

Product Overview

NCV97200: Automotive Multi-Output Power Management IC (PMIC) for Safety Applications

For complete documentation, see the data sheet.

The NCV97200 is a 2-output monolithic regulator consisting of 1 buck regulator and 1 boost regulator with supervisory functions including window voltage monitoring on all outputs and a window watchdog. This product is ideal for ADAS (Advanced Driver Assistance Systems) applications and utilizes an independent voltage reference and an adjustable independent oscillator to realize the supervisory features.

A 40 V non-synchronous buck regulator converts the battery supply voltage to a 3.3 V output, and delivers up to 3 A (peak). This output rail may be used as the low voltage input voltage for the non-synchronous secondary boost converter. The secondary boost is fixed and is intended to supply a low current 5.0 V rail for In-Vehicle Networking circuits (IVN).

All internal MOSFETs are N-channel devices, and a bootstrap circuit is used to drive the buck high-side MOSFET. Both SMPS outputs use peak current mode control with internal slope compensation. The IC incorporates an internal regulator that supplies charge to the low-voltage gate drivers.

The NCV97200 is a functional safety solution that reduces the time required to develop safety systems that comply with the International Standards Organization (ISO) 26262. The device includes a range of integrated safety features such as dedicated feedback references, output voltage monitoring, and window watchdog.

Features

- 1 Enabled Buck Converter
- 1 Boost Converter for IVN Supply
- Wide Input of 4.1 to 40 V with Undervoltage Lockout (UVLO)
- Fixed Frequency Operation at 2 MHz
- Window Watchdog with Independent References
- Cycle-by-cycle Current Limit Protection
- External Frequency Synchronization
- Pseudo-random Spread Spectrum for Improved EMI
- QFN Package with Wettable Flanks (pin edge plating)
- 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

Applications

- Safety Applications
- ADAS (Advanced Driver Assistance Systems)
- Body Electronics
- Telematics

End Products

- Automotive

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Topology	Control Mode	V _{CC} Min (V)	V _{CC} Max (V)	V _O Typ (V)	I _O Typ (A)	Efficiency (%)	f _{sw} Typ (kHz)	Package Type
NCV97200MW01R2G	1.1333	AEC Qualified	Active	Step-Down	Current Mode	4.1	40	3.3	0.4	80 -85	2000	QFNW-20
		5						3				
		PPAP Capable										
		Pb-free										
Halide free												
NCV97200MW33R2G	1.1333	AEC Qualified	Active	Step-Down	Current Mode	4.1	40	5	3	80 - 85	2000	QFNW-20
PPAP Capable												
Pb-free												
Halide free												

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