

FDMF5049

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

Product Overview

For complete documentation, see the data sheet.

The FDMF5049 is onsemi's next generation Smart Power Stage (SPS) solution with fully optimized, ultracompact, integrated MOSFETs with advanced driver IC current and temperature sensors, for highcurrent, high frequency, and synchronous buck DCDC 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 modulelevel thermal and current monitoring. The FDMF5049 provides an output signal (IMON), which reports the realtime 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 100 A Instantaneous Peak Current Handling Capability
- HighPerformance, Universal Footprint, CopperClip 4 mm x 6 mm LQFN Package
- onsemi's POWERTRENCH® MOSFETs for Clean Voltage Waveforms and Reduced Ringing
- 30 V/ 25 V Breakdown Voltage MOSFETs for Higher LongTerm Reliability
- Optimized FET Pair for Highest Efficiency at 10% 15 % Duty Cycle
- Integrated Current Monitoring (IMON)
- Integrated Temperature Monitoring (TMON)
- Catastrophic Fault Detection
- onsemi Green Packaging and RoHS Compliant


Applications

- CPU and Memory Voltage Regulators
- High-Current Multiphase Voltage Regulators
- Artificial Intelligence Add-On Cards
- Server CPUs, Storage, Telecom
- DC-DC Power Module

End Products

- Datacenter Equipment
- Artificial Intelligence
- Telecom Equipment

Part Electrical Specifications

Product	Status	Compliance	V _{CIN} (V) Typ	V _{IN} (V) Typ	PWM Level	I _O (A) Max	f _{max} (MHz) Max	Packa ge Type	Case Outline	MSL Type	MSL Temp (°C)	Contai ner Type	Contai ner Qty.
FDMF5049	Active		5	12	3.3	100	1	LQFN3 4 4x6, 0.45P	487AB .PDF	1	260	REEL	3000