



## Product Overview

### NCP623: Linear Voltage Regulator, LDO, Ultra Low Noise, with On/Off Control

For complete documentation, see the data sheet

#### Product Description

Housed in a Micro8 or DFN6 package, the NCP623 Low Dropout Linear Voltage Regulator delivers up to 150 mA where it exhibits a typical 180 mV dropout. With an incredible noise level of 25  $\mu$ V<sub>RMS</sub> (over 100 Hz to 100 kHz, with a 10 nF bypass capacitor), the NCP623 represents the ideal choice for sensitive circuits, especially in portable applications where noise performance and space are premium. The NCP623 also excels in response time and reacts in less than 25  $\mu$ s when receiving an OFF to ON signal (with no bypass capacitor). Due to a novel concept, the NCP623 accepts output capacitors without any restrictions regarding their Equivalent Series Resistance (ESR) thus offering an obvious versatility for immediate implementation. With a typical DC ripple rejection better than -90 dB (-70 dB @ 1.0 kHz), it naturally shields the downstream electronics against choppy power lines. Additionally, thermal shutdown and short-circuit protection provide the final product with a high degree of ruggedness.

#### Features

- Very Low Quiescent Current 170 $\mu$ A, (ON, no load), 100nA (OFF, no load)
- Very Low Dropout Voltage, Typical Value is 137mV at an Output Current of 100mA
- Very Low Noise with External Bypass Capacitor (10nF), Typically 25 $\mu$ V<sub>rms</sub> over 100Hz to 100kHz
- Internal Thermal Shutdown
- Extremely Tight Load Regulation Typically -90dB
- Ripple Rejection -70dB @ 1.0kHz
- Line Transient Response: 1.0mV for  $V_{in}$ =3.0V
- Extremely Tight Load Regulation Typically 20mV at  $I_{out}$ =150mA
- Multiple Output Voltages Available
- Logic Level ON/OFF Control (TTL-CMOS Compatible)

#### Applications

- All Portable Systems, Battery Powered Systems, Cellular Telephones, Radio Control Systems, Toys and Low Voltage Systems

#### Part Electrical Specifications

Product	Compliance	Status	Output	Polarity	$V_O$ (V)	$I_O$ Typ (A)	$V_I$ Max (V)	$V_{DO}$ Typ (V)	$I_q$ Typ (mA)	PSRR (dB)	Noise ( $\mu$ V <sub>rms</sub> )	Package Type
NCP623MN-25R2G	Pb-free Halide free	Active	Single	Positive	2.5	0.15	12	0.18	0.17	70	25	DFN-6
NCP623MN-28R2G	Pb-free Halide free	Active	Single	Positive	2.8	0.15	12	0.18	0.17	70	25	DFN-6
NCP623MN-30R2G	Pb-free Halide free	Active	Single	Positive	3	0.15	12	0.18	0.17	70	25	DFN-6
NCP623MN-33R2G	Pb-free Halide free	Active	Single	Positive	3.3	0.15	12	0.18	0.17	70	25	DFN-6
NCP623MN-40R2G	Pb-free Halide free	Active	Single	Positive	4	0.15	12	0.18	0.17	70	25	DFN-6
NCP623MN-50R2G	Pb-free Halide free	Active	Single	Positive	5	0.15	12	0.18	0.17	70	25	DFN-6

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