

Product Overview

AMIS-30522: Stepper Motor Driver with Comprehensive Diagnostic Feedback and SLA Output

For complete documentation, see the data sheet.

The AMIS-30522 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-30522 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 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-30522 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-30522 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

- Integrated 5V regulator
- Integrated reset function
- 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

Benefits

- Supplies external microcontroller
- Reset external microcontroller

End Products

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
AMIS30522C5222RG	Pb-free Halide free	Active	6	40	4.75	5.25	1.6	1.6	1/32	SPI	Fully Integrated	Thermal	NQFP-32

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

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