NCV7471B

System Basis Chip with a High-Speed CAN/CAN FD, Two LINs and a Boost-Buck DC/DC Converter.

Product Overview

For complete documentation, see the data sheet.

NCV7471B/C is a System Basis Chip (SBC) integrating functions typically found in automotive Electronic Control Units (ECUs) in the body domain. NCV7471B/C 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/CANFD 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 NCV7471B/C 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 power-up 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 on-chip timer)- Generates reset and interrupt requests
- Serial Peripheral Interface- Operates with 16-bit frames- Ensures communication with the ECU's microcontroller unit- Mode settings, chip status feedback and watchdog are accessible through eight twelve-bits registers
- 5 V VOUT Supply from a DC/DC Converter- Can deliver up to 500 mA with accuracy of ±2%- Supplies typically the ECU's microcontroller
- 5 V VOUT2 Low-drop Output Regulator- Can supply external loads – e.g. sensors- Controlled by SPI and the state machine- Protected against short to the car battery
- 11 V (NCV7471B) or 6.5 V (NCV7471C) V_MID Supply from a DC/DC Converter
- A High-speed CAN/CANFD Transceiver- ISO11898-2: 2016 Compliant- Communication speed up to 1 Mbps- Specification for loop delay symmetry up to 2 Mbps- TxD dominant time-out protection
- Two LIN Transceivers- ISO17987-4, LIN2.X and J2602 compliant- TxD dominant time-out protection
- Wakeup Input WU- Edge-sensitive high-voltage input- Can be used as a wake-up 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 with programmable threshold- VOUT2 supply diagnosis through SPI and interrupt- Thermal warning and thermal shutdown protection- Programmable watchdog monitoring the ECU software
- NCV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q100 Qualified and PPAP Capable

  For more features, see the data sheet

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
NCV7471BDQ5R2G	2.568	A P Pb H	Active					2.5	28				SSOP-36 EP
NCV7471CDQ5R2G	2.6896	A P Pb H	Active					2.5	28				SSOP-36 EP