrates a 700V switching regulator, a low dropout linear regulator, and relay drivers.

With the 700V MOSFET integrated in the regulator, a universal offline power supply can be built easily with minimal external components. The regulator adopts constant voltage (CV) regulation with internal loop compensation. Light-load efficiency is optimized in the control scheme by proper modulation of the switching frequency and peak current. Additionally, a special programmable standby mode is implemented to minimize standby power consumption. Various protections are also included to guarantee a reliable power supply.

The low dropout (LDO) linear regulator is able to operate with up to 30V of input voltage, which guarantees excellent robustness. The output is fixed internally with options of 5V and 3.3V and is tightly regulated within $\pm 2\%$ tolerance to provide a high-quality power supply for critical load units, such as MCU. The MP161 also has over-temperature protection (OTP).

The relay drivers are intended to drive up to two relays from the logic inputs using the regulator output. Freewheel diodes are integrated, so very few external components are required.

FEATURES

700V Switching Regulator

- 700V MOSFET and Start-Up Current Source
- CV Regulation with Internal Loop Compensation
- Available for Buck, Buck Boost, Boost, and Flyback Topologies
- Up to 150mA Output Current
- Optimized Light-Load Efficiency by Frequency Modulation
- Programmable Standby Mode
- Anti-Audible Noise Operation by Peak Current Modulation
- Adjustable or Fixed Output with Options of 12V/18V
- Low Operating Current
- Protections including OTP, SCP, OLP, OVP

Linear Regulator

- Up to 30V Input Voltage
- Fixed Output with Options of 3.3V and 5V
- $\pm 2\%$ Output Tolerance
- 50 μ A Quiescent Current
- Over-Temperature Protection (OTP)

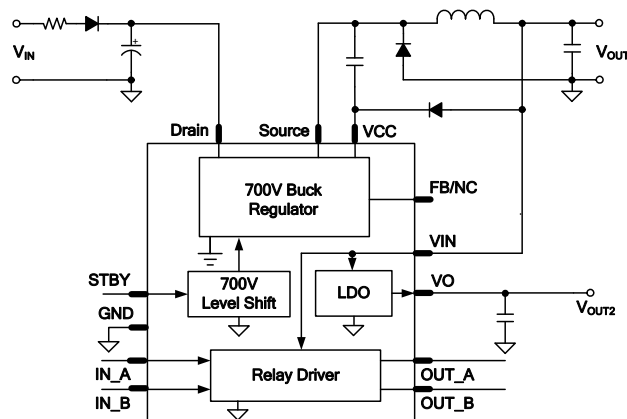
Relay Driver

- Up to 60mA per Channel
- Rail Voltage up to 30V
- Integrated Freewheeling Diode
- Nominal Off Driver
- Short-Circuit Protection (SCP)

Please email "mp161info@monolithicpower.com" for more information



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TYPICAL APPLICATION



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