Product Overview

NCV7471: System Basis Chip with Dual LIN, HS CAN and 500 mA Boost-Buck DC-DC

For complete documentation, see the data sheet.

NCV7471(A) is a System Basis Chip (SBC) integrating functions typically found in automotive Electronic Control Units (ECUs) in the body domain. NCV7471 provides and monitors the low-voltage power supplies for the application microcontroller and other loads, monitors the application software via a watchdog and includes high-speed CAN and LIN transceivers allowing the ECU to host multiple communication nodes or to act as a gateway unit. The on-chip state controller ensures safe power-up sequence and supports low-power modes with a configurable set of features including wakeup from the communication buses or by a local digital signal WU. The status of several NCV7471(A) internal blocks can be read by the microcontroller through the serial peripheral interface or can be used to generate an interrupt request.

Features

- Control Logic- Ensures safe powerup sequence and the correct reaction to different supply conditions - Controls mode transitions including the power management and wakeup treatment bus wakeups, local wakeups (via WU pin) and cyclic wakeups (through the onchip timer)- Generates reset and interrupt requests
- Serial Peripheral Interface- Operates with 16bit frames- Ensures communication with the ECUs microcontroller unit- Mode settings, chip status feedback and watchdog are accessible through eight twelvebits registers
- 5 V VOUT Supply from a DC/DC Converter- Can deliver up to 500 mA with accuracy of 2%- Supplies typically the ECUs microcontroller- Suitable for start stop systems with battery voltage as low as 2.5V
- 5 V VOUT2 Lowdrop Output Regulator- Can supply external loads e.g. sensors- Controlled by SPI and the state machine- Protected against short to the car battery
- A Highspeed CAN Transceiver- ISO11898 compliant- TxD dominant timeout protection
- Two LIN Transceivers- LIN2.1 and J2602 compliant- TxD dominant timeout protection
- Wakeup Input WU- Edgesensitive highvoltage input- Can be used as a wakeup source or as a logical input polled through SPI
- Protection and Monitoring Functions- Monitoring of the main supply through the V_MID point- Monitoring of VOUT supply output withprogrammable threshold- VOUT2 supply diagnosis through SPI and interrupt- Thermal warning and thermal shutdown protection- Programmable watchdog monitoring the ECU software

Applications

- Automotive Body Control Modules

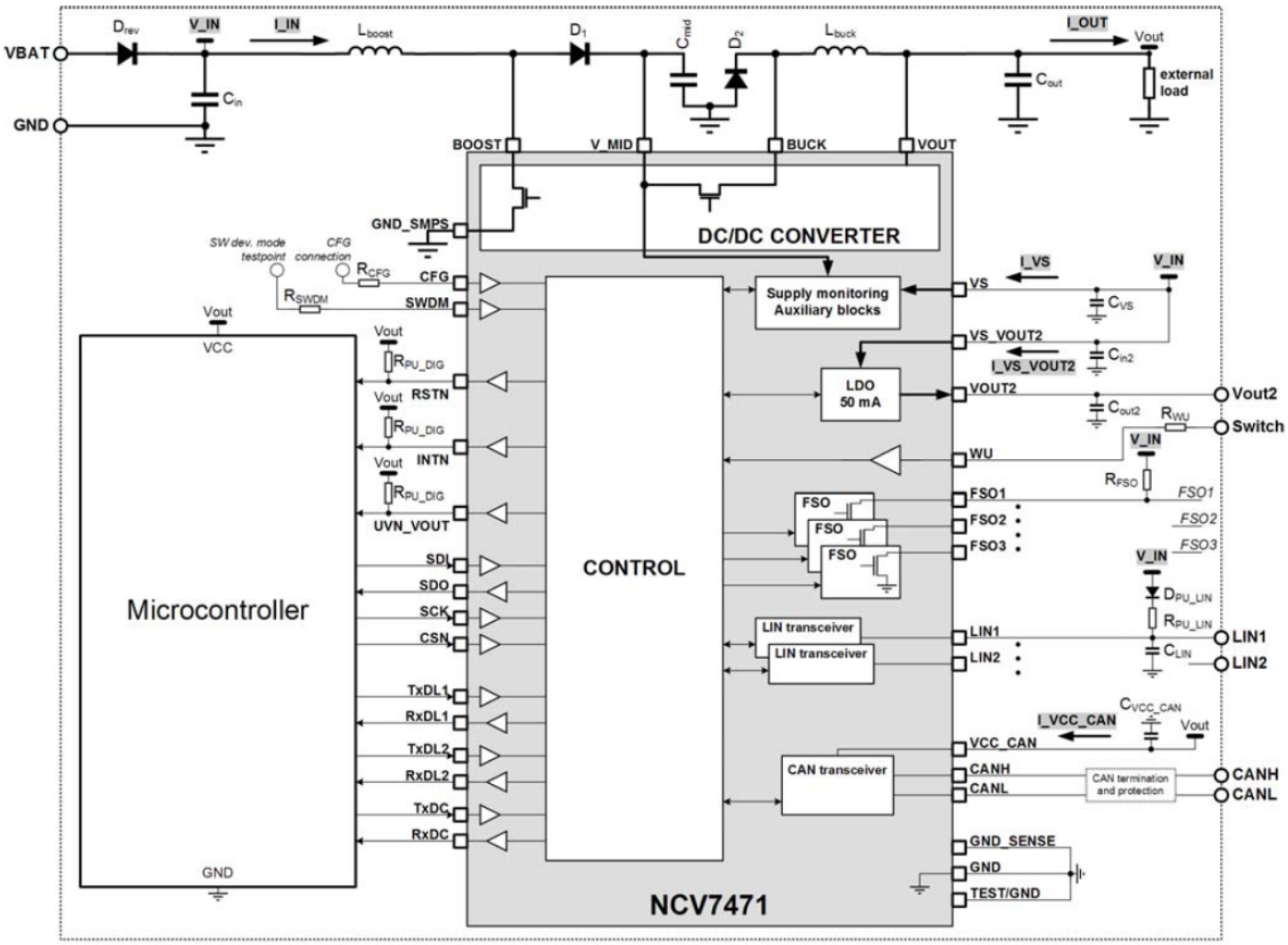
End Products

- Automobiles

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	Data Transmission Standard	Data Rate	Number of Drivers	Number of Receivers	V_{CC} Min (V)	V_{CC} Max (V)	t_{PLH} Max (µs)	I_O Max (µA)	I_{IH} Max (mA)	Package Type
NCV7471ADQ5R2G		AEC Qualified PPAP Capable Pb-free Halide free	Active	LIN CAN	1 Mb/s 20 kbaud	1 2	2 1	2.5	28				SSOP-36 EP
NCV7471DQ5R2G		AEC Qualified PPAP Capable Pb-free Halide free	Active	LIN CAN	20 kbaud 1 Mb/s	1 2	1 2	2.5	28				SSOP-36 EP

Application Diagram



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