

## Product Overview

### AMIS-30521: Stepper Motor Driver with Comprehensive Diagnostic Feedback and SLA Output

For complete documentation, see the data sheet.

The NCV70521 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. The NCV70521 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 NCV70521 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 NCV70521 is ideally suited for general purpose stepper motor applications in the automotive environment.

### Features

- Dual H-Bridge for 2 phase stepper motors
- Programmable peak-current up to 1.5 A using a 5-bit current DAC
- On-chip current translator
- SPI interface
- Speed and load-angle output
- 7 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

### 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
AMIS30521C5212RG	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](http://www.onsemi.com).

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