



Product Overview

AMIS-30542: Stepper Motor Driver with Comprehensive Diagnostic Feedback and SLA Output

[For complete documentation, see the data sheet](#)

Product Description

The AMIS-30542 is a micro-stepping stepper motor driver for bipolar stepper motors. The chip is connected through I/O pins and a SPI interface with an external microcontroller. It has an on-chip voltage regulator, reset-output and watchdog reset, able to supply peripheral devices. AMIS-30542 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 is using a proprietary PWM algorithm for reliable current control. The AMIS-30542 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-30542 is ideally suited for general-purpose stepper motor applications in the automotive, industrial, medical, and marine environment. With the on-chip voltage regulator it further reduces the BOM for mechatronic stepper applications.

Features

- Dual H-Bridge for 2-Phase Stepper Motors
- Programmable Peak-Current Up to 2.2 A Continuous (5 A Short Time) 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 information please contact your local sales support at www.onsemi.com

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