FDMF5071

Smart Power Stage (SPS) Modules with Integrated Current and Temperature Monitors

Product Overview

For complete documentation, see the data sheet.

The FDMF5071 is ON Semiconductor's next generation Smart Power Stage (SPS) solution with fully optimized, ultra-compact, integrated MOSFETs with advanced driver IC current and temperature sensors, for high-current, high frequency, and synchronous buck DC-DC converters.
With an integrated approach, the SPS switching power stage is optimized for driver and MOSFET dynamic performance, system parasitic reduction, and power MOSFET RDS(ON).
The integration of Power MOSFETs with a driver IC also enables high accuracy module-level thermal and current monitoring. The FDMF5071 provides an output signal (IMON), which reports the real-time module current. The IMON signal can be used to replace inductor DCR current sense or resistor sense methods. There is also accurate thermal monitoring (TMON) that provides a 0.8 V output at 25°C with an 8 mV/°C slope.

Features

- Up to 90A Instantaneous Peak Current Handling Capability
- High-Performance, Universal Footprint, Copper-Clip 5 mm x 6 mm PQFN Package
- ON Semiconductor's PowerTrench® MOSFETs for Clean Voltage Waveforms and Reduced Ringing
- 30 V / 25 V Breakdown Voltage MOSFETs for Higher Long-Term Reliability
- Optimized for Switching Frequencies up to 1 MHz
- Optimized FET Pair for Highest Efficiency at 10% ~ 15 % Duty Cycle
- Optimized for Switching Frequencies up to 1 MHz
- Integrated Current Monitoring (IMON)
- Integrated Temperature Monitor (TMON)
- Catastrophic Fault Detection Features

  For more features, see the data sheet

Benefits

- High Current Capability

Applications

- CPU and Memory Voltage Regulators
- High-Current Multiphase Voltage Regulators
- DC/DC Power Module

End Products

- Server CPUs, Storage, Telecom
- Artificial Intelligence Add-On Cards

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	V_{CIN} (V) Typ	V_{IN} (V) Typ	PWM Level	I_O (A) Max	f_{max} (MHz) Max	Package Type
FDMF5071	1.9333	Pb H	Active	5	12	3.3V, 5V	90	1	PQFN-39