



## Product Overview

### NCV8503: Linear Voltage Regulator, LDO, 400 mA, with Enable, Delay, Adjustable Reset and General Use Comparator

For complete documentation, see the data sheet

#### Product Description

The NCV8503 is a family of precision micropower voltage regulators with 400mA output current capability. The family has output voltage options for adjustable, 2.5 V, 3.3 V and 5.0 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 1 $\mu$ A when device is switched off. This part is ideal for all battery operated microprocessor equipment.

Microprocessor control logic includes as well an active RESET (with DELAY). 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 below the regulation limits. The reset threshold voltage can be decreased by the connection of external resistor divider to RADJ lead.

The general use comparator (FLAG/Monitor) is referenced to a temperature stable voltage and provides 1.0 mA of drive current at its open collector output. It can be used to provide an early warning signal to the microprocessor of a potential impending RESET signal allowing the microprocessor to finish any signal processing before the RESET shuts it down.

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.

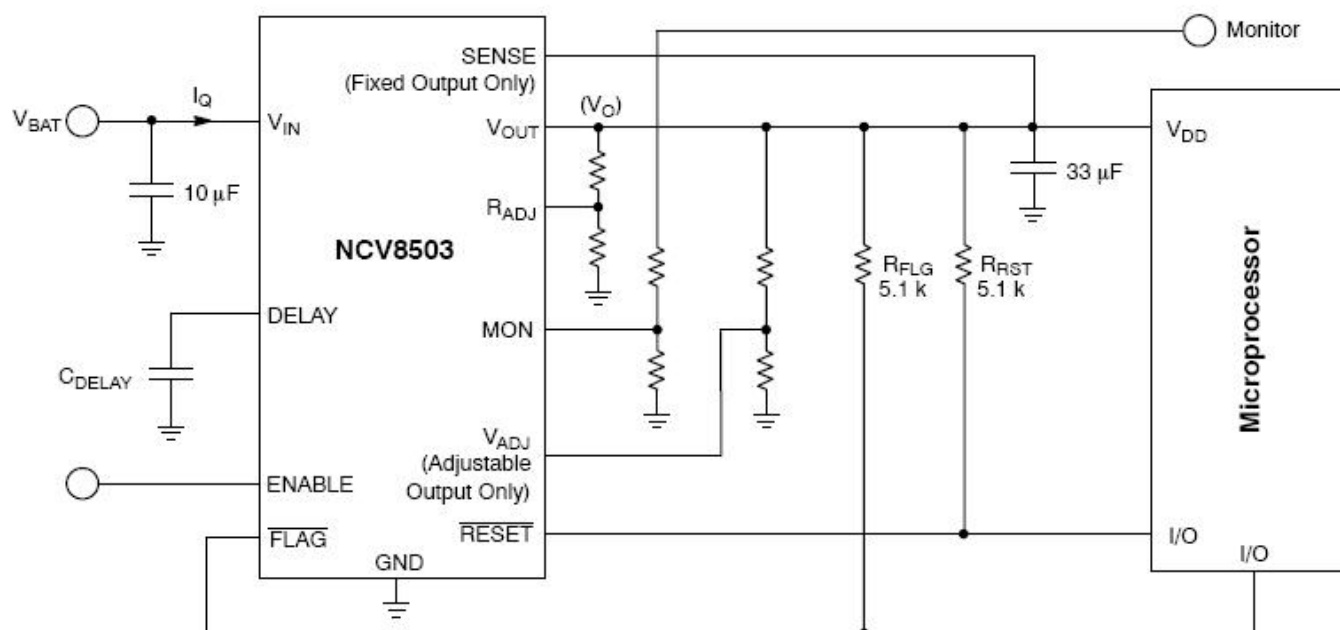
Features	Benefits
<ul style="list-style-type: none"> <li>2.5V, 3.3V, 5.0V, adjustable <math>\pm 2\%</math> Output voltage / 400mA Output Current</li> <li>Enable</li> <li>Reset with Adjustable Delay and Threshold</li> <li>Early Warning through Flag/Monitor leads or General Use Comparator</li> <li>Integrated protections: <ul style="list-style-type: none"> <li>+55V Peak Transient Voltage</li> <li>-15V Reverse Voltage</li> <li>Short Circuit Protection</li> <li>Thermal Overload Protection</li> </ul> </li> <li>AEC Qualified</li> <li>PPAP Capable</li> <li>Pb-Free Packages are Available</li> </ul>	<ul style="list-style-type: none"> <li>Tight regulation limits</li> <li>Low &lt;1<math>\mu</math>A Sleep Current allowing low standby battery drain</li> <li>MPU control - versatile reset control</li> <li>System benefits and design flexibility</li> <li>Limit number of external components: <ul style="list-style-type: none"> <li>Robust load dump tolerance</li> <li>Reverse battery protection</li> <li>Self protection</li> <li>Self protection</li> </ul> </li> </ul>

Applications	End Products
<ul style="list-style-type: none"> <li>Engine Control Unit</li> <li>Powertrain</li> <li>Body and Chassis</li> </ul>	<ul style="list-style-type: none"> <li>Automotive</li> </ul>

## Part Electrical Specifications

Product	Compliance	Status	Output	Polarity	V <sub>O</sub> (V)	I <sub>O</sub> Typ (A)	V <sub>I</sub> Max (V)	V <sub>DO</sub> Typ (V)	I <sub>q</sub> Typ (mA)	PSRR (dB)	Noise (μV <sub>rms</sub> )	Package Type
NCV8503PW33R2G	AEC Qualified	Active	Single	Positive	3.3	0.4	45	0.4	0.2			SOIC-16W EP
	PPAP Capable											
	Pb-free											
	Halide free											
NCV8503PW50R2G	AEC Qualified	Active	Single	Positive	5	0.4	45	0.4	0.2			SOIC-16W EP
	PPAP Capable											
	Pb-free											
	Halide free											
NCV8503PWADJR2G	AEC Qualified	Active	Single	Positive	Adjustable	0.4	45	0.4	0.2			SOIC-16W EP
	PPAP Capable											
	Pb-free											
	Halide free											

## Application Diagram



For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com)

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