

## Product Overview

### NCV8501: LDO Regulator, 150 mA

For complete documentation, see the data sheet.

The NCV8501 is a family of precision micropower voltage regulators with 150mA output current capability. The family has output voltage options for adjustable, 2.5 V, 3.3 V, 5.0 V, 8.0 V, and 10 V that are accurate within  $\pm 2.0\%$ . Maximum dropout voltage reaches 0.6 V at full load.

Low quiescent current is a feature drawing only 90 $\mu$ A with a 100 $\mu$ A load. This part is ideal for all battery operated microprocessor equipment.

Microprocessor control logic includes an active RESET (with DELAY), and a flag monitor which can be used to provide an early warning signal to the microprocessor of a potential impending RESET signal. The use of the flag monitor allows the microprocessor to finish any signal processing before the RESET shuts the microprocessor down.

The active RESET circuit operates correctly at an output voltage as low as 1.0 V. The RESET function is activated during the power up sequence or during normal operation if the output voltage drops outside the regulation limits.

The regulator is protected against reverse battery, short circuit, and thermal overload conditions. The device can withstand load dump transients making it suitable for use in automotive environments.

#### Features

- Output Voltage Options: Adjustable, 2.5 V, 3.3 V, 5.0 V, 8.0 V, 10 V with  $\pm 2\%$  accuracy / 150mA Output Current
- Reset with Adjustable Delay Reset
- Enable
- Early Warning through Flag/Monitor Leads or General Use Comparator
- Fault Protections
  - +60 V Peak Transient Voltage
  - 15 V Reverse Voltage
  - Short Circuit
  - Thermal Overload
- AEC-Q100 Qualified

#### Applications

- Body and Chassis
- Engine Control Unit
- Powertrain

#### Benefits

- Tight regulation limits
- MPU control - design flexibility
- Lower quiescent current when shut down allowing low standby battery drain
- System benefits and design flexibility
- Limit number of external components:
  - Robust load dump tolerance
  - Reverse battery protection
  - Self protection
  - Self protection

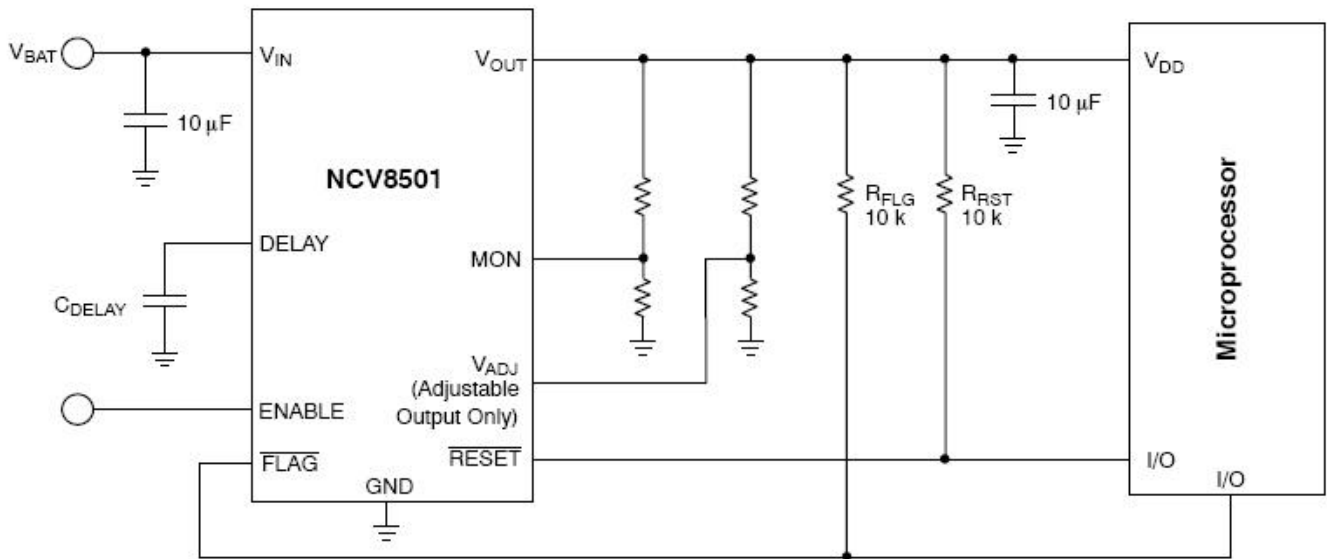
#### End Products

- Automotive

## Part Electrical Specifications

Product	Compliance	Status	Output	Polarity	$V_O$ (V)	$I_O$ Typ (A)	$V_I$ Min (V)	$V_I$ Max (V)	$V_{DO}$ Typ (V)	$I_q$ Typ (mA)	PSRR (dB)	Noise ( $\mu V_{rms}$ )	Enable	Power Good	Package Type
NCV8501D50R2G	AEC Qualified PPAP Capable Pb-free Halide free	Active	Single	Positive	5	0.15	-15	45	0.4	0.09	55	-	Yes	Yes	SOIC-8
NCV8501D80R2G	AEC Qualified PPAP Capable Pb-free Halide free	Active	Single	Positive	8	0.15	-15	45	0.4	0.1	55	-	Yes	Yes	SOIC-8
NCV8501DADJR2G	AEC Qualified PPAP Capable Pb-free Halide free	Active	Single	Positive	Adj	0.15	-15	45	0.4	0.05	55	-	Yes	Yes	SOIC-8
NCV8501PDW80R2G	AEC Qualified PPAP Capable Pb-free Halide free	Active	Single	Positive	8	0.15	-15	45	0.4	0.1	55	-	Yes	Yes	SOIC-16 WB EP

## Application Diagram



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