powerSPIN™ motor driver ICs: the perfect fit for your application

A simple-to-use, open, scalable, single-chip answer to modern motion control system needs

Motion control is a key function in a broad range of systems in practically all segments: from automotive to consumer, from industrial to telecom. However, the trend towards the use of motors of simpler construction means that the control electronics is playing an increasingly important role in achieving the overall motion control system performance.

With its wide range of products, powerSPIN ensures that you will find an effective and cost-competitive solution to your particular motion control problem.

Main applications

- Industrial
  - Vending machines
  - Money dispensers
- Factory automation
- Medical equipment
- Office automation
  - Printers
  - Scanners

powerSPIN family features

- 60V rated DMOS Power Stages
  - $R_{DS(on)} = 0.32\ \Omega$ for 2.8ARMS
  - $R_{DS(on)} = 0.73\ \Omega$ for 1.4ARMS
- Vs supply range from 8 to 52V
- Extensive diagnostic
  - High-side current sensing and over-current protection
  - Undervoltage detection
  - Thermal protection
- Integrated charge pump for high side MOS driving

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Motors can be found in a huge variety of applications and it is nearly always important that they be driven properly. In many cases, a System-on-Chip (SoC) approach would pay off. More often, however, when production volumes are still large but do not reach the level of millions per month, the best trade-off could lie somewhere else. Now, ST offers an attractive, highly integrated but "open" solution, ready to be seamlessly integrated into a variety of different platforms, with several options that enable a finer tuning to the target behaviour. Current and voltage ratings are also wide enough to cover many different requirements found within a platform spectrum.

The powerSPIN motor driver IC family is a simple to use, open, scalable and integrated answer to your motion control problems. Ideal for driving brush DC, bipolar stepper and permanent magnet three-phase brushless motors, the family includes five different product architectures and a choice of two 60V rated DMOS-based integrated power stages: one handling currents up to 2.8A and the other handling up to 1.4A, thus providing system designers with a more

cost-effective option where lower currents are required. Each product is available with three package options to accommodate various assembly and power handling requirements. In addition, powerSPIN offers an extensive range of protection mechanisms such as over-current limitation and diagnostic capabilities, allowing the devices to meet the demand of today's motion control systems for "bullet proof" operation.

Putting powerSPIN to work

To help you to quickly discover which powerSPIN product provides the perfect fit to your system requirements, ST provides a set of demo boards for use with practiSPIN™, our PC-based environment for rapid "live" evaluation of the entire motion control system, including first pass thermal analysis, together with a set of application notes. This comprehensive support will enable you to quickly exploit the rich capabilities we have built into the powerSPIN platform to give a competitive edge to your motion control application.

powerSPIN family selection table

Function	Part number		Description	Packages
	1.4Arms	2.8Arms		
Three-phase brushless motor driver	L6229	L6235	Hall sensor decoding logic, PWM current loop, diagnostic output, fixed overcurrent detection	PowerSO36, SO24, DIP24
Bipolar stepper motor driver	L6228	L6208	Stepping sequence generation logic, twin PWM current loop, diagnostic output, fixed overcurrent detection	PowerSO36, SO24, DIP24
Dual H-bridge with twin PWM control	L6227	L6207	Twin PWM current loop, diagnostic output, fixed overcurrent detection	PowerSO36, SO24, DIP24
Dual H-bridge with adjustable overcurrent detection	L6226	L6206	Diagnostic output, adjustable overcurrent detection	PowerSO36, SO24, DIP24
Dual H-bridge with fixed overcurrent detection	L6225	L6205	Fixed overcurrent detection	PowerSO20, SO20, DIP20

The powerSPIN family of single chip motor drivers bridge the gap betwen System-on-Chip devices targeting large volume speciality applications and standard parts. Versatile yet at the same time higly-integrated, powerSPIN drivers adapt to a broad range of applications.

Order code: FLPOWERSPIN1005

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