

# OMNIFET III

## General purpose fully-protected FETs for low-side load driving



### Automotive qualified product family of Low-Side switches with built-in protections and diagnostic for a wide range of applications

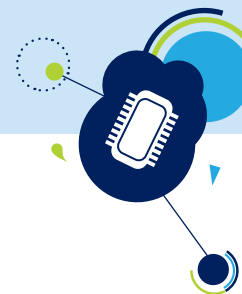
OMNIFET III is an STMicroelectronics product family of fully auto-protected FETs, suitable for driving every resistive, inductive and capacitive load with one side directly connected to battery. The products come on the proprietary VIPower® M0-5 technology. Detection of Overload and short circuit conditions enable to safely drive and protect a bulb, motor, valve or any other kind of load.

#### KEY FEATURES

- Auto switch-off in case of over-temperature triggering
- Two-step current limitation
- Power limitation control preventing thermal stress
- Internal clamp for overvoltage protection
- ON- and OFF-state diagnostics
- Very low standby current
- Optimized electromagnetic performances

#### KEY BENEFITS

- Safer application thanks to auto-protection in case of hazardous conditions
- Load disconnection monitoring
- Enhanced short circuit robustness due to power limitation control



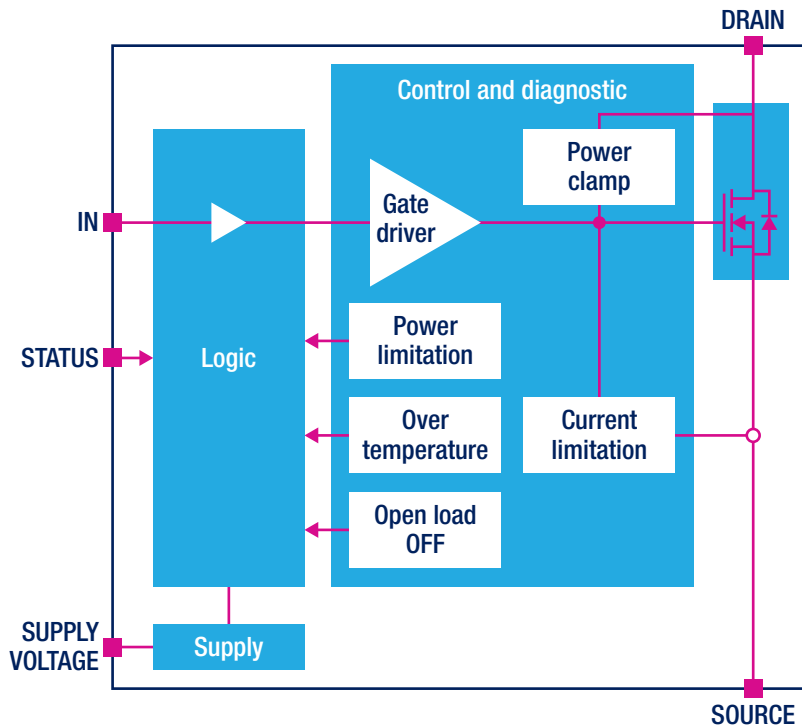
## OMNIFET III LOW-SIDE DRIVER BLOCK DIAGRAMS AND TYPICAL APPLICATIONS

OMNIFET III products offer, in one single chip, the power stage (FET) plus additional control and diagnostic functionalities. This makes those products a viable solution for every 12 V application where a smart power switch, in low side topology, is required. Built-in thermal shutdown and output current limitation secure device and load protection against overload or short-circuit condition. Thermal shutdown with automatic restart, allows the device to recover normal operation as soon as a fault condition disappears.

Fast demagnetization of inductive loads is achieved at turn-off.

Moreover, devices belonging to OMNIFET III product family, offer diagnostic pin (Status) supporting microcontroller monitoring of fault conditions as well as load disconnection.

### TYPICAL APPLICATION DIAGRAMS



### TYPICAL APPLICATION

- Light bulb
- Valve
- LEDs
- Solenoids/relays
- DC motors
- Heater
- Fan control
- Auxiliary and remote modules

### OMNIFET III PRODUCT PORTFOLIO

$R_{ON}$ (mΩ)	Single channel	Dual channel
300	VNL5300S5-E ●	VNLD5300-E ●
160	VNL5160S5-E ●	VNLD5160-E* ●
	VNL5160N3-E ●	
90	VNL5090S5-E ●	VNLD5090-E ●
	VNL5090N3-E ●	
50	VNL5050S5-E ●	
	VNL5050N3-E ●	
30	VNL5030J-E ●	
	VNL5030S5-E ●	

Note: \* in development



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