

## FDMF5085

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

## Product Overview

For complete documentation, see the data sheet.

The FDMF5085 is ON Semiconductor'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 FDMF5085 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

- 108 A Peak Current Limit 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
  - Integrated Current Monitoring (IMON)
  - Integrated Temperature Monitor (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
- High-Current Multiphase Voltage Regulators
- DC-DC Power Module

## End Products

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

## Part Electrical Specifications

Product	Status	Compliance	V <sub>GIN</sub> (V) Typ	V <sub>IN</sub> (V) Typ	PWM Level	I <sub>O</sub> (A) Max	f <sub>max</sub> (MHz) Max	Packa ge Type	Case Outline	MSL Type	MSL Temp (°C)	Contai ner Type	Contai ner Qty.
FDMF5085	Active		5	12	3.3V, 5V	108	1	PQFN- 39	483BF .PDF	1	260	REEL	3000