

Product Overview

FDMF3180: Smart Power Stage (SPS) Modules with Integrated Current and Temperature Monitors

For complete documentation, see the data sheet.

The FDMF3180 is ON Semiconductor's next generation Smart Power Stage (SPS) solutions 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 current and thermal monitoring. The FDMF3180 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 very accurate thermal monitoring (TMON) that provides a 0.8V output at 25°C with an 8 mV / °C slope.

Features

- Up to 70A 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 DC 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 Monitoring (IMON)
- Integrated Temperature Monitoring (TMON)
- Catastrophic Fault Detection Features
- Thermal Flag (OTP) for Over-Temperature Condition

For more features, see the data sheet

Applications

- CPU and Memory Voltage Regulators Compliant with Intel's VR13 Purley Systems
- High-Current Multiphase Voltage Regulators
- Graphics Processing Unit (GPU) Cards
- Server, Storage, Telecom
- DC/DC Power Module

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 |
|----------|-------------------|------------------------|--------|--------------------------|-------------------------|-----------|------------------------|-------------------------------|--------------|
| FDMF3180 | 1.7333 | Pb-free Halide free | Active | 5 | 12 | 3.3V, 5V | 70 | 1 | PQFN-39 |

For more information please contact your local sales support at www.onsemi.com.

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