

## 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	Pricing (\$/Unit)	Compliance	Status	V <sub>M</sub> Min (V)	V <sub>M</sub> Max (V)	V <sub>CC</sub> Min (V)	V <sub>CC</sub> Max (V)	I <sub>O</sub> Max (A)	I <sub>O</sub> Peak Max (A)	Step Resolution	Control Type	Current Sense	Fault Detection	Package Type
NCV70627DQ001G		AEC Qualified PPAP Capable Pb-free Halide free	Active	5.5	29	5.5	29	0.8	1.1	1/16	LIN	Fully Integrated	UVLO Thermal Over-Current Open Coil	SSOP-36 EP
NCV70627DQ001R2G		AEC Qualified PPAP Capable Pb-free Halide free	Active	5.5	29	5.5	29	0.8	1.1	1/16	LIN	Fully Integrated	Open Coil Thermal Over-Current UVLO	SSOP-36 EP

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