

Product Overview

AMIS-30512: Microstepping motor driver

For complete documentation, see the data sheet.

The AMIS-30512 is a micro-stepping stepper motor driver for bipolar stepper motors. The chip is connected through I/O pins and an SPI interface with an external microcontroller. It has an on-chip voltage regulator, reset-output and watchdog reset, able to supply peripheral devices. The AMIS-30512 contains a current-translation table and takes the next micro-step depending on the clock signal on the NXT input pin and the status of the DIR (direction) register or input pin. The chip provides a so-called speed and load angle output. This allows the creation of stall detection algorithms and control loops based on load-angle to adjust torque and speed. It uses a proprietary PWM algorithm for reliable current control.

The AMIS-30512 is implemented in I2T100 technology, enabling both high voltage analog circuitry and digital functionality on the same chip. The chip is fully compatible with the automotive voltage requirements.

The AMIS-30512 is ideally suited for general purpose stepper motor applications in the automotive, industrial, medical, and marine environment.

Features

- Dual H-bridge for 2-phase stepper motors
- Programmable peak-current up to 800 mA using a 5-bit current DAC
- On-chip current translator
- SPI interface
- Speed and load angle output
- Seven step modes from full-step up to 32 micro-steps
- Fully integrated current-sense
- PWM current control with automatic selection of fast and slow decay
- Low EMC PWM with selectable voltage slopes
- Active fly-back diodes

For more features, see the data sheet

Applications

- Pan, tilt, zoom motor control
- Integrated, local control mounted to motors
- Flaps and valves in building and process
- Positioning

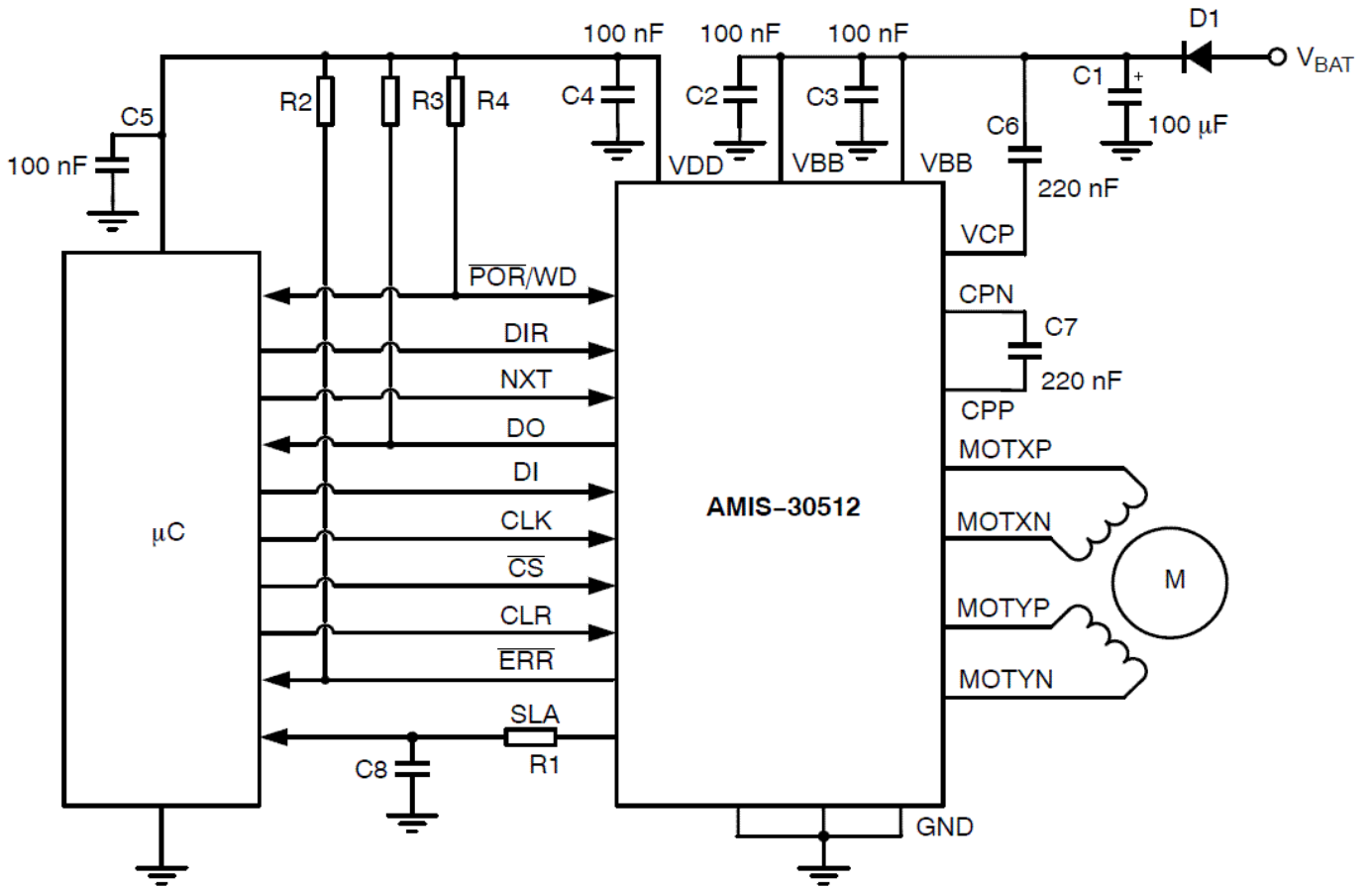
End Products

- Security cameras
- Smart motors (integrated drivers)
- Sewing machines
- Building automation
- Pick-and-place, office equipment

Part Electrical Specifications

Product	Compliance	Status	V _M Min (V)	V _M Max (V)	V _{CC} Min (V)	V _{CC} Max (V)	I _O Max (A)	I _O Peak Max (A)	Step Resolution	Control Type	Current Sense	Fault Detection	Package Type
AMIS30512C5122RG	Pb-free Halide free	Active	6	40	4.75	5.25	0.8	0.8	1/32	SPI	Fully Integrated	Over-Current	SOIC-24

Application Diagram



For more information please contact your local sales support at www.onsemi.com.

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