

Product Overview

NCV70627: LIN Microstepping Motor Driver 800mA

For complete documentation, see the data sheet.

The NCV70627 is a single-chip microstepping motor driver with position controller and control/diagnostic interface. It is ready to build dedicated mechatronics solutions connected remotely with a LIN master. The chip receives positioning instructions through the bus and subsequently drives the motor coils to the desired position. The on-chip position controller is configurable (OTP or RAM) for different motor types, positioning ranges and parameters for speed, acceleration and deceleration. The NCV70627 acts as a slave on the LIN bus and the master can fetch specific status information like actual position, error flags, etc. from each individual slave node. An integrated sensor-less step-loss detection prevents the positioner from losing steps and stops the motor when running into stall. This enables silent, yet accurate position calibrations during a referencing run and allows semi-closed loop operation when approaching the mechanical end-stops. The chip is implemented in I3T50 technology, enabling both high voltage analog circuitry and digital functionality on the same chip. The NCV70627 is fully compatible with the automotive voltage requirements. Due to the technology, the device is especially suited for use in applications with fluctuating battery supplies.

Features

- Low temperature boost current up to 1100 mA
- Programmable current stabilization phase
- Enhanced Under Voltage Management
- Sensorless step-loss detection
- Automatic selection of fast and slow decay mode
- No external flyback diodes required
- Configurable speeds and acceleration
- Field programmable node addresses
- Dynamically allocated identifiers
- Both physical and data-link layers (conform to LIN rev. 1.3)

For more features, see the data sheet

Applications

- Automotive
- Surveillance
- Building automation

- Distribution

- Machine tools

End Products

- HVAC and headlamp leveling and bending actuators
- Camera positioning
- HVAC, air-duct valves, radiator water-flow valves, greenhouse thermal management, venetian blinds
- Robots, inspection tools, assembly, testing tools, dispensers, valves, pumps, feeders, printers
- Vending machines, sorting machines, warehouse automation

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
NCV70627DQ001G	AEC Qualified	Active	5.5	29	5.5	29	0.8	1.1	1/16	LIN	Fully Integrated	UVLO	SSOP-36 EP
	PPAP Capable											Thermal	
	Pb-free											Over-Current	
	Halide free											Open Coil	
NCV70627DQ001R2G	AEC Qualified	Active	5.5	29	5.5	29	0.8	1.1	1/16	LIN	Fully Integrated	Open Coil	SSOP-36 EP
	PPAP Capable											Thermal	
	Pb-free											Over-Current	
	Halide free											UVLO	
NCV70627MW002R2G	AEC Qualified	Active	5.5	29	5.5	29	0.8	1.1	1/16	LIN	Fully Integrated	Thermal	QFN-32
	PPAP Capable											Over-Current	
	Pb-free											UVLO	
	Halide free											Open Coil	

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

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