Product Overview

NCV890131: Automotive Buck Switching Regulator, 1.2 A, 2 MHz, 45 V Load Dump, Sync In and Sync Out

For complete documentation, see the data sheet.

The NCV890131 is a fixed-frequency, monolithic, Buck switching regulator intended for Automotive, battery-connected applications that must operate with up to a 32 V input supply. The regulator is suitable for systems with low noise and small form factor requirements often encountered in automotive driver information systems. The NCV890131 is capable of converting the typical 4.5 V to 18 V automotive input voltage range to outputs as low as 3.3 V at a constant switching frequency above the sensitive AM band, eliminating the need for costly filters and EMI countermeasures. Two pins are provided to synchronize switching to a clock, or to another NCV890131. The NCV890131 also provides several protection features expected in Automotive power supply systems such as current limit, short circuit protection, and thermal shutdown. In addition, the high switching frequency produces low output voltage ripple even when using small inductor values and an all-ceramic output filter capacitor - forming a space-efficient switching regulator solution.

Features

- 2 MHz Free-running Switching Frequency
- Internal N-Channel Power Switch
- Low VIN Operation Down to 4.5 V
- High VIN Operation to 32 V
- Withstands Load Dump to 45 V
- Logic level Enable Input Can be Directly Tied to Battery
- 1.4 A (min) Cycle-by-Cycle Peak Current Limit
- Short-Circuit Protection enhanced by Frequency Foldback
- ±1.75% Output Voltage Tolerance
- Output Voltage Adjustable Down to 0.8 V

  For more features, see the data sheet

Benefits

- Enables to use small size, low cost inductor and EMC filter
- Fewer external components
- Maintains operation during battery transients
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- Protects the load from load dump
- Flexable enable
- Protects against over current faults
- Protects against short circuits on the output
- Highly accurate regulation.
- Suitable for a wide range of applications

Applications

- Audio
- Infotainment
- Safety - Vision Systems
- Instrumentation

End Products

- Automotive

Part Electrical Specifications

Product	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
NCV890131MWTXG	AEC Qualified PPAP Capable Pb-free	Active	Step-Down	Current Mode	4.5	45	Adjustable	1.2	-	2200	DFN-10

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

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