FDMF5175

30A Smart Power Stage (SPS) Modules with Integrated Current and Temperature Monitors

Product Overview

For complete documentation, see the data sheet.

The FDMF5175 is ON Semiconductor's next generation of Smart Power Stage (SPS) solution with fully optimized, ultra-compact, integrated MOSFETs plus driver 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, minimized system inductance, and power MOSFET RDS(ON).
The integration of Power MOSFETs with a driver IC also enables advanced high accuracy module thermal and current monitoring. The FDMF5175 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 30A Peak Current Handling Capability
- High-Performance, Universal Footprint, Copper-Clip 4 mm x 5 mm PQFN Package
- ON Semiconductor's PowerTrench® MOSFETs for Clean Voltage Waveforms and Reduced Ringing
- 30V / 25V Breakdown Voltage MOSFETs for Higher Long Term Reliability
- Optimized FET Pair for Highest Efficiency at 10% ~ 15% Duty Cycle
- Optimized for Switching Frequencies up to 1 MHz
- Integrated Current Monitor (IMON)
- Integrated Temperature Monitor (TMON)
- Catastrophic Fault Detection
- Thermal Flag (OTP) for Over-Temperature Condition

  For more features, see the data sheet

Benefits

- High Current Capability

Applications

- Multiphase and Single Phase DC-DC Voltage Regulators
- Server, Storage Systems, Computing
- Graphics Cards, Enterprise Switches
- Communications Infrastructure Systems

End Products

- Server, Storage Systems, Computing

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
FDMF5175	1.4333	Pb H	Active	5	12	3.3V, 5V	30	1	PQFN-24