

## NCV891330

# 3 A, 2 MHz Low- $I_q$ Dual-Mode Step-Down Regulator for Automotive

## Product Overview

For complete documentation, see the data sheet.

The NCV891330 is a Dual Mode regulator intended for Automotive, battery-connected applications that must operate with up to a 45V input supply. Depending on the output load, it operates either as a PWM Buck Converter or as a Low Drop-Out Linear Regulator, and is suitable for systems with low noise and Low Quiescent Current requirements often encountered in automotive driver information systems. A reset pin (with fixed delay) simplifies interfacing with a microcontroller. The NCV891330 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

- 30  $\mu$ A  $I_q$  in Light Load Condition
  - 3.0 A maximum output current in PWM mode
  - Internal N-channel Power Switch
  - VIN operating range 3.7 V to 36.5 V
  - Logic level Enable pin can be tied to battery
  - Fixed Output Voltage of 5.0 V, 4.0 V or 3.3 V
  - 2 MHz Free-running Switching Frequency
  - NCV Prefix for Automotive Requiring Site and Control Changes
  - Withstands Load Dump to 45 V
  - +/-2 % Output Voltage Accuracy
- For more features, see the data sheet

### Benefits

- Low  $I_q$  linear mode at light load
- Efficient switching mode up to 3 A
- No external Mosfet needed
- Designed to run on car battery
- Versatile EN pin
- Simplified design
- Smaller inductor and capacitors, faster response, smaller ripple
- PPAP available

### Applications

- Radio
- Infotainment
- Instrument clusters
- Telematics
- Safety - Vision Systems

### 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
NCV891330PD33R2G	1.3659		Active	Step-Down	Current Mode	3.7	45	3.3	3	85	2000	SOIC-8 EP
NCV891330PD50R2G	1.3659		Active	Step-Down	Current Mode	3.7	45	5	3	85	2000	SOIC-8 EP