

# TMC248

High Current  
Microstep Driver  
for External MOSFETs  
for up to 7A  
with stallGuard™

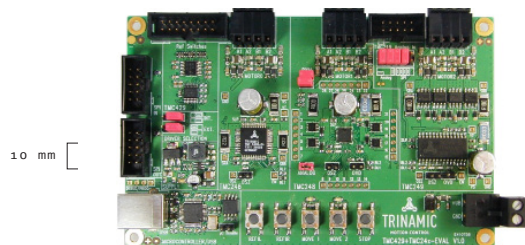
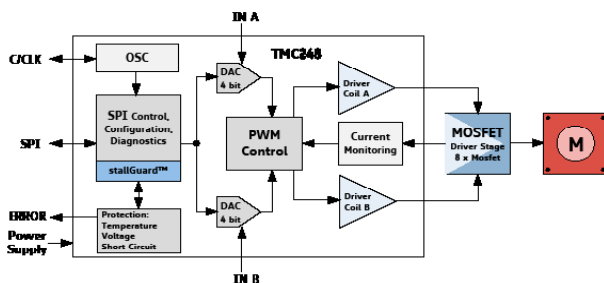


## stallGuard™

**INFO** The **TMC248** is a smart high current microstepping driver for bipolar stepper motors. The integrated sensorless stall detection **stallGuard™** makes it a good choice for applications where a reference point is needed, but where a switch cannot be used. The ability to predict an overload makes the TMC248 an optimum choice for drives where a high reliability is desired. It provides an SPI™ interface as well as the classical analog / digital control. A full set of protection and diagnostic features makes this device very rugged. It directly drives external MOSFETs for currents of up to 7A. (A list of compatible power MOSFETs is given within the datasheet.) This way it reaches an extremely high efficiency and allows driving of a high motor current without cooling measures even at high environment temperatures. With the new chip-scale QFN-28 package a 6A motor driver can be realized on the size of a stamp. The high motor current makes this device ideal for miniaturized highly dynamic and high torque drive systems.

### MAIN CHARACTERISTICS

- **stallGuard™** sensorless stall detection
  - full protection and diagnostics
  - low power dissipation
  - 16 times microstepping via SPI, 64 times using additional shift register, even more via analog control
  - mixed decay for smooth operation
  - programmable slope control for low EMI
  - internal or external chopper clock
  - current control for cool motor / driver operation
  - standby and shutdown mode
- INTERFACE**
- easy-to-use SPI™ interface
  - classical analog interface
- ELECTRICAL DATA**
- up to 7 A coil current with just 4 external dual MOSFETs
  - 7V to 36V motor supply
  - 3.3V or 5V operation for digital part
- PACKAGE**
- QFN-28 5x5mm chip size
  - RoHS compliant



ORDER CODE	DESCRIPTION
TMC248-LA	7A stallGuard driver for external MOSFETs, QFN-28 5x5mm
<b>Related products:</b>	
TMC429+TMC24x-EVAL V2.0	Evaluation board for TMC429, TMC246, TMC248, and TMC249